

**ARCHAEOLOGICAL EVALUATION REPORT,
ALLENBY ROAD INDUSTRIAL ESTATE ROADS,
LINCOLN**

NGR: TF 00197 71366
Site Code: NEQ04

Report prepared for Jacobs Babtie,
on behalf of Lincolnshire County Council

by

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Summary

- *A programme of trial excavation was undertaken prior to the construction of the proposed North-East Quadrant Development Access on land to the south of Greetwell Road, Lincoln.*
- *The site is known to have a high archaeological potential. A possible Mesolithic settlement site and knapping floor has been identified to the south of the investigation, with numerous Bronze Age barrows located further to the east. Ploughing of the area has yielded large amounts of building stone and Romano-British coins. Romano-British settlement activity is further suggested by geophysical survey, which identified several potential buildings, as well as numerous field boundaries and pit-like anomalies of an uncertain date.*
- *The site yielded a wealth of archaeology, concentrated around Trenches 4-7. Mesolithic worked flint and a series of blown sand deposits attest to the survival of a prehistoric ground surface. A Neolithic ritual pit was identified in Trench 1, and a possible Bronze Age palaeochannel in Trench 14. The majority of the archaeology was concentrated around Trenches 4-7 and dated to the Romano-British period, where the earliest pottery dated to the period of establishment of the legionary fortress at Lincoln and may indicate activities related to stock grazing on legionary territory. Stone building remains in Trench 7 indicated a domestic structure involved in the primary butchery of cattle. High status pottery and tile suggests that there was a well-appointed domestic residence beyond the excavated area. The structures identified were in use from the late 1st to mid 2nd century AD, and appear to have been deliberately demolished at this time. They are set in an agricultural landscape, defined by a series of field boundaries. The latest excavated material consisted of two Christian burials of suspected late Roman date, from Trenches 13 and 16.*

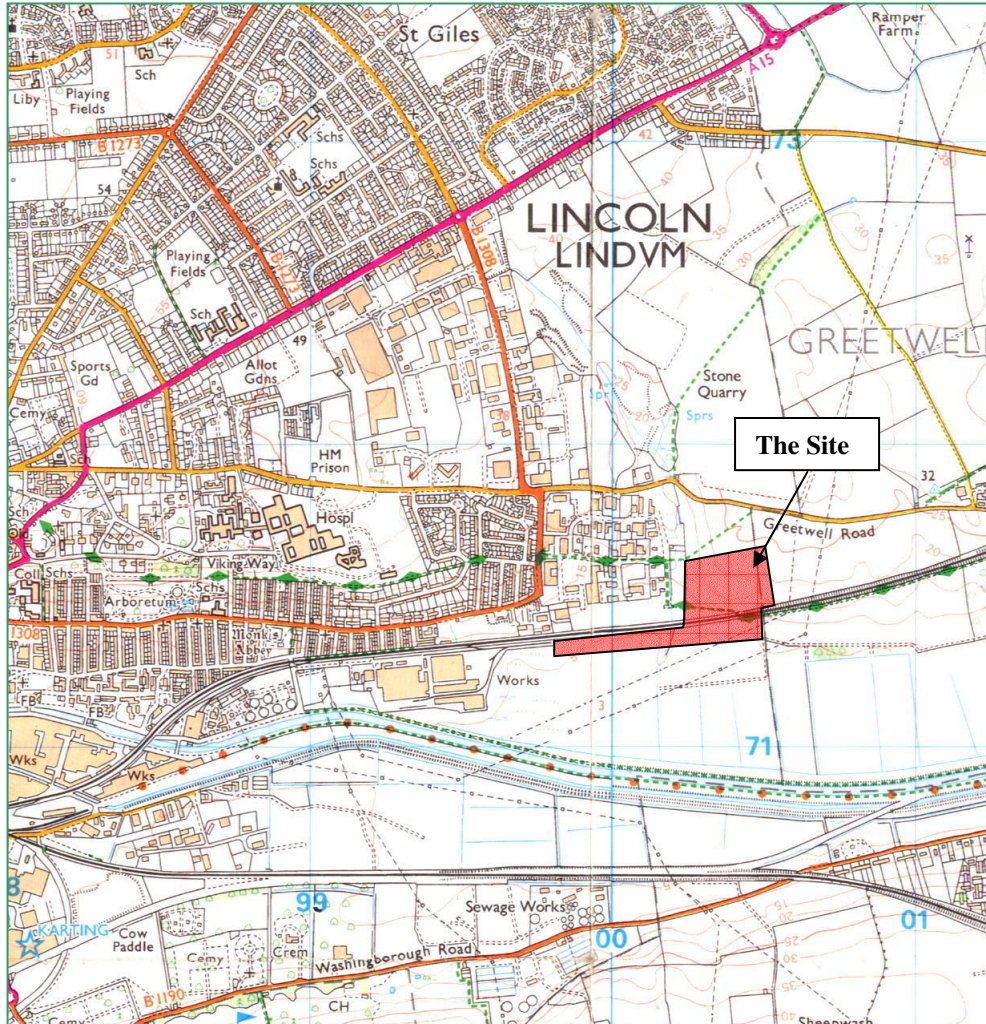


Fig.1: General site location (scale 1:25,000)
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1.0 Introduction

Pre-Construct Archaeology (Lincoln) was commissioned by Jacobs Babbie, on behalf of Lincolnshire County Council, to carry out an archaeological trial excavation on land to the south of Greetwell Road, Lincoln, as part of the North-East Quadrant Development Access Scheme.

These works were undertaken to fulfil the objectives of a project specification prepared by Jacobs Babbie (formerly Babbie Group). 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 field evaluation* (IFA, 1999), 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.

2.0 Site location and description

The site is located on the eastern periphery of the city of Lincoln, to the south of Greetwell Road, and on the north side of the Witham valley. The Lincoln – Market Rasen railway line runs east-west through the site. The area of evaluation to the south of the railway line forms part of a Countryside Stewardship Scheme and is currently under pasture, while that to the north is arable land. The southern portion of the site rises gently northwards from the river, the incline becoming more pronounced to the north of the railway line. The OD heights for the site vary between c.5m and 20m AOD, and the site centres on NGR TF 00197 71366.

In the floodplain of the valley, to the south of the railway line, the local drift geology consists of alluvial sand deposits over Lincolnshire Limestone. Towards the east side of the site there is an outcropping of the Lincolnshire Limestone (not masked by river valley alluvium). The valley slope to the north of the railway line consists of laminated bands of Lincolnshire Limestone (British Geological Survey, 1973).

3.0 Planning background

The current phase of archaeological investigation is intended to form a component of an Environmental Impact Assessment, which is to include preliminary environmental scoping studies and intrusive and non-intrusive surveys. This is with a view to preparing a planning application on behalf of Lincolnshire County Council, for the North East Quadrant Development Access.

4.0 Archaeological and historical background

The area of the Witham Valley that encompasses the proposed development area contains a wealth of archaeological evidence, dating from prehistory to the present day. For the early period, the County Sites and Monuments Record for Lincolnshire lists a number of flint scatters of Late Mesolithic and Early Neolithic date along the river valley.

Trial trenching in advance of the proposed Lincoln Eastern Bypass identified a palimpsest of prehistoric features occupying a sand levee on the north bank of the Witham, approximately 200m south of the east end of the current site. The earliest feature yielded Late Mesolithic/Early Neolithic flints and a hazelnut shell radiocarbon dated to the early 8th millennium BC. The flint assemblage suggested the presence of a nearby knapping floor; further indication that some form of early prehistoric settlement was focussed on the sand levee, with intermittent occupation being evident from the Mesolithic period through to the Later Bronze Age. Further trenching to the west of the sand levee identified a peat-filled former channel, which suggested that the River Witham swung northwards during the early Bronze Age. This channel truncated the end of the levee and appears to have put paid to settlement activity in this area, which environmental sampling suggests was submerged during the Mid to Late Bronze Age. Trenches further to the north and north-east also exposed evidence of Bronze Age peat formation, which served to seal and hence preserve an earlier prehistoric land surface (Rylatt, 2004).

A stretch of the Witham floodplain, from Lincoln to Stainfield, is well known for its extensive prehistoric funerary monuments, which occur in a series of discrete clusters. One such cluster (SMR ref.52841) is located immediately to the south and south-west of the proposed development area, and consists of the ploughed out cropmark remains of eleven Bronze Age barrows. One of these barrows is located approximately 150m south of Trench 13, and another approximately 200m south-south-east of Trench 12 of the current phase of works. This barrow cemetery faces another cluster of seven barrows situated to the south of the river (SMR ref.60930).

The Witham itself was for a long time a focus for religious/votive activity, witnessing the apparent deliberate deposition of high status metal objects, many of which were found in the last two centuries during canalisation and periodic dredging of the Witham. Several Bronze Age swords having been found at Stamp End (JBAA, 1855), three Late Bronze Age swords at Washingborough, and numerous dispersed finds from the river below Lincoln; including the Iron Age Witham Shield and an Iron Age dagger with a 'Lincoln Imp' pommel (now lost) (May, 1976). In several cases, these votive deposits cluster around a series of suspected wooden causeways of Late Bronze Age to Iron Age date. Such features have been hypothesised at both Washingborough and Stamp End. The best understood example, at Fiskerton, has been subject to two phases of excavation, exposing two rows of posts dating between 456 and 317BC. Associated finds included an iron spear, iron swords, a dagger, woodworking tools, a currency bar, and a complete dug-out canoe, apparently unused and built into the causeway as a votive deposit (Rylatt, 2004). It is possible that another nine such causeways exist on the Witham between Lincoln and Chapel Hill (Stocker & Everson, 2002).

Romano-British activity is well represented in the area of proposed development. Lincoln itself was a major Roman centre, which superseded the Iron Age settlement that occupied natural outcrops of sand and gravel in the low-lying, seasonally flooded areas around the Brayford Pool (Jones, 2002). In the latter half of the first century AD, a legionary fortress was established on the north side of the Lincoln Gap. Towards the end of the century a military establishment was no longer required, and the town became a *colonia*; a major administrative centre, established to provide retired legionaries with land and property.

The site is situated some 2km east of the Roman town, although excavations in advance of quarrying to the north of Greetwell Road (c.1.2km north-north-east of the site) identified Romano-British roundhouses, and building debris from stone structures. Ten corn driers and a series of ditches defining rectilinear field systems were also identified, and a total of thirteen burials of 2nd to 4th century AD date (SMR refs. 54602 & 52842). This Romano-British activity appears to respect a major north – south triple linear ditch system extending northwards from Greetwell Road for c5km, which is believed to have been created in the Iron Age (SMR ref. 50348). These features represent a small component of the undoubtedly extensive agricultural hinterland required to feed the major urban population of Lincoln.

To the west of the above, and approximately 400m north-west of the west end of the proposed development, ironstone mining during the 19th century uncovered the remains of a high status late Roman building, overlooking the Witham Valley. The building was soon destroyed by quarrying, but detailed records were made by the quarry manager. The east – west pavilion, at 86m in length suggests a vast building complex, decorated with painted wall plaster, and mosaics of the highest quality, indicative of the employment of a continental mosaicist. The opulence of the structure, and the associated coin assemblage, which suggests occupation from the 4th century to the very end of the period of Roman rule, has led to the hypothesis that this may have been the residence of the provincial governor of *Flavia Caesariensis*, the province centred on Lincoln, following the division of *Britannia* into four cantons during fourth century administrative reform (Jones, 2002).

Approximately 350m south of the east end of the site, trenching on the line of the Lincoln Eastern Bypass revealed a row of preserved wooden stakes running north – south for at least 50m. A radiocarbon date from one post suggested a date of AD 20 – 260, placing the structure in the very late Iron Age or Roman period. The row of stakes may represent a boundary, or possibly form one side of a trackway, supporting raised wooden planks, and running towards the river over what would have been seasonally flooded marshland at the time (Rylatt, 2004).

Relatively little evidence of Anglo-Saxon activity has been identified in the vicinity of the site. Lincoln seems to have been almost completely abandoned until Danish settlers stimulated regrowth in 9th century. It appears that the collapse of the Roman administrative structure meant that the navigable channels of the Witham, the Car Dyke and the Fosse Dyke were no longer maintained adequately, this process of silting being exacerbated by agricultural over-exploitation of the high ground. This consequently limited the opportunities for trade and increased flooding of the low-lying areas of the Witham Valley, making these regions unsuitable for occupation (Sawyer 1998, Steane & Vince, 1993). Isolated finds include a late Anglo-Saxon

spearhead found close to Greetwell Church (SMR ref. 52828), and a highly ornate silver bowl of 8th/9th century date dredged from the Witham at Washingborough in 1816 (Bruce-Mitford, 1993).

To the south of Greetwell Road, and 400m east of the current site, lie the earthwork remains of the medieval village of Greetwell, which appears in the Domesday Book as *Grentewelle*, meaning ‘the gravelly spring’ (Cameron, 1998). The site is protected as a Scheduled Ancient Monument (SAM22748) under the 1979 Ancient Monuments and Archaeological Areas Act. The only extant building is the church, which has origins in the 11th century, although extensively reworked (Pevsner & Harris, 1989). It is believed that the village was cleared during the 17th century, to make way for the formal gardens of Greetwell Hall, which forms the southern component of the complex of earthworks.

The early medieval period saw extensive ironstone and limestone mining in the area, as well as exploitation of the natural resources of the Witham, as attested by the numerous fisheries listed in the Domesday Book (Morgan & Thorn, 1986). The Witham continued to be a major trade route connecting Lincoln to the North Sea via Boston. However, a downturn in the economic fortunes of the city during the 14th century resulted in the failure to maintain the navigability of the river, a factor that only served to prolong the economic stagnation of Lincoln and its hinterland. The lack of maintenance of the river also led to extensive flooding, rendering low-lying areas unsuitable either for agriculture or occupation (Hockley, 1992). This problem was not successfully resolved until the Witham Drainage Act in 1762 made funds available for the cleaning out, canalisation and embanking of the river. However, progress was slow, and works were still necessary in the early 19th century, under the Lincoln and County Drainage Act of 1804 (White 1979, Wright 2001).

5.0 Methodology

Following an extensive geophysical survey of the area, a total of eighteen trenches were investigated across the proposed development zone:

Trench 1: Measuring 10m x 10m, this trench was located to investigate a pit-like geophysical anomaly

Trench 2: This was positioned east – west in an area devoid of anomalies in order to test the results of the geophysical survey. The trench was 20m x 2m.

Trench 3: This measured 20m x 2m and was positioned on a north – south alignment across an anomaly interpreted as a possible former pond.

Trench 4: The trench measured 20m x 2m and ran east – west across three linear anomalies.

Trench 5: This 20m x 2m trench was aligned north-north-east to south-south-west across a further three linear anomalies.

Trench 6: This was positioned across the intersection of two linear anomalies, and measured 10m x 10m.

Trench 7: The trench was 40m x 2m and ran west-south-west to east-north-east across a series of anomalies interpreted as the remains of possible Roman buildings.

Trench 8: Aligned east – west, this 20m x 2m trench was positioned across two linear anomalies.

Trench 9: Trench 9 was positioned across a linear anomaly. It was 20m x 2m and extended northwards from the east end of Trench 8.

Trench 10: Measuring 10m x 10m, this was positioned to intercept a pit-like anomaly.

Trench 11: The trench ran south-south-west to north-north-east across a number of possible linear features, and measured 20m x 2m.

Trench 12: This was positioned on a west-south-west to east-north-east alignment across a series of linear anomalies. The trench measured 20m x 2m.

Trench 13: This was aligned west-south-west to east-north-east and measured 40m x 2m. It was positioned to intercept a possible linear feature.

Trench 14: The trench was aligned west-south-west to east-north-east and measured 40m by 20m. It was positioned in an area that contained no geophysical anomalies of potential archaeological significance.

The initial programme required the excavation of the above listed trenches; after which an additional four trenches were required (Trenches 15-18) to investigate the area to the north of the railway line. Each of these were 40m x 2m, positioned as follows:

Trench 15: Aligned broadly south-west to north-east, the trench was positioned across a series of linear features indicative of possible Romano-British field systems.

Trench 16: This was located to intersect two broadly east-west linear anomalies, and was aligned north-north-east to south-south-west.

Trench 17: Positioned on a north-east to south-west alignment, this trench was to investigate a number of discrete pit-like anomalies, and a linear feature.

Trench 18: This was placed in the field to the east of that containing Trenches 15-17, aligned north-north-east to south-south-west across an east-west linear anomaly and a strong magnetic signal believed to be derived from geological variation.

6.0 Results

6.1 Trench 1 (figs. 3,4)

A series of intercutting pits and a number of irregular linear features were identified. Several of these produced small quantities of Romano-British pottery and tile, where the features may have been associated with sand extraction.

There was a 0.3m deep topsoil, 100, and an intermittent subsoil layer, 101. Beneath this was a series of intercutting irregular, sub-circular and sub-oval pits, 103, 105, 107, 112, 119, 130, 133, 138, 141, 143; varying in size from 0.5m to 3.5m across. The fills of these features were largely similar, comprising accumulations of brown and grey/brown silty sands. Pits 103, 107, 112, 118, 131, 140 contained small amounts of Roman brick and roof tile. Pottery was recovered from pits 119 and 138, dating to the early – mid 2nd century AD.

Pit 119 was cut by a deep, steep-sided pit, 117, containing a dark grey sand, 116. This was sealed by a spread of brown peaty sand, 115, the organic component of which requires damp/waterlogged conditions to form.

To the east of pits 117/119, a sub rectangular pit, 120, extended 0.65m into the trench. It contained an undated fill of grey sand, 121.

The lack of artefactual material within these pits precludes the possibility of them being waste pits or structural components associated with a domestic settlement. They may have been dug for the extraction of sand, which would explain the variation in their sizes and the irregularity of their forms.

Three linear features were also identified. Ditch 114/135 extended 4.5m from the south side of the trench, and ended with an irregular U-shaped terminus. It had truncated the fills of pits 119 and 138, and was cut by pits 130 and 143. The ditch contained a primary silting deposit of grey/brown sand, 136, sealed by a similar secondary fill, 137. The upper fill, 137/113 contained a single fragment of Roman brick and two residual worked flints of Mesolithic/Neolithic date.

To the north side of the trench, two parallel linear features were exposed, running broadly west-south-west to east-north-east, 124 and 126. 124, the northernmost of the two contained a single fill of brownish grey sand, 125. Feature 126 contained a primary fill of grey sand, 127, and a secondary fill of brown peaty sand, 128. This was very similar to deposit 115, and again suggests formation in a waterlogged environment.

In the north-west corner of the trench, a thin spread of pale grey sand, 129, was interpreted as a prehistoric blown sand layer, representing a possible former ground surface, overlying the natural sand, 102.

6.2 Trench 2 (fig. 5)

The trench contained a number of small pits and four linear features, most of which were undated.

The topsoil, 201, was dark grey/brown silty sand, approximately 0.3m deep. Towards the west end of the trench, cut into the natural sand, 230, were two north – south aligned linear features, 203 and 206. 206, to the west, was steep sided and contained a single undated fill, 205. Ditch 206 exhibited a more shallow east edge, with a moderately steep return to the west. It contained three fills; a primary of slightly clayey sand, 204, suggestive of possible waterborne deposition; a thin lens of possibly wind blown sand, 224, and a final layer of natural silting, 202, which contained three small fragments of Roman tile and a piece of Roman brick. The relationship between the two ditches was not established, as this junction had been truncated by the cut for a large ceramic land drain.

Approximately 4m east of 203, a complex of pits and linear features was investigated. Stratigraphically, two of the earliest features were small sub-circular pits, 213 and 217, both of which contained undated fills of grey/brown sand, 212 and 216 respectively. Both were cut by a north-north-west to south-south-east linear feature, 215, which contained two distinct sandy fills, suggestive of natural silting, 226 and 214. This ditch may relate to a linear anomaly detected by geophysical survey (fig. 2). The upper fill of this feature, 214, produced two fragments of Roman roof tile. It was itself cut by a wide, shallow linear feature, 235, which had diffuse edges, but appeared to run north-north-east to south-south-west. It contained a single fill of brownish grey sand, 225. At the south side of the trench, it cut a series of inter-cutting pits, 209, 211, 233. 208 and 210 were post-dated by pit 233, which was 1.1m wide in section, and contained two fills; a thin lens of blown sand, 231, sealed by a natural silting deposit, 232. Pit 233 was also cut by ditch 215. Pit 211 contained two fragments of Roman tile.

An irregular shaped pit, 219, cut the east edge of 235. This contained two distinct fills, 218 and 234, both of which were undated. The pit also cut another small, undated pit, 221, filled by 220.

At the east end of the trench was another very diffuse, poorly defined linear feature, 223, running broadly north-west to south-east. Its edges were poorly defined, although three possible fills were recognised, all indicative of natural silting of the ditch, 222, 227, 228.

6.3 Trench 3 (fig. 6)

A single large shallow sided feature was exposed, containing waterlogged deposits at its base. This feature appeared to confirm the interpretation of a geophysical anomaly at this location as a pond.

The uppermost deposit in the trench was a topsoil layer of dark brown silty sand, 301, overlying a mid brown sandy subsoil, 302. This sealed a single large cut feature with a very shallow sloping northern edge, 308, cutting through the natural sand, 307. A

series of deposits were observed within the feature. The primary fill was a very dark grey silty sand, 306 with small amounts of organic material. This is likely to represent an initial silting of the feature, with an element of leaching from the overlying deposit, 305. This was a black sandy peat, formed naturally from decaying organic matter in a waterlogged environment. A soil sample from this context yielded small quantities of charcoal and fired clay. 305 was overlain by a blue-grey silty clay, 304, representing natural deposition of fine sediments in an anaerobic environment of standing water. This contained five fragments of Roman tile, and a piece of brick, re-worked into a disc, and perhaps used as a pot lid. The final fill was an orange-brown silty clay, 302, again suggesting deposition by slow moving/standing water, although not in anaerobic conditions.

The trench had been placed over a geophysical anomaly interpreted as a possible pond; a hypothesis confirmed by excavation.

6.4 Trench 4 (fig. 7)

A series of linear features of Romano-British date were exposed, possibly representing former field boundaries.

The topsoil, 400, was approximately 0.2m deep and sealed a subsoil layer, 401, up to 0.5m deep. This in turn sealed a layer of mid brown silty sand, 413, which was interpreted as a possible buried topsoil, sealing all the features exposed in the trench. At the very west end of the trench, a north – south linear feature was exposed, 414. This had a moderately steep east side, a concave base, and part of a steep west edge, although the full extent of the feature was beyond the limit of excavation. The fill, 415, was a brown sand, containing 22 sherds of domestic pottery of late 1st/early 2nd century date, and 16 fragments of Roman brick and tile, one of which had been reworked to form a disc. 16 fragments of animal bone from this context represented cattle and sheep/goat, some of which had been burnt or butchered. The fill also yielded 11 fragments of residual worked flint, produced in the Mesolithic/Neolithic periods. This feature appears to relate to a north – south linear anomaly identified by geophysical survey (fig. 2).

The trench intersected two further linear features, 407 and 402. 407 contained a fill of brown silty sand, 408, containing 3 fragments of animal bone and pottery of 1st- 2nd century date, including one piece of very early, pre-Flavian samian ware (pre AD69). An iron nail and ten fragments of Roman roof tile were also recovered from this context. A faint linear anomaly was identified at this location by geophysical survey.

To the east, ditch 402 was 0.9m wide and 0.5m deep, with a fill of dark brown sandy silt, 403. Its fill yielded eleven sherds of pottery of late 1st/early 2nd century date. This included three fresh sherds from an almost complete samian dish, dating to the Flavian period (AD69-96). Small amounts of roof tile and brick, and fifteen fragments of animal bone were also recovered. A soil sample from this context contained charcoal, grain, chaff, and charred and uncharred weed seeds. The context also yielded a dolphin brooch dating to the second half of the 1st century, and four residual worked flints. To the east, 402 cut a very shallow sub-circular pit, 411, which

contained an undated fill of light brown sand, 412. Ditch 402 appears to relate to a north – south geophysical anomaly (fig. 2).

To the west, 402 cut through a broadly east – west ditch, 410. This exhibited moderately sloping sides and it ended with an irregular, bulbous terminus. The fill, 404, produced 20 sherds of pottery of late 1st – 2nd century AD date, a fragment of brick, a fragment of tile, animal bone from cattle, sheep/goat, and pig, and 19 fragments of worked flint.

The west end of the ditch was cut by a broadly sub-circular pit, 406, which contained a fill of dark grey sand, 405. Three fragments of animal bone were recovered, as well as 12 sherds of pottery of 1st/2nd century date.

All features in this trench were cut into a natural deposit of yellowish grey and orange sand, 409.

6.5 Trench 5 (fig. 8)

The trench contained three linear features, producing Roman pottery and large quantities of Roman roof tile.

The trench was sealed by a topsoil, 500, and subsoil, 501, totalling approximately 0.6m in depth. Beneath this, a linear ditch, 503, was observed running east-south-east to west-north-west. The ditch was 1.3m wide and 0.8m deep, and contained a single fill of dark grey sand, 504, which produced 24 sherds of Romano-British pottery of probable 2nd century AD date, 141 fragments of Roman roof tile, 3 fragments of brick, and fragments of cattle and sheep/goat bone.

Immediately to the south of the ditch, a second linear feature, 506, was identified, running north – south, and terminating 0.6m from 503. This was 1.4m wide and survived to a depth of 0.4m. It was filled with a brownish grey sand, 505, from which two small fragments of animal bone, five sherds of 2nd century pottery, 18 fragments of tile and brick and an iron nail were recovered.

Ditch 506 cut a small east – west spur of another (possible) ditch, 510. This contained a fill of dark grey sand, 508, containing pottery of late 1st/early 2nd century date, two small fragments of animal bone from an unidentified large mammal, two iron nails and a single flint chunk. It also produced 117 fragments of relatively unabraded, Roman tile. To the south of this, 506 also cut a small circular undated pit, 509.

The natural geology in this trench consisted of a light yellowish brown sand, 502.

6.6 Trench 6 (figs. 9, 10)

A series of regular inter-cutting linear features were exposed, possibly indicating robbed out foundation trenches of Romano-British date.

The uppermost deposits in this trench comprised the topsoil, 600, and subsoil, 601, which sealed a series of linear features, all cut into a natural deposit of pale greyish yellow sand, 602. Two north-south gullies, 604 and 611, and an east-west gully, 616 were exposed, and were interpreted as possible beam slots. The relationship between 604 and 616 was not established due to the similarity of their respective fills, 603/606, and 615. However, it was possible to establish that 611 had cut 616. Gully 604 contained eleven sherds of 2nd century pottery, and 19 fragments of Roman brick and roof tile and a broken set of copper alloy tweezers.

At the south side of the trench, 604 was cut by a 1.0m wide ditch, 607, running north-north-east to south-south-west. The ditch contained a single homogenous fill of dark grey sand, 608/609/610. This incorporated several fragments of animal bone, 53 sherds of Romano-British pottery dating to the early – mid 2nd century AD, 41 fragments of Roman tile and brick, and one iron nail. The relationship between ditches 607 and 616 was not established. A soil sample taken from this context yielding charcoal fragments, as well as grain, chaff, and weed seeds. The ditch correlates well with a linear anomaly identified during the geophysical survey (fig. 2).

A final linear feature, 613, ran west-north-west to east-south-east, cutting ditches 604, 607 and 611. It contained a fill consisting of a series of clearly defined lenses of orange/brown and grey sand, 614. Despite the presence of Romano-British pottery and tile, the nature of the fill suggested a relatively recent origin: the clearly defined pockets of material within the feature indicated that very little post-depositional mixing through animal and root disturbance had taken place since initial backfilling.

6.7 Trench 7 (figs. 11, 12)

The trench contained four stone foundations of Roman date, and a series of possible robbed foundations, defining more than one building. The trench also yielded large amounts of animal bone and domestic pottery, suggesting a domestic function for the structure.

The topsoil, 700, was a dark greyish brown silty sand, approximately 0.3m deep, and this sealed a subsoil layer, 701. A component of the latter contained abundant limestone rubble, context 713. The natural geology, into which all features had been cut, consisted of a mixed greyish-yellow and orange/brown sand, 702.

The limestone rubble in 713 was derived from a series of underlying stone foundations, which could be related to a series of multi-phase anomalies identified during the geophysical survey.

Towards the east-north-east end of the trench, the first stone structure was defined by a construction cut, 730, approximately 0.7m wide, running east - west. The foundation itself had been largely robbed away, but a component of stonework survived against

the north section of the trench, consisting of poorly sorted sub-angular rubble. It is likely that this material represents the remnants of a rubble core associated with a more substantial, but largely robbed out, wall. The stone was surrounded by a matrix of mid – dark brown sand, 704, which may have been used as packing material, or may have accumulated within voids after the robbing of the structure. There was no evidence of any mortar or binding material on or between the stones, but it is possible that this material has eroded away, which would suggest that deposit 704 accumulated after the abandonment of the structure. Nine fragments of Roman tile and two residual worked flints were recovered from this context.

To the west of 730, the construction cut for a north – south wall, 731, was observed. This ran broadly north – south, was 0.6 – 0.7m wide and contained a limestone rubble foundation of a similar construction to 703, context 705. Again, the stones were surrounded by a matrix of mid – dark brown sand, 706.

Approximately 2.6m to the west, another construction cut, 732, ran north – south. This was more substantial, at between 1 and 1.25m wide. The foundation, 707, also consisted of large roughly dressed limestone blocks. The stonework was surrounded by a mid – dark brown sand, 708, which produced five sherds of 2nd century AD domestic greyware pottery, eight fragments of Roman tile, eight fragments of cattle and sheep/goat bone and a single retouched flint flake. The presence of this material within the foundation matrix suggests that it accumulated after the abandonment of the structure.

Another possible construction cut, 733, ran east – west, approximately 7m west of 732. It was 0.7m wide, and contained the remains of a foundation, 709, largely robbed, leaving moderate quantities of sub-angular limestone rubble within a matrix of mid – dark brown sand, 710. To the south, 733 appeared to cut an intermittent, shallow spread of rubble, 741, running north-north-west to south-south-east. This may be the remains of an earlier wall, or a spread of material from the collapse of wall 709.

Abutting walls 703, 705 and 707, a deposit of dark greyish brown sand was recorded, 714, gradually lensing out 10m west of 707. This was interpreted as a layer of blown sand and natural silting, which accumulated around the walls following the abandonment of the structure. A soil sample from this context contained grain and chaff fragments and small amounts of fired clay. A copper alloy spatula was also recovered from this context. This tool was identified as a surgical implement, consisting of the spatula at one end and a scalpel blade at the other, missing in this case. The possible date range for this implement is AD50-150.

The trench also contained a series of linear features, representing boundary/drainage ditches and possible robber trenches.

Two parallel linear features, 715 and 717, ran north – south 1.4m to the west of, and parallel to, construction cut 732. Both were approximately 0.6 – 0.65m wide, although 715 exhibited a much steeper profile. Both features contained brown silty sand, indicative of natural accumulation, 716 and 718 respectively. Fill 716 incorporated twelve sherds of pottery of 2nd century date and five fragments of Roman roof tile; two fragments of tile were derived from 718. The steep profile of 715 suggests the

possibility of it being a robber trench representing the line of a former wall. However, the fill was devoid of building rubble, suggesting that it was instead a property boundary associated with wall 707 and ditch 717.

To the west of 715/717, another linear feature ran north – south across the trench, 722, and was cut by construction cut 733. The ditch was 0.7 – 0.9m wide, with moderately sloping sides and a flat base, containing a fill of brown silty sand, 723. The latter contained a single fragment of horse femur.

Gully 724, 7m west of 722, also ran north – south, and measured 0.4m wide and 0.15m deep. Its fill, 725, produced six sherds of pottery of 1st/2nd century date, including one sherd in an Iron Age tradition (which could be later Iron Age or early Roman). Again, this feature was on the same alignment as constructions cuts 731 and 732 and ditches 715, 717 and 722, suggesting that it formed part of a complex of related features.

Less than 1m west of 724, ditch 726 ran on a slightly different alignment, broadly north-north-west to south-south-east. It contained a fill of brownish grey sand, 727, from which eight sherds of late 1st/early 2nd century AD pottery and six fragments of Roman tile were recovered.

At the west end of the trench, three intercutting linear features were recorded. Two parallel ditches, 736 and 738 ran east – west. 736 became wider to the east, and was cut by a north-north-west to south-south-east ditch, 721. 736 did not extend beyond 721, suggesting that it terminated at this point. Only one side of ditch 738 was exposed, although the area showing in plan suggested a width in excess of 1.5m. Ditch 721 contained large quantities of pottery, totalling 75 sherds. This assemblage was dominated by domestic greywares and shell gritted fabrics, although it also included south Gaulish samian ware, two fragments of an amphora from Cadiz, southern Spain, and two sherds of a pink fabric (also found in deposits associated with Lincoln's legionary fortress). The date of deposition is estimated at late 1st to early 2nd century AD. The ditch also produced 53 Roman tile fragments, a single piece of brick, and 49 fragments of animal bone, representing sheep/goat, cattle and horse, several fragments of which exhibited gnawing and several fragments that showed signs of butchery. The abundance of domestic waste from this context suggests repeated dumping of rubbish in the ditch during the life of the surrounding buildings, and hence may define the limits of the domestic zone. All three ditches cut through a light grey silty sand, 734, interpreted as a possible blown sand deposit resting on the underlying natural and indicating a former ground surface predating the Roman activity in Trench 7.

The trench also contained three pits. Pit 728, to the east of ditch 722, measured 1.2m by 0.55m and 0.15m deep. It contained an undated fill of yellowish brown sand, 729.

Two further pits were exposed either side of construction cut 730. To the south was a large sub-circular pit, 739, which appeared to post-date 730. Excavated material included 96 fragments of animal bone, including cattle, horse, sheep/goat, and three fragments of a roe deer antler. Dating evidence consisted of fifteen sherds of pottery of late 1st/early 2nd century AD and 14 fragments of Roman tile. The abundance of artefactual material suggests that it was a rubbish pit.

To the north of 730, a small pit, 711, c. 1.0m wide and 0.3m deep was excavated against the north edge of the trench. It contained a fill of dark grey sand, 712, producing 169 fragments of animal bone of sheep/goat, cattle, horse, pig and dog. Three sherds of 2nd century pottery and three flint flakes were recovered. Again, this is likely to be a rubbish pit.

6.8 Trench 8 (fig. 13)

Two north – south linear features were exposed, the larger of which contained small amounts of rubble and may have been a robber trench.

The topsoil, 800, and the underlying subsoil, 801, sealed two north – south linear features at the west end of the trench, both of which had been cut into the natural sand, 802. The larger of the two, ditch 803, was 1.5m wide and 0.5m deep, with steep sides and a flat base. Small amounts of limestone rubble were observed in the base of the feature. The presence of the rubble, along with the steep profile of the feature suggests that it may have been a trench to rob out a former wall. It contained three fragments of Roman tile.

Ditch 805 was 1.1m wide and 0.25m deep, and contained a single undated fill of dark brownish grey sand, 806.

6.9 Trench 9 (fig. 14)

A single east – west linear feature was exposed, producing 1st/2nd century AD pottery.

A layer of topsoil, 900, and a subsoil layer, 901, totalling 0.7 – 0.85m in depth, sealed the trench. A single, irregular linear feature was exposed running east – west towards the north end of the excavation. This was approximately 2.2m wide and 0.6m deep, with moderately steep sides and a flat base. The fill, 904, was a dark grey sand, containing a single fragment of animal bone, four sherds of Romano-British pottery dating to the late 1st – 2nd century AD and eight fragments of Roman tile. The natural geology consisted of an orange/brown sand with lenses of gravel, 902.

6.10 Trench 10 (fig. 15)

The trench contained a small gully and three shallow pits, all of which contained substantial quantities of Roman roof tile and building rubble.

The trench contained a topsoil layer, 1000, of dark brownish grey sand, which sealed intermittent grey/brown sandy subsoil, 1001. The underlying natural geology was a yellowish brown limestone brash, 1002, marking a change in the natural geology from alluvial sands to Lincolnshire Limestone.

A steep-sided linear feature, 1005, was observed extending 8.8m east-south-east into the trench before ending in a U-shaped terminus. The fill contained two sherds of

samian ware and a single greyware sherd, dating the context to the 1st/2nd century, which also yielded 50 fragments of Roman brick and roof tile, much of which was very abraded.

A large broadly sub-circular pit, 1007, was exposed against the north edge of the trench. It was 2.4m wide and 0.6m deep and extended 1.8m into the trench. The fill, 1006 was a grey silty sand that produced four fragments of animal bone, four sherds of Roman pottery of 2nd century date, 78 fragments of Roman tile (of which much was very abraded) and an iron nail.

In the south-west corner of the trench, two large shallow pits were observed, 1009 and 1011. 1009 contained a single sherd of south Gaulish samian and a sherd of Iron Age tradition pottery, both dating to the first century AD. The fill of 1011, 1010 produced a total of 104 fragments of Roman tile. Again, much of this contained very abraded remains. The tile assemblage was largely roof tile, but also included several fragments of thin walled box tile, used in hypocaust heating systems. It is possible that at least some of this material was actually from pit 1009, as the relationship between the two features was not established.

6.11 Trench 11 (fig. 16)

A series of eight closely-spaced pits were excavated at the south end of the trench, one of which produced a single sherd of Roman pottery. The trench also contained two undated linear features.

The topsoil in this trench, 1100, was 0.2 – 0.4m deep and sealed a subsoil layer, 1101 of a similar depth. At the south end of the trench this sealed a series of eight broadly sub-circular pits, 1107, 1109, 1111, 1113, 1115, 1117, 1119, 1121, varying in size from 0.65m to 1.3m diameter. Of these, pits 1107, 1111, 1113, 1115 were fully exposed in plan, while the others were partially beyond the east edge of the trench. Only one of these, 1111, produced dating evidence, consisting of a single sherd of greyware, broadly dated to the Romano-British period.

Just over 1m north of pit 1107, ditch 1103 ran west-north-west to east-south-east. It contained a fill of grey/brown sand, 1104 that produced no dating evidence. This appears to relate to a geophysical linear anomaly (fig. 2).

Another linear feature, 1105, also ran west-north-west to east-south-east, approximately 3m north of 1103. This was a steep sided feature 0.6m wide and 0.4m deep, which was also devoid of artefactual material.

6.12 Trench 12 (fig. 17)

A single linear feature containing pottery of Romano-British date was excavated towards the east end of the trench.

The topsoil in this trench, 1200, was 0.35m deep and sealed a natural geology of orange/brown limestone brash, 1201. A single linear feature, 1202, was cut into this,

running north – south. The fill was a greyish brown sand, 1203, which yielded four sherds of pottery of late 1st/early 2nd century date and a single piece of Roman brick.

6.13 Trench 13 (figs. 18, 19)

A series of boundary features of suspected prehistoric date was identified, as well as a single Roman ditch. The trench also contained a Neolithic pit of possible ritual significance and an east – west inhumation burial, believed to be late Roman.

The trench was sealed by a topsoil layer, 1301, and an underlying subsoil, 1302. At the west end, 1301 and 1302 were separated by 1341, a light brown silty sand extending 8.6m into the trench. This was very similar to a deposit exposed in trench 14 to the west (1401), and may be some form of ground raising/levelling deposit, possibly using material derived from the digging/straightening of the adjacent dyke.

At the west end of the trench, a series of intercutting linear features were investigated. Ditch 1318 ran eastwards from the west end of the trench. This feature gradually narrowed before ending in a V-shaped terminus. The fill was a brown/grey sand, 1317, which was undated. At its west end, the ditch cut a possible natural feature, 1322. The cut for another east – west linear feature, 1321, was observed in the base of a section dug through ditch 1318. This contained two undated fills, 1319 and 1320, and in turn cut a small undated pit, 1325. It is possible that 1321 represents a continuation of ditch 1315, an east – west gully also cut by 1318, and observed extending eastwards from the terminus of 1318.

At its east end, 1315, merged with a north-north-east to south-south-west ditch, 1313. This was 1.3m wide and 0.55m deep. Three distinct episodes of natural silting were recognised within this feature, identified by the fills 1338, 1337 and 1314. Only the upper fill contained artefactual material, consisting of a single piece of Roman brick. To the east, it was cut by ditch 1311, which diverged north-eastwards, and contained a fill of brown silty sand, 1312, which was also devoid of artefactual remains.

Approximately 2.1m east of ditch 1311, another ditch, 1310, ran north – south. It was 2.3m wide and 0.6m deep, with an irregular, stepped profile, containing four fills. The primary and secondary fills, 1307 and 1308 were indicative of natural silting and were sealed by a possible blown sand, 1306. 1307 contained five fragments of Roman tile. The upper fill, 1309, was an orange brown sand. The irregular profile of the ditch and the shape of deposit 1309 suggest that 1309 actually represented a recut of the ditch following the deposition of 1306. 1309 produced three tile fragments, one large piece of brick and a single residual flint flake.

To the east of 1310, a large ditch, 1329, ran obliquely across the trench, on a west-north-west to east-south-east alignment. It was approximately 2.2m wide and 0.5m deep, and contained two distinct fills. The primary silting, 1330 was a grey/brown silty sand, containing several fragments of unidentified animal bone, five sherds of early second century pottery and four worked flints. The overlying fill, 1328, yielded two roof tile fragments.

To the south of 1329, and partially beyond the limit of excavation, two pit-like features were observed. 1343 was 1.8m east to west, and contained fragments of human bone. Further fragments of human bone were recovered from the spoil heap adjacent to this feature, and represented a probable adult male. The feature was not fully excavated but appeared to represent an extended inhumation, following the Christian burial practice of aligning the grave east to west. This practice was adopted in the early 4th century AD in England, and therefore it is believed that this feature belongs to the late Roman period or later.

East of 1343, a small circular pit was exposed, 1332, extending 0.4m into the trench. It was 0.65m wide and 0.35m deep with steep sides and a slightly concave base. The fill, 1331, was black, charcoal-rich silty sand. It contained small fragments of unidentified burnt bone, and pottery sherds representing two decorated vessels of Mortlake style Peterborough ware, dating to the middle to later Neolithic. A soil sample from this context contained charcoal, grain, charred and uncharred weed seeds and small quantities of burnt bone. The finds assemblage and the form of the pit is typical of Neolithic pits excavated elsewhere in the country and believed to hold some form of specific ritual significance for the local community (Allen, Appendix 2).

Towards the east end of the trench, ditch 1329 was cut by a steep sided pit or ditch terminus, 1303. Two fills were identified, primary fill 1305 and secondary fill 1304, both indicative of natural silting. Both fills contained worked lithic materials, which must be considered to be residual, as 1304 also yielded three fragments of Roman tile, and 1303 cut ditch 1329, the primary fill of which contained Romano-British pottery.

To the east of 1303, two diffuse intercutting linear features were excavated. Ditch 1342 ran north – south, and was cut by the east – west ditch 1334. 1334 did not extend beyond the west edge of 1342. 1342 contained a fill of orange and brown sand, 1333, which yielded eight fragments of worked flint of Late Mesolithic/Early Neolithic and Bronze Age date. Additional flint was found at this end of the trench during hand cleaning, and may have been derived from these features (finds allocation no. 1344). This was largely Late Mesolithic/Early Neolithic in date, but included one Late Neolithic/Early Bronze Age fragment.

6.14 Trench 14 (fig. 20)

A series of grey sand deposits representing possible flood horizons or a former channel were identified. They sealed another more defined channel containing a basal peaty deposit and an overlying sand layer producing Bronze Age pottery. A build up of material beneath the topsoil may be a ground raising deposit similar to a layer exposed in Trench 13.

The topsoil was dark brownish grey sand, 1400 that sealed a layer of brown silty sand with frequent limestone flecks, 1401. This was very similar to deposit 1341 in Trench 13, and has been interpreted as a material derived from the straightening of the adjacent stream into a dyke. In the central portion of the trench, this sealed a thin layer of pale brownish grey, possibly wind blown sand, 1403, which lay on the natural sand, 1402.

A slot excavated towards the west end of the trench exposed a sequence of three pale grey and grey/brown sand layers, 1404, 1405, 1406. The exact formation processes of these features are uncertain. It is possible that they represent flood horizons or the infilling of a channel related to the adjacent beck, predating its canalisation. Alternatively they may represent a sequence of buried land surfaces. Only 1406 produced any artefactual material, consisting of two worked flints and three fragments of animal bone from an unidentified large mammal.

Beneath 1406 one side of a cut feature was exposed, 1409, running north-north-east to south-south-west. The primary fill, 1407, was a dark greyish brown peaty sand, with a considerable organic component suggesting formation in anaerobic conditions. Finds from this context consisted of seven worked flint fragments covering the Early Mesolithic to Bronze Age, a pot boiler fragment and two fragments of unidentified animal bone. A soil sample contained small quantities of charcoal and fired clay and frequent waterlogged wood fragments. The overlying deposit, 1408, was a grey/brown sand, containing small amounts of organic material. It also contained two small pottery sherds of probable Bronze Age date.

6.15 Trench 15 (fig. 21)

The trench exposed a series of linear features, relating to anomalies identified during the geophysical survey. One of these contained small quantities of Roman pottery.

The topsoil, 1500, was between 0.2 and 0.3m deep, and sealed the natural geology of sub-angular limestone chunks in a matrix of brown clayey sand, 1501. Cut into this deposit, four linear features were observed.

Approximately 8.5m from the west end of the trench, a linear feature, 1506, ran north – south. It was, for the most part, 0.55m wide, splaying out to approximately 1m at the south side of the trench. The single fill, was a brownish grey clayey sand, 1507, yielding a single sherd of early to mid 2nd century AD greyware pottery.

Approximately 6.2m further east, another ditch, 1504, ran north – south. It was 1.55m wide and 0.3m deep, and contained a single fill, 1505, from which 5 fragments of Roman roof tile were recovered.

East of 1504, two intercutting ditches were exposed. 1502 ran north-west to south-east, and measured 1.5m wide in plan and 0.4m deep. To the east it cut a small north – south gully, 1508. Both features were undated, but 1508 contained four fragments of rib from an unidentified large mammal.

The ditches exposed appear to relate to a series of geophysical anomalies running across the west end of the trench (fig. 2).

6.16 Trench 16 (fig. 22)

The trench contained a single ditch of Romano-British date, which was cut by a east - west inhumation burial, also of probable Romano-British date.

The topsoil was a dark greyish brown silty sand, 1600, sealing the natural geology, 1601, a deposit of sub-angular limestone brash. The topsoil sealed two features.

A linear feature, 1602, ran on a west-south-west to east-north-east alignment. It was 1.2m wide and 0.4m deep, and contained a fill of grey/brown clayey sand, 1603, from which a sherd of 2nd century greyware and four Roman tile fragments were recovered. This feature had previously been identified during the geophysical survey (fig. 2).

The fill of the ditch was cut by a sub-oval grave cut, 1604, containing a supine adult inhumation. The body was fully extended, with the head tipped towards the north and the arms bent upwards at the elbows. The grave fill, 1605, also contained two sherds of Romano-British greyware of 2nd century date. This pottery was possibly residual, derived from the ditch fill, as the burial practice represented by the inhumation is of a Christian form; only adopted in Britain in the early 4th century AD.

6.17 Trench 17 (fig. 23)

The trench contained a small undated pit, and a much larger pit interpreted as a hollow excavated for the burning of lime for mortar, possibly associated with the Roman buildings exposed in Trench 7.

The topsoil, 1700, was between 0.25 and 0.4m deep, and sealed a natural geology of limestone brash in a matrix of brown clayey sand, 1701. Two features were cut into this deposit.

Towards the centre of the trench, a small sub-circular pit, 1706 was excavated. It was 0.7m by 0.55m across and only 0.05m deep. The fill was a very dark grey clayey sand, 1707. The date and function of this feature was not established.

At the south-west end of the trench, a more substantial pit, 1702 was examined. It was sub-circular in plan, 3.1m wide and extended 1.2m into the trench, and was 1.05m deep. Three fills were recognised. The primary fill, 1703 was a deposit of brownish red platey limestone chunks in a matrix of brownish red and light brown clayey sand. The reddening of the material in this deposit was caused by direct exposure to intense heat. It is possible that this deposit represents part of a lining to the pit, or more likely, represents the effect of heating on the natural geology into which the pit had been cut.

The secondary fill, 1704, was a backfill deposit of yellowish brown sand and sub-angular platey limestone chunks. This deposit was interpreted as a backfilling of the feature with redeposited natural. The fill also contained small quantities of abraded Roman roof tile. It was sealed by a pinkish brown clayey sand, with occasional burnt stone, 1705. This may also be a backfill deposit incorporating some burnt material, and may be at least partially derived from an earlier cleaning-out of the pit. The feature has been tentatively interpreted as a hollow to burn local limestone to create

lime for mortar. In this context it may be associated with the nearby stone buildings of Romano-British date exposed in Trench 7 to the south.

6.18 Trench 18 (fig. 24)

The trench contained a single undated linear feature, previously identified by geophysical survey.

The uppermost deposit in the trench was a 0.45m deep ploughsoil, 1800, overlying the natural limestone brash, 1801. A single linear feature, 1802, cut this, running north – south across the central portion of the trench. It was 1.9m wide and 0.35m deep, and contained a single undated fill of greyish brown clayey sand, 1803. It can be related to an anomaly identified during the geophysical survey (fig. 2).

7.0 Discussion and conclusion

The earliest artefactual materials from the site comprise worked flints, largely from residual contexts. These materials cover the period from the early Mesolithic through to the Bronze Age, although concentrated in the Later Mesolithic and Early Neolithic periods (Rylatt, Appendix 3). This material was determined to be predominantly residual, either because it was found in contexts with later artefacts, or in contexts that were stratigraphically dated to the Romano-British period or later. The only features where these early artefacts could be considered *in situ* were in ditches 1334 and 1342, at the east end of Trench 13. Previous investigations in advance of the Lincoln Eastern Bypass identified a sand levee to the south of the current site, intermittently occupied from the Later Mesolithic into the Bronze Age (Rylatt, 2004). This suggests that the current site and its environs were frequently visited, perhaps seasonally by Late Mesolithic/Neolithic peoples, establishing temporary camps in the vicinity, as attested by the presence of the burnt lithic materials (Rylatt, Appendix 3).

Possible blown sand deposits in Trenches 1, 7, and 14 indicate the possible preservation of earlier ground surfaces. Although these deposits remain undated by this phase of work, it is of note that prehistoric ground surfaces were observed to the south of the current site during evaluation trenching on the route of the proposed Lincoln Eastern Bypass, sealed by Bronze Age peat formations (Rylatt, 2004).

Other than ditches 1334 and 1342, the earliest dateable feature investigated during the current phase of works was a small pit in Trench 13. The pit, 1331, produced pottery of middle to later Neolithic date, and has been interpreted as being of a form commonly associated with ceremonial activity. Pits of a similar size containing a similar assemblage of materials (namely flint, pottery and burnt bone) have been found throughout eastern England, and it is believed that they were ritually excavated and backfilled with midden matter, and represent a marker used by a community to indicate a seasonal visit to an area that formed part of a wider territory, commemorating this act within the collective memory of the community (Pryor 2003, Allen Appendix 2). Previous work in the area has shown that this part of the Witham Valley was exploited from at least the Mesolithic, and the presence of a possible

Neolithic long barrow and later Bronze Age barrows to the east of the site further enhance the significance of this feature within the broader landscape context.

Trench 14 also yielded material of significance for the prehistoric period. A possible ditch or palaeochannel was identified, the upper fill of which produced pottery of probable Bronze Age date, although this date is tentative as it relied on two sherds of pottery totalling only 2g in weight. It is possible that this feature, and the overlying deposits, relate somehow to earlier phases of the adjacent watercourse, which was glacial in origin, and runs north – south through the small valley known locally as Greetwell Hollow, connecting with a series of springs to the north of Greetwell Road. To the north, it is constrained by the limestone bedrock of the north side of the Witham Valley, but upon reaching the wide shallow floodplain of the Witham, the stream is likely to have followed a less defined course, perhaps forming a series of small braided channels running through a marshy area, with frequent flooding leading to the deposition of successive layers of alluvial material, and thus creating the sequence of deposits identified in Trench 14. The presence of cultural material at the base of these deposits, and the nearby Neolithic pit in Trench 13 suggest that the stream was an important focus of activity during the prehistoric period.

The main focus of the archaeological activity represented on the current site dated to the Romano-British period, and was centred on Trench 7. Pottery from the construction cuts of stone walls and associated features suggest that the structure was built during the late 1st/early 2nd century. However, numerous earlier sherds were recovered, suggesting that activity was taking place at the very beginning of the Roman occupation of the area. A sherd of a South Gaulish samian ware cup was dated to the pre-Flavian period, i.e. before AD69. This places the site within the time frame of the military occupation of Lincoln, where a fortress was established by *Legio IX Hispana* during the reign of Nero (AD54-68) (Jones 2002). Further sherds of pottery with a pink fabric and a fine greyware fabric from the current site are paralleled with sherds found in legionary deposits in Lincoln. On the current site, these sherds are residual in later contexts, and hence the activity represented is unclear. However, it is highly significant to find such early activity at a distance from the legionary fortress. Excavations in Lincoln have shown that a suburb rapidly developed outside the walls of the fortress, supplying the various needs of the legionaries, principally to the west and south of the stronghold, extending to the river and beyond (Jones, 2003). The region of the current site has been identified as potentially within the *prata legionis*; legionary territories used to provide grazing land for cattle supplying the army (Jones, 2003). The early pottery from the current site may relate to troops or civilians camped out here and engaged in the care and maintenance of this agricultural zone, and perhaps guardian military cattle stocks in a potentially unstable recently conquered territory.

The main thrust of the dating evidence falls towards the end of the 1st century and the beginning of the 2nd, and centres on the stone structures in Trench 7. At least one building of this date is represented, although the layout of the structure is speculative. It is suggested that 703 and 707 form two outer walls, with an internal division represented by 705. Wall 709 to the west therefore, would represent part of another structure, be it a different building or a boundary wall. Alternatively, walls 703 and 705 could represent one building, with 707 and 709 forming two walls of a second building. This would however cast some doubt on the function of the parallel gullies

715 and 717, which can possibly be seen as parallel property boundaries running adjacent to wall 707, and hence defining 707, 705 and 703 as part of the same structure. Unfortunately, the dating evidence in this trench is not sufficiently tight to establish a clear phasing or relative chronology.

The precise construction methods employed in this structure are unclear from the excavated evidence, as only the stone foundation courses survived, the remainder having been robbed and affected by ploughing in the intervening centuries. The paucity of nails from the site (only six were recovered, none from the area of the building in Trench 7), and the abundance of locally available building stone, suggests that the walls may have been entirely built from stone, although the possibility that the walls were of half timber construction on stone footings, with wattle and daub or stone infill cannot be discounted.

Two basic forms of stone building were used in Roman Britain – masonry, or mortared rubble construction (de la Bedoyere, 1991). Masonry construction employed neatly dressed blocks, held in place simply by their weight. This technique however was expensive and required the use of skilled masons. Furthermore, no neatly dressed stonework has been recovered from the site. Rubble construction uses roughly shaped stone, usually held fast by mortar or concrete. Although no mortar has been identified on the current site, the current phase of work has identified sand extraction pits (Trench 1), and a lime burning pit (Trench 17), necessary components of mortar manufacture. A number of possibilities can explain this. The lime burning pit and sand extraction pits may have been employed to provide mortar for a structure beyond the excavated area, with the walls in Trench 7 representing un-bonded rubble foundations dumped into a construction trench. Alternatively, only the upper courses of the building may have been mortared, again resting on rubble filled foundation trenches, with the bonded walls having been pulled apart and removed from the site. However, it would be expected that this would leave large amounts of waste mortar, which was not the case.

The final possibility is that the mortar has eroded away. The building was abandoned in the mid 2nd century and seems to have been deliberately demolished. Mortar, once exposed to the elements, is a soluble material, which could have dissolved/eroded in the 1850 years between the abandonment of the building and the present day. However, it seems highly unlikely that this material would be eroded away to the extent that no trace whatsoever of it remains on the site.

The excavated material has provided limited evidence to assess the function of the buildings. Associated pits and ditches produced large quantities of animal bone, some of which exhibited clear signs of butchery. The assemblage was interpreted as evidence of the primary stages of butchery, cutting animal carcasses into large joints to be consumed elsewhere, although there was some food waste incorporated (Kitch, Appendix 8). This was not however taking place on an industrial scale, and may merely represent domestic waste, with the butchered meat being consumed nearby. Indeed, the pottery assemblage is also of a domestic nature, consisting of greyware jars and cooking pots, as well as fragments of amphora from Southern Spain, commonly used to transport fish products.

The geophysical survey of the area identified potential building remains well beyond the limits of Trench 7, and it is possible to observe a slight mound extending approximately 20m to the south of the trench, which may indicate further buried buildings. In this case, the area investigated by Trench 7 may represent only an element of a significantly larger complex of structures, where the principal activity may have approximated that of an abattoir, with additional areas for the dumping of domestic waste. Despite being of stone construction, this is somewhat low status activity (stone is readily available in the locality, and has been quarried from Roman times through to the present day). Other buildings in this area may have performed totally different functions and could well be of a higher status, as the material evidence from the area of Trenches 4-7 suggests.

Large amounts of roof tile were recovered from the site, mainly from Trench 5. It is of note that the majority of this was discovered away from the stone buildings in Trench 7, which may suggest that the buildings had fallen into disrepair and were carefully dismantled, the tile being stockpiled in the region of Trench 5 before being reused (or abandoned).

Within the tile assemblage were a number of quarter circular tiles, which had been produced in the nearby Washingborough tile kilns. These are commonly believed to have been used to create half or full columns, and are most likely to have been plastered over their frontage to act as decorative features within moderately well-appointed buildings. Small quantities of box-flue tile have also been recovered from the site, evidencing a hypocaust system (another indicator of high status structures).

On considering the high status material that has been recovered, and the strong possibility that further buildings exist in the area, two possibilities present themselves. The decorative quarter circle tile and box flue tile may belong to a small, well appointed residence, at the centre of an agricultural estate. Other high status materials being brought to the site include the samian finewares imported from France, a dolphin brooch from Trench 4, and amphora from Spain containing fish products and olive oil. Within this context, the material evidence may support the presence of a Roman bath building on the site. Such structures are by necessity built of stone and tile, due to the risk of fire, and would also have required elaboration in the form of a hypocaust system, and decorative features such as those suggested by the numerous quarter circle tiles recovered from the site. Furthermore, the medical implement found in Trench 7, in isolation is unlikely to evidence a medical practice at the site, but is of a type frequently found at bath houses (Daubney, Appendix 2).

Related outbuildings may have been constructed nearby, where cattle from the estate were perhaps brought to be slaughtered and butchered, providing for the local estate owner and farm workers, with perhaps a surplus being transported into Lincoln for sale. Surrounding these buildings, boundary ditches divided the landscape into a network of fields, and the nearby river provided a further source of income.

The building remains in Trench 7 appear to have been constructed in the late 1st/early 2nd century, early in the civilian development of the *colonia* of Lincoln. The city, like many others in the Roman Empire was established as an administrative, political and cultural centre from which Roman government, religion and ideas would spread through the local native communities. To initiate this process, *colonia* were largely

inhabited, at least at their inception, by retired soldiers, pensioned off with grants of land in captured territory. Hypothetically, it is possible to see this process taking place at the current site. The buildings in Trench 7 date to a relatively early period in Roman Britain for the adoption of distinctly Roman building techniques, pottery styles and foodstuffs (eg. imported olive oil and fish products), and this may be as a result of a non-native civilian or retired legionary establishing the site.

Regardless of the function of the buildings, or who occupied them, it was a relatively short-lived occupation. The pottery from the site almost completely disappears after the mid 2nd century; the only later material being small quantities of unstratified sherds from Trenches 5, 6 and 9, and intrusive, abraded sherds from Trench 4. This suggests that the buildings were abandoned less than a century after their construction. They also appear to have been deliberately dismantled soon after this. The concentration of tile from the area of Trench 5 indicates that the roof of the building was removed first, stockpiled and then reused elsewhere, allowing the subsequent removal of the stone walls. The fact that no pottery dating to the later Roman period or beyond has been recovered is an indication that the demolition of the buildings most likely took place during the second century.

Definite activity post-dating the abandonment and demolition of these structures is restricted to the small quantities of pottery of 3rd/4th century date recovered, which attest to only very limited activity at the end of the Roman period, of an unknown character. However, two inhumations were identified, in Trenches 13 and 16. The burial practice represented by these features was distinctly Christian in form, being east – west aligned extended supine burials. Such inhumations were only adopted in Britain following the Edict of Toleration passed by the Emperor Constantine in AD 313, which allowed the acceptance of the Christian faith across the Empire. A small burial site of 2nd to 4th century date was excavated c1km to the north of the current site, associated with a series of roundhouses, corn driers and field systems. It may be that these burials belong to this community and are outliers of the burial area, or have been excluded from the formal cemetery for some reason.

8.0 Effectiveness of methodology

The methodology employed, involving a geophysical survey followed by a programme of intrusive investigation was appropriate to the scale and nature of the proposed development. The geophysical survey identified an extensive area of linear and pit-like anomalies and potential building remains, allowing trenching to target areas of highest archaeological potential.

Trial trenching has demonstrated that the site was of considerable local and regional importance, with archaeological deposits and/or artefacts dating from the Mesolithic through to the Romano-British period. Survival of the archaeological deposits was generally good, with possible prehistoric ground surfaces and buried soils of Romano-British date being identified. Post-depositional damage was also limited, as the site yielded large quantities of fresh, unabraded material, although some post-depositional disturbance had been caused by frequent animal burrowing (largely rabbits) and root disturbance. Waterlogged deposits have been shown to survive on the site, although these were restricted to deep, and/or water containing features (Trenches 3 and 14).

For the prehistoric period, the presence of considerable quantities of worked flint suggest that the site was perhaps seasonally exploited from the Early Mesolithic, and the potential ritual pit furthers the spiritual significance of this area of the Witham Valley, as already attested by a possible Neolithic long barrow and Bronze Age barrow cemeteries in the vicinity of the site.

In the Roman period, the concentration of activity was in Trenches 4-7, and the earliest pottery from the site suggests that some form of exploitation of the landscape was taking place here during the military occupation of Lincoln. Subsequent activity seems to have been focussed on a series of relatively short-lived structures, including a well appointed civilian residence and an associated primary butchery site, established in the later 1st century AD and carefully dismantled in the mid 2nd century AD.

9.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) would like to thank Jacobs Babbie for this commission. Thanks are also due to the landowner Mr. J. Ward and his staff for their cooperation and interest in the project. The author would also like to express thanks to the field staff, Dave Bower, Aleksandra Cetera, Mike Daly, Linda Hamilton, Isabelle Kendal, Susie Matthewson, Mary-Ann Nichols and Kath Stone.

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11.0 Site archive

The documentary 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 2004.251.

APPENDIX 1: Colour plates



Pl. 1: General view of the development area, looking west from the east end of the site



Pl. 2: Trench 1 after cleaning, looking north-west



Pl. 3: Trench 2 after cleaning, looking north-east



Pl. 4: Trench 3 showing slot dug through pond [308], looking south-south-east



Pl. 5: Trench 6 after cleaning, looking north-west.



Pl. 6: Section through ditch [607] at the south side of Trench 6. Looking south



Pl. 7: Wall (705), Trench 7, looking west along the Trench.



Pl. 8: Wall (707), Trench 7, looking east.



Pl. 9: Wall (709), Trench 7, looking north



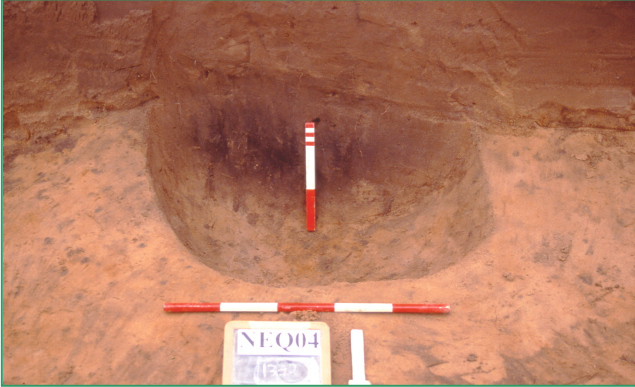
Pl. 10: Gullies [715] and [717], which run parallel to wall 707 and may form a property boundary around the building. Trench 7, looking north



Pl. 11: Trench 13 after cleaning. Looking east



Pl. 12: West end of Trench 13, showing slots excavated through ditches [1311], [1313], [1315] and [1318]. Looking west



Pl. 13: Fully excavated Neolithic pit 1332, Trench 13, looking south



Pl. 14: Slot through possible palaeochannel deposits in Trench 14, looking south-west



Pl. 15: Grave cut [1604] cut into the fill of pit [1602]. Trench 16, looking west-north-west



Pl. 16: Possible lime-burning pit [1702]. Note the reddened natural around the edge of the feature signifying burning. Trench 17, looking north-west

APPENDIX 2: Small finds report

Metallic Small Finds Report**Site Code: NEQ04**

Adam Daubney

Dolphin Brooch /6\ (403)

One copper alloy brooch was recovered from the site, which came from fill (403) of ditch [402]. The brooch is a sprung dolphin brooch, missing its spring and pin, and with moulded vertical ribbing on the bow and wings. The distribution for sprung dolphin brooches covers the south and the midlands, but tapers out in the north of England. The find from NEQ04 fits in comfortably with this distribution, to which hundreds more from other early Roman sites in Lincolnshire can also be added. The absence of dolphin brooches from the Sheepen site, Colchester, suggests that sprung dolphin brooches were current in the late Neronian or Flavian period.

Dolphin Brooch /6\ (403). Copper alloy dolphin brooch. The wings are semi-circular in section to house a spring, which is now missing. The wings are decorated with moulded vertical ribs. The bow is comma shaped and is also decorated with two pronounced vertically moulded ribs. Catchplate intact, pin missing. L:34mm, W:20mm

Tweezers /8\ (605)

A pair of tweezers was recovered from context 605. The pair is broken into three separate fragments. The tweezers are much worn and are heavily degraded; the only decoration comes in the form of an incised linear perimeter. No clear picture of any development that may have taken place in the design of tweezers can be seen. They were used throughout the Roman period and thus specific dating must come from associated material from within context 605.

Tweezers /8\ (605). Copper alloy tweezers, now in three fragments. The tweezers are decorated by an incised linear perimeter. The terminals of the arms face slightly inwards. L:49mm, W:5mm

Spatula /2\ (714)

A copper alloy spatula was recovered from context 714, a sandy deposit against/around demolished/abandoned structures. The spatula is a dual-purpose folding medical instrument with a leaf shaped blade on one end, and bifurcated at the other to hold an iron scalpel blade, now missing. The iron corrosion around the bifurcated end is all that remains of the scalpel. The iron or steel blade would have provided the sharp cutting edge while the leaf-shaped blade was used for blunt dissection as well as the functions of a spatula. It is very similar to one found at Colchester (Crummy, 1983, 63, no. 1948) dated to between AD 50-150, Exeter (Holbrook, 1991, p258, no.113) and another published by Milne (Milne 1970). The presence of a medical instrument in a context associated with a building does not necessarily imply the building's function as medical. The lack of other medical or cosmetic implements such as probes, blades and ear-scoops from the site would also make the existence of a practice unlikely. There are however certain other identifiable structures in which medical treatment, in its broadest sense, is known to have taken place, such as at healing temples, spas and baths. Medical instruments have been found at a number of baths, implying that both medical and surgical treatment sometimes took place in these areas (Jackson, 1990, p11).

Spatula /2\ (714). Copper alloy spatula with a thick rectangular sectioned handle. The terminal of the handle is bifurcated and surrounded with ferrous corrosion products. The handle tapers until it meets the spatula head. The head is leaf shaped, roughly lozenge shaped in section, and has well worn blunted edges. L:87mm, W:12mm, T:7mm.

Nails

Six iron nails were recovered from the site. All have a square sectioned tapering stem with a rounded or rectangular head, and fall into Mannings' Type 1B (Manning, 1985, p134). Nails are by far the most common metallic find on roman sites although very little can be further said about them.

Nail /3\ (508). Iron nail with square sectioned shaft and rounded head. There is a slight swelling around the collar. The head has been bent over at a right angle. L:69mm, W:14mm

Nail /4\ (508). Iron nail with square sectioned shaft and rounded head. L:28mm, W:14mm

Nail /7\ (408). Iron nail with square sectioned shaft and rounded head. L:48mm, W:14mm

Nail /9\ (610). Iron nail with square sectioned shaft and rounded head. L:52mm, W:14mm

Nail (505). Iron nail with square sectioned shaft and rounded head. The nail is bent at a right angle. L:26mm, W:13mm

Nail (1006). Iron nail with square sectioned shaft and rounded head. L:49mm, W:15mm

Drill Bit /10\ (600)

A probable iron drill bit was found in context 600. The bit has a long shaft with a pyramidal tapering head. Unfortunately the tip of the instrument is broken, which makes a specific object assignment difficult. In shape and size, it is very similar to Mannings' type 1 or 2 Pointed Drill Bits (Manning, 1985, p26). A less likely identification would be it being an awl. In either case, it is not an unusual, if although somewhat rare type of find on a roman site. The rareness of this type of find is due to the general poor rate of survival of ferrous artefacts rather than the extent of its usage. It is not possible to narrow the date down within the roman period based on its typology, although the objects illustrated in Manning date in general to the mid-first century.

Drill Bit /10\ (600). Probable iron drill bit, or possible awl. The shaft is circular in section and tapers to a broken point. The head is rectangular in section and also tapers to a broken point. L:141mm, W:10mm, B:6mm

Lead fragment /1\ (710)

A single piece of lead was found, which is somewhat unusual considering the generally high quantities usually recovered from roman sites. The piece warranted no further comment.

Lead fragment /1\ (710). Irregular piece of lead with one possible knife cut mark on its reverse. The reverse is generally smoother than its face. L:64mm, W:35mm, T:11mm

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Find No.	Context No.	Material	Description	Date
1	720	Lead	Sheet fragment	Roman
2	714	Cu alloy	Spatula	AD50 ~ 150
3	508	Iron	Nail	Roman
4	508	Iron	Nail Head	Roman
	505	Iron	Nail	Roman
6	403	Cu alloy	Dolphin Brooch	AD43 ~ 100
7	408	Iron	Nail, Square headed & sectioned	Roman
8	615	Cu alloy	Tweezers	Roman
9	610	Iron	Nail	Roman
10	600	Iron	Drill Bit	c. Mid 1 st century
	1006	Iron	Nail	Roman

APPENDIX 3: Lithic materials report

**Allenby Road Industrial Estate Roads, Lincoln
NEQ 04****Lithic Materials: Catalogue and Assessment**

Report by Jim Rylatt – November, 2004

1.0 Introduction

This report relates to an assemblage of lithic material that was recovered during an evaluation of land that is situated to the south of Greetwell Road, immediately to the east of Lincoln. A total of 106 pieces of struck or modified flint were retrieved, which weighed a total of 397.7 grams. This assemblage comprised four cores, four core fragments, one backed blade and four other microliths, one extended end scraper, one end & side scraper, one utilised blade, four retouched flakes, thirty-four unmodified flakes, nineteen unmodified blades, nine unmodified blade-like flakes and, twenty-four chunks and chips. Additionally, a fragment of a potboiler was also retrieved (along with a second possible piece).

2.0 Description**2.1 Raw material**

All of the lithic artefacts examined were produced from flint. Where cortical surfaces survived it was possible to establish that the raw materials were derived from secondary deposits. The majority of the cores, primary flakes, secondary flakes and other large pieces of irregular waste ('chunks') have areas of thin, abraded cortex. Any relatively large areas of this surface generally had a rounded profile, which indicates that it was sourced from pebbles and cobbles that had been transported and deposited by water. This process limits the size of the constituent nodules, and can also account for the variation in the colour and composition of the components of the assemblage.

The collection of flint from secondary deposits is likely to have been a relatively expedient process. This may simply have involved the inspection of tree throws, or cut back sections of the banks of rivers and streams (Edmonds, 1995). Alternatively, the creation of slight delves in the upper surface of out-cropping gravel deposits may have proved to be a more reliable means of acquisition. There are only small and relatively insubstantial gravel beds within the immediate vicinity of this relatively constricted section of the Witham valley, so the source, or sources of procurement of this raw material is unclear (I.G.S., 1973). Some of the closest larger gravel deposits are associated with the River Till, 4.5km to the west, the Upper Witham 7km to the south-west and the River Trent 16km to the west. Additionally, sections of the Witham further downstream are associated with extensive and abundant gravel beds, particularly in the area to the south-east of Kirkstead where the River Bain joins the Witham (c.22km to the south-east of the road corridor) (B.G.S., 1995).

2.2 Condition

The majority of the assemblage is in a good state of preservation, with fresh flake margins reflecting their original state at the time of manufacture and deposition. The assemblage contained 26 pieces (24.5%) that exhibited traits indicative of post-depositional damage associated with ploughing or other taphonomic processes that cause the bulk movement of sediment. Interestingly, of the 20 pieces (18.9% of the assemblage) recovered from the ploughsoil, only six were broken or chipped. This could indicate that a significant proportion of the material in the active plough zone has only recently been extracted from underlying stratified deposits.

A large proportion of the flint recovered had wholly (43 pieces) or partly (31) recorticated/patinated flake surfaces (69.8% of the assemblage). Comparison of the datable traits and the degree of patination indicates that this post-depositional modification does not correlate with the differences in age between discrete elements of the assemblage. It is more likely to result from localised variations in the soil chemistry and possibly even the original depositional environment¹.

A proportion of the assemblage had been burnt (16.9%, with a further 5.7% having been thermally altered by fire or frost). This had resulted in a change in the structure of the flint, and in many cases, had resulted in shattering of the piece or a loss of definition to the flake margins and scars. In most cases the flint had been burnt after it had been knapped. It is not possible to determine whether this was an economic process associated with the utilisation of lithic waste for some other purpose, or a form of cleansing associated with the cessation of discrete episodes of activity. However, the fact that flint was being burnt indicates that a number of fires or hearths must have been created within the evaluated area during the prehistoric period.

2.3 Characteristics of the assemblage

2.3.1 Cores

This assemblage contained four complete cores (3.8%), three of which exhibited traits consistent with Mesolithic to Early Neolithic technologies. The most diagnostic pieces were two type B1 blade cores, (500 a) and (1407a), the example from Trench 14 having traits that are indicative of Late Mesolithic microlithic blade production. A third type B1 core (415 a) was created from a tabular pebble. It had been utilised for the production of few blades, but was discarded before it was worked to exhaustion. Three core fragments (2.8%) also exhibited evidence of blade production; (113 a) was part of a type A2 blade core, while (600 a) and (1344 a) had produced both flakes and blades. The presence of these blade cores and core fragments indicates that parts of the site were utilised for episodes of core reduction during the Mesolithic and into the Early Neolithic.

Also recovered was a single unpatterned multiple platform core, type Cb (720 a) (0.9%). This piece had been utilised for the production of relatively small, broad flakes and crushing along one edge suggested that it had been worked on an anvil. The morphological characteristics of this piece conform to patterns observed in Late Neolithic and Early Bronze Age lithic industries. A core fragment from another type Cb core, of probable Bronze Age, was found in Trench 13 (1333 a).

2.3.2 Flakes

There were 62 unmodified flakes (58.5% of the total assemblage), of which there were 18 secondary and 43 tertiary removals. Examination of the scars on the dorsal surfaces of the flakes indicates two distinct patterns of working. A large proportion can be classified as blades (17.9%), blade-like flakes (8.5%), or are the bi-product of 'narrow flake' reduction technologies (5.7%). These artefacts exhibit signs of having been removed from prepared cores, with single, or opposed platforms. Many of the

¹ It is possible that these changes reflect the fact that the soils at the valley edges contain large quantities of limestone, and thus the ground water will have contained liberated calcium carbonate. In contrast, the wetter areas of the valley floor may have inhibited the formation of a patina due to the presence of organic acids.

blade-like flakes and some of the more irregular waste are trimming flakes associated with the preparation and maintenance of a platform edge.

Many of the blades and narrow flakes have very small flat platforms, indicating that percussion was directed toward the platform edge. The bulbs of percussion on these flakes are generally either diffuse, or small and pronounced. The diffuse examples are indicative of soft hammer percussion (e.g. antler), while the small bulbs are a product of indirect percussion (Lord, 1993). The later technique was favoured for blade production as it was an accurate means of placing and directing force. This level of control is also reflected in the high incidence of feathered terminations within this element of the assemblage. Where hinge or step fractures do occur, they are frequently associated with the smaller flakes created during the maintenance of the platform edge.

A relatively small proportion of the unmodified flakes can be positively identified as the products of the multiple-platform working characteristic of Later Neolithic and Bronze Age industries (6.6% of the assemblage). This was a less formalised system of working, the cores having a relatively random patterning of the relationships between the platforms, and the flakes are often squat and relatively thick in comparison to blades. These flakes also have a greater tendency toward more pronounced bulbs, reflecting the greater use of hard hammer percussion.

There were 19 cortical blades and flakes (17.9%) in this element of the assemblage. The incidence of cortical pieces reflects the nature of the raw materials, as waterborne cobbles and pebbles have a relatively high surface area in comparison to mined flint. The cores and the cortical flakes indicate that core reduction constituted a significant element of the flint working that was undertaken in this area of the Witham valley.

The proportion of complete cores to unmodified flakes is 1: 15.5.

2.3.3 Retouched flakes, tools and modified flint

The collection contained 7 pieces that had been transformed into tools (6.6%) and 5 flakes or blades that had been modified with minimal retouch or by use-wear (4.7%). The group of tools included five microliths of Later Mesolithic date; there was an elongated trapeze (404 a), a small backed blade (404 h), a scalene triangle (500 d), and modified blades of microlith proportions (500 c) (500 f). There were also two scrapers, an extended end scraper (u/s a) probably of Neolithic date, and a horseshoe scraper (600 f) of Late Neolithic to Early Bronze Age date. Additionally, one of the retouched flakes (712 a) may represent a fragment of a fabricator. The presence of these items indicates that tool manufacture and use was also undertaken in the study area, but the low density of utilised objects does not provide any indication of sustained occupation within the immediate vicinity of the evaluation trenches.

3.0 Discussion and conclusions

It is evident that this small lithic assemblage represents residues from a palimpsest of activity that took place over thousands of years. The diagnostic artefacts suggest that activity along the margins of the Witham valley began in the earlier Mesolithic. The majority of the dateable pieces suggest that the late Mesolithic and early Neolithic saw more frequent or intense activity. It is highly likely that these late hunter-gatherer and early farming communities had a high degree of mobility, and this suggests that the worked lithic material results from sporadic or seasonal visits during which people inhabited temporary camps. The presence of burnt lithic material implies that some of these camps lay within the study area.

A smaller proportion of the lithic material is a product of late Neolithic and early Bronze Age activity. This period saw the construction and maintenance of round barrow cemeteries on both sides of this section of the river. The presence of these monuments indicates that this area was considered to be important and must have been visited, but the relatively low quantities of contemporary lithic material suggests that camps, settlements or major activity zones had shifted away from the margins of the valley, possibly as a result of ongoing woodland clearance.

The majority of the assemblage has not come from primary contexts, 18.9% coming from the modern ploughsoil, while much of the remainder was found to have been redeposited within the fills of later features (49.1%). This level of disturbance means that dates provided by the lithic material should be treated as provisional unless they can be verified by other classes of artefact or data.

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NEQ 04

Catalogue of worked and modified lithic materials:

Key to abbreviations:

Type	(P) (S) (T)	primary secondary tertiary
Date	E.Mes Mes L.Mes E.Neo Neo L.Neo EBA BA	Early Mesolithic Mesolithic Late Mesolithic Early Neolithic Neolithic Late Neolithic Early Bronze Age Bronze Age
Size	comp incomp.	complete – (if so, dimensions given*) incomplete
Recort	(recorticated)	yes partly
Burnt	poss	yes possible
Retouch	poss u/w	yes possible use-wear
Platf	(platform) abrad comp cort crush	abraded complex cortical crushed
Bulb	diff. pron sm.pr v.sm.pr	diffuse pronounced small pronounced very small pronounced
Term	(termination) feath hinge step plunging	feathered hinged stepped
P-dep damage	(post-depositional damage) poss	yes possible no

Comments	b-l	blade-like
	dep	depositional
	dist	distal
	frag	fragment
	irreg	irregular
	lat	lateral
	platf	platform
	poss	possible/possibly
	post-dep	post-depositional
	prep	preparation
	prob	probable
	prox	proximal
	v	very

*Measurements are given only for complete flakes. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
113 (a)	core frag (S)	L.Mes/E.Neo	16.3	31x31	partly	poss		cort	pron	feath		thick flake removing part of type A2 blade core to create new flat platf at 90 degrees to original platf; thin, rounded & abraded cortex; hairline fractures throughout piece - poss burning or frost damage; brownish-grey translucent flint
113 (b)	retouched flake (T)	Mes/Neo	5.2	no	partly		yes				yes	prox frag of thick flake; bulb/platf deliberately removed; prob deliberately truncated along 1 lat edge, semi-abrupt invasive retouch along other lat edge - creates denticulate edge; dorsal scars suggest from blade core; poss broken in use; caramel-grey opaque flint
403 (a)	flake (T)	Neo/BA	1	14x22	partly			flat	pron	feath	no	squat flake detached by hard hammer, scar of similar flake removal on dorsal surface; pale grey opaque Wolds flint with chalky inclusions
403 (b)	flake (T)		0.7	18x14				flat	sm.pr	hinge	no	small irreg flake; brownish-grey translucent flint, with white & grey opaque inclusions
403 (c)	chunk (S)		3.2	no	partly						no	flake surfaces on all sides; 10% thin, abraded cortex
403 (d)	chunk (S)		1.8	no	yes	yes					yes	heavily burnt chunk with granular structure; thin, abraded cortex
404 (a)	microlith (T)	Mes	0.6	40x9	partly		yes				no	elongated trapeze' - narrow crested blade with right side dist end obliquely blunted; right side of prox end also retouched, but slightly crescentic creating tang at prox end (platf detached); retouched by removal of small abrupt spalls; prob L.Mes, but at smaller end of range for E.Mes (c.f. Star Carr, Clark 1954 fig 35)
404 (b)	blade-like flake (S)	L.Mes/E.Neo	2.1	41x13				flat	diffuse	plunging	no	irreg b-l flake, poss from type A blade core; thin, rounded & abraded cortex (60%); greyish-brown translucent flint
404 (c)	blade-like flake (S)	L.Mes/E.Neo	1.5	32x11	partly			flat	diffuse	feath	no	irreg b-l flake, poss from type A blade core; platf edge prep; thin abraded cortex (50%)
404 (d)	blade (T)	L.Mes	1.1	no	yes					step	yes	narrow blade, prob from type A blade core; prox end detached by post-dep damage
404 (e)	flake (S)	Neo	4.6	30x20	partly			flat	pron	feath	no	flake detached by hard hammer, dorsal scars

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												indicate removal of similar parallel-sided flakes from single platf; thin, rounded & abraded cortex (30%); brownish-grey translucent flint
404 (f)	flake (T)		0.8	16x12	yes			comp	sm.pr	feath	no	small flake with faceted butt, latter could part of abruptly retouched edge tool or core rejuvenation flake from small blade core
404 (g)	blade-like flake (T)	L.Mes/E.Neo	0.5	19x9	partly			flat	diffuse	hinge	no	small b-l flake from blade core; platf edge prep; brownish-grey translucent flint
404 (h)	backed blade L.Mes		0.6	17x9	yes		yes				no	microlith - narrow blade with tips of prox & dist ends detached; 1 lat edge abruptly retouched by removal of small spalls
404 (i)	blade-like flake (T)	L.Mes/E.Neo	0.4	16x9	yes			abraded	diffuse	hinge	no	small b-l flake from blade core
404 (j)	flake (S)	L.Mes/E.Neo	1.1	no	yes					feath	yes	irreg dist frag of flake or blade, prob from small type A blade core; post dep fracture; thin, rounded & abraded cortex; brownish-grey translucent flint
404 (k)	flake (T)		0.8	17x13				abraded	diffuse	feath	no	small irreg flake with some platf edge prep; greyish-brown translucent flint
404 (l)	flake (S)		1.1	19x13	partly			flat	diffuse	feath	no	small flake; platf edge prep; thin abraded cortex (15%)
404 (m)	blade (S)	L.Mes/E.Neo	0.5	no	yes					feath		dist end of small crested blade, deliberately truncated; thin abraded cortex (25%)
404 (n)	chunk		1.6	no	partly						no	small frag preserving part of platf edge from core prob producing v small blades - L.Mes?
404 (o)	blade (T)	L.Mes/E.Neo	<0.1	no		yes					no	prox frag of small blade with platf detached; calcined & pot-lids detached
404 (p)	chunk		0.7	no							no	small frag - scars on 2 sides suggest part of apex of type B microlithic blade core; thin abraded cortex (10%)
404 (q)	chip (T)	L.Mes/E.Neo	<0.1	no		yes						medial frag of small blade; calcined & pot-lids detached
404 (r)	chip (T)		<0.1	no	yes						no	prob hinged termination of truncated flake or blade
404 (s)	chunk (S)		1.9	no		yes						calcined chunk with rounded facets on most of flake

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												surfaces (i.e. burnt after knapping), but fresh fracture exposing granular structure on 1 side; thin abraded cortex (25%)
415 (a)	core (S)	L.Mes/E.Neo	46.7	51x40	partly						no	type B1 core - tabular flint pebble truncated at two ends to create opposed platfs; blades (7+) removed from 1 edge; thin abraded cortex (80%)
415 (b)	blade (S)	E.Neo	4.3	no		yes	poss	crush	diffuse			prox frag large blade truncated in antiquity; burnt with granular structure; poss retouch to 1 lat edge, but could be post-dep damage; thin, rounded & abraded cortex (65%)
415 (c)	flake (T)		1.2	19x24				flat	diffuse	hinge	no	squat flake; pale grey opaque Wolds flint with chalky inclusions
415 (d)	blade (S)	L.Mes	0.7	no	partly					feath	no	dist end of narrow blade truncated in antiquity; thin abraded cortex (45%); greyish-brown translucent flint
415 (e)	blade-like flake (T)	L.Mes	<0.1	no	yes	yes				feath	no	dist end small b-l flake; truncated prior to burning, with pot-lids detached
415 (f)	flake (T)		<0.1	no	partly			flat	v.sm.pr		no	prox & medial frag of v small flake or blade, truncated in antiquity
415 (g)	flake (T)		<0.1	8x7	partly			flat	diffuse	hinge	no	v small flake; poss platf edge prep or manufacture of tool edge; brownish-grey translucent flint
415 (h)	flake (P)		<0.1	no		yes		comp	v.sm.pr		no	prox frag small cortical flake, broken & burnt in antiquity; platf is neg bulb of previous flake removal - poss thinning flake from manufacture of edge of bifacial tool?
415 (i)	chunk (S)		1.9	no	yes	poss					no	flake surfaces survive, 1 having poss pot-lids detached; recorticated natural fracture (15%)
415 (j)	chip (T)		0.6	no		yes						heavily burnt flake frag, with granular structure and pot lids detached
415 (k)	chip (T)		<0.1	no	partly						no	small frag of thin blade or flake
415 (l)	chip (T)		<0.1	no	yes						no	medial frag of blade or flake truncated in antiquity
500 (a)	core (S)	L.Mes/E.Neo	30.6	40x35	yes						no	type B1 blade core - predominantly utilised as type A2, but final removals were a few blades from base;

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												produced small & medium-sized blades (15+), a number with hinged or stepped terminations; thin, rounded & abraded cortex
500 (b)	retouched flake (S)	L.Neo/BA	10.5	35x31			yes	flat	pron	hinge		irreg flake detached with hard hammer - scars of similar removals on dorsal surface; small spalls have been detached to abruptly retouch 14mm length of distal end of 1 lat edge, other lat edge prob deliberately truncated to blunt edge; v. thin abraded cortex; greyish-brown translucent flint, with white & grey opaque inclusions
500 (c)	microlith	L.Mes	<0.1	17x5			yes			feath	no	narrow-blade geometric microlith created from dist end of truncated small blade; 1 lat edge abruptly retouched; greyish-brown translucent flint
500 (d)	microlith	L.Mes	<0.1	5x11	yes		yes	crush	diffuse	feath	no	scalene triangle - v. small, squat flake, comparable to platf edge trimming flake, but 1 lat edge has acute retouch from removal of small spalls
500 (e)	blade (T)	L.Mes	<0.1	no	yes					feath	yes	dist end of v. small narrow blade of microlithic proportions; truncated by post dep fracture
500 (f)	microlith?	L.Mes	<0.1	16x3					diffuse	feath		v. small rod-like blade of microlithic proportions; no retouch, but 1 lat edge is abrupt & other acute, so poss use as microlith?; brownish-grey semi-translucent flint
505	flake (T)		1.8	17x18				crush	diffuse	hinge	no	small, squat irreg flake; brownish-grey translucent flint
508	chunk (S)		4.5	no	yes	poss					no	chunk from recorticated pebble; several flake surfaces; one surface very irreg/pockmarked - indicative of change in structure, but not clear if heated or frost damage
600 (a)	core frag (T)		26.3	no	partly	poss					yes	large core frag, some flake surfaces survive & suggest flake & blade, but unclear due to v. sign post-dep damage; some surfaces irreg & pockmarked suggesting thermal alterations, but unclear whether heated or frost; greyish-brown translucent flint
600 (b)	blade-like flake (T)	L.Mes/E.Neo	0.6	20x11	yes			abraded	v.sm.pr	step	no	small b-l flake from blade core; prob step termination, although poss that tip of flake has been truncated; platf edge prep; greyish-brown

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												translucent flint
600 (c)	flake (T)		2.6	30x16	partly			flat	sm.pr	feath	no	irreg flake removing irreg ridge formed at junction of two faces of core; poss Neo?; pale grey opaque Wolds flint
600 (d)	blade (S)	E.Mes/E.Neo	9.1	no	yes					feath	no	large blade with platf/bulb detached, prob deliberately; 15% thin, rounded & abraded cortex
600 (e)	blade (T)	L.Mes/E.Neo	4.1	no			poss u/w			feath	yes	distal end of relatively thick blade, prob truncated in antiquity; poss u/w along 1 lat edge, but also post-dep damage to flake margins, so uncertain; dark brownish-grey semi-translucent flint
600 (f)	end & side scraper (S)	L.Neo/EBA	13.6	32x31	yes		yes	flat	diffuse		no	horseshoe scraper' on thick flake with abrupt retouch along dist end & semi-abrupt retouch up 1 lat edge; some of retouch facets worn; 20% thin, abraded cortex
600 (g)	blade (S)	L.Mes/E.Neo	0.7	no	yes			abraded	diffuse		no	prox frag of small blade or b-l flake, poss deliberately truncated; 50% thin, rounded & abraded cortex
600 (h)	flake (T)		0.9	no	partly	poss				hinge		dist end of flake; thermally altered flake, unclear whether heat or frost
600 (i)	flake (T)		0.6	15x15	yes			comp	pron	feath	no	small irreg bending flake, poss platf edge prep or tool edge manufacture
620 (a)	flake (S)	L.Mes/E.Neo	1.5	17x18				crush	v.sm.pr	feath	no	small irreg flake, prob platf edge prep removal; controlled flaking indicative of blade core; brownish-grey semi-translucent flint
620 (b)	flake (T)		<0.1	no				flat	v.sm.pr	feath		frag of v. small flake broken laterally; platf edge prep or manufacture of edge of tool; brownish-grey translucent flint
700 (a)	flake (T)	Neo/EBA	4.4	33x24	yes			flat	pron	feath	yes	slightly irreg flake detached by hard hammer, with scars of similar removals on dorsal surface; recorticated, but prob pale grey Wolds flint, with chalky inclusions
700 (b)	utilised blade (S)	Mes/E.Neo	0.9	no			u/w					blade with platf and tip of dist end detached, prob deliberately; largely cortical flake (85%) - cortex v. thin rounded & abraded - three scars of small blade/edge prep removals (type A1 core) adjacent to

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												platf; a flake scar extends along prox half of 1 lat edge, this area having use-wear or minimal irreg retouch on its ventral surface; brown translucent flint
700 (c)	blade-like flake (T)	L.Mes/E.Neo	0.6	no	yes			abraded	v.sm.pr		yes	small b-l flake; evidence of platf edge prep, including abrasion; tip detached by post-dep damage; brownish-grey translucent flint
700 (d)	chip (T)		0.6	no	yes	poss					yes	medial frag of blade or flake truncated on three sides by post-dep damage; patinated surface covered with hairline fractures suggesting thermally altered piece, but not clear whether heated or frost
700 (e)	flake (T)		<0.1	9x5	yes			flat	v.sm.pr	hinge	no	v. small flake, which was detached with punch, prob during platf edge prep
704 (a)	flake (S)	L.Mes/E.Neo	<0.1	14x14				flat	sm.pr			small flake prob from blade core; poss that small area of dist end detached?; ; <5% cortex - thin & abraded; brownish-grey translucent flint
704 (b)	flake (T)		0.7	18x8	yes			comp	diffuse	hinge	no	small, slightly irreg rod-like flake
704 (c)	blade (T)	L.Mes/E.Neo	<0.1	no	yes					feath		dist end of blade, poss from type A core
708	retouched flake (T)		7	no		yes	yes				yes	prox frag of thick flake; bulb/plaf detached; semi-abrupt invasive retouch along 1 lat edge - poss side scraper? retouch should be more abrupt for knife; prob broken in use and subsequently burnt - granular structure; signif damage to flake margins; brownish-grey flint
712 (a)	retouched flake (S)		6.8	no			yes					distal frag of thick & prob irreg flake; semi-abrupt invasive flaking along dorsal face of 1 lat edge and ventral face of other, with short sections of worked edge enhanced by removal of abrupt spalls; poss part of a fabricator (if so, Mes-EBA); 15% thin abraded cortex; greyish brown translucent flint
712 (b)	flake (T)	Neo/BA	10.5	32x44	yes			flat		feath		relatively large irreg flake; relatively pron negative bulbs on dorsal face suggests detached by hard hammer, but fault on ventral face makes this uncertain; small area of recorticated surface may indicate reuse of earlier core?
712 (c)	flake (T)	Mes/E.Neo	2.1	20x18	partly			crush	sm.pr	feath	yes	irreg flake from blade core - type B or C, poss detached for core rejuve/maintenance, as has

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												removed spur at junction of two faces of core; evidence of platf edge prep; slight post-dep damage; opaque grey flint (poss Wolds)
720 (a)	core	L.Neo/BA	20.7	34x34	yes						no	large frag = majority of type Cb core producing small flakes; small pronounced bulb indicates indirect percussion (punch) was used to detach it from remainder of core; working fairly irreg; crushing at base poss suggests use of anvil; area of thin abraded cortex
720 (b)	chunk (T)		3.2	no								flake surfaces on all sides - poss dist end of relatively thick flake?; pale grey Wolds flint
1304 (a)	blade (T)	L.Mes	0.8	33x6				abraded	diffuse	step	yes	narrow rod-like blade, poss from type B3 core flake; platf edge prep; slight post-dep damage to margins; brown translucent flint
1304 (b)	blade (T)	L.Mes/E.Neo	0.7	no	yes					feath	yes	dist frag of blade from type B1 core; post dep fracture; brownish-grey translucent flint
1305	chunk (T)		1.8	no								irreg chunk with flake surfaces on all sides - resembles apex of core, but no platf/bulb indicating deliberate removal; caramel-grey opaque flint
1309	flake (T)		2.3	no		yes					yes	medial frag of heavily burnt flake, with granular structure & well-rounded flake scars - i.e. burnt after flake created; truncation due to post-dep damage
1330 (a)	flake (T)	L.Neo/BA	4.4	25x24	partly			flat	diffuse	step	no	relatively thick, irreg flake, which was prob detached with punch; pale grey opaque Wolds flint with chalky inclusions
1330 (b)	blade (S)	L.Mes	<0.1	no	yes					feath		dist end of narrow blade; 85% of dorsal surface cortical - thin, rounded & abraded cortex
1330 (c)	flake (S)		1.7	no	yes			comp	sm.pr		yes	prox frag of flake truncated by a post-dep break; 35% thin abraded cortex; greyish-brown translucent flint
1330 (d)	chunk (S)		1.9	no	yes						yes	small chunk with variations in level of patina suggesting that it was detached from reutilised core; 15% thin abraded cortex
1333 (a)	core frag (S)	BA	17.2	no							no	chunk of a multi-platf flake core (6+ platfs); part of 1 platf edge survives, with small pronounced neg bulb; large area of thin, rounded & abraded cortex (40%);

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												greyish-brown semi-translucent flint
1333 (b)	blade (T)	L.Mes/E.Neo	1.5	no	yes			flat			no	prox frag relatively large blade, deliberately truncated; signif platf edge prep & poss abrasion
1333 (c)	blade (S)	L.Mes/E.Neo	1.4	no	yes					feath	yes	medial & dist frag of blade, poss from type A core; post-dep break; thin abraded cortex (20%)
1333 (d)	blade (S)	L.Mes/E.Neo	0.5	no	yes	yes					yes	prox frag small blade; thin abraded cortex (60%); heavily burnt & granular, with post-dep fracture
1333 (e)	blade (S)	L.Mes	0.5	no	partly	yes					yes	medial frag of small, narrow blade; heavily burnt & granular, with post-dep fracture 1 end; thin abraded cortex (45%)
1333 (f)	chunk (S)		1.4	no		yes					no	flake frag; heavily burnt with granular structure; thin abraded cortex (30%)
1333 (g)	chip (T)		<0.1	no	yes	yes					no	small frag of blade or flake; calcined with pot-lids detached
1333 (h)	chip (T)		<0.1	no	yes	yes					no	small frag of blade or flake; calcined with pot-lids detached
1344 (a)	core frag (S)	Mes/Neo	13.3	no	yes						no	frag of type C core, producing flakes and poss blades; area of recorticated platf survives & suggest mix of hard and soft hammer flaking; thin abraded cortex (<5%)
1344 (b)	flake (S)	L.Mes	3.7	30x18	partly			flat	sm.pr	step	no	slightly irreg flake detached from type a pebble core - thin, rounded & abraded cortex; scars on dorsal surface indicate removal of small, narrow blades; greyish-brown flint with opaque brown inclusions
1344 (c)	flake (T)		3.8	32x25	partly			comp	pron	feath	no	flake with relatively pron bulb & wide platf, latter a faceted butt preserving earlier platf edge - poss medium-sized thinning flake from bifacial tool manufacture; poss Neo?; pale grey Wolds flint with chalky inclusions
1344 (d)	blade-like flake (T)	L.Mes/E.Neo	2.6	35x14	partly			flat	diffuse	feath	no	b-l flake poss from type A core; prob Wolds flint
1344 (e)	flake (T)	L.Neo/EBA	4	34x26				cort	pron	hinge	no	slightly irreg flake from type B or C core; dorsal surface indicates similar flake removals; thin, rounded & abraded cortex; brownish-grey

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
												translucent flint
1344 (f)	blade (T)	L.Mes/E.Neo	3.2	no	partly		poss u/w			feath		medial & dist frag of relatively broad blade, deliberately truncated; possible u/w (chipping) along acute lat edge; pale grey Wolds flint with chalky inclusions
1344 (g)	blade (T)	L.Mes/E.Neo	0.6	no	partly		poss u/w	abraded	diffuse		yes	prox & medial frag of small blade; possible u/w (chipping) along 1 lat edge; tip detached by post-dep damage; greyish-brown translucent flint
1344 (h)	flake (T)		3.7	22x21	partly	yes		comp	diffuse	hinge		thick irreg flake; granular structure with pot-lids detached
1344 (i)	chip (T)		0.5	no		yes					no	small frag of blade or flake; granular structure with pot-lids detached
1344 (j)	chip (T)		<0.1	no		yes					yes	v small frag of blade or flake; detached from larger piece after burning
1406 (a)	blade-like flake (T)	L.Mes/E.Neo	0.7	24x12	yes			flat	sm.pr	hinge	yes	small b-l flake removed from blade core (prob type B); slight post-dep damage to margins
1406 (b)	flake (T)		1	no	yes			comp	pron		yes	prox frag of flake with faceted butt; poss L.Mes/E.Neo?; post dep fracture to dist end & lat edges
1407 (a)	core (S)	L.Mes/E.Neo	26.4	33x31	partly		poss				no	small type B1 core - primarily utilised for production of small, narrow blades (8+), but 3+ flakes also detached (two to create opposed platfs); thin, rounded & abraded cortex (<10%)
1407 (b)	flake (T)	E.Mes/E.Neo	7.9	48x22	partly		poss u/w	flat	diffuse	feath		broad blade, from core producing similar blades, poss type A; poss u/w (chipping) along acute lat edge, but could be post-dep damage; coarse-grained caramel-brown opaque flint
1407 (c)	chunk (S)		6.7	no	partly						no	chunk prob detached during core prep - some flake surfaces survive; thin, abraded cortex (35%); coarse-grained caramel-brown opaque flint - poss same nodule as 1407 (b)?
1407 (d)	flake (T)		1	no	yes					feath	yes	dist end of blade or flake; post-dep fracture, which is beginning to recorticate (i.e. broken in antiquity, but after initial deposition)

C'text no.	Type	Date	Weight (g)	Size (mm)	Recort	Burnt	Retouch	Platf	Bulb	Term	P-dep damage	Comments
1407 (e)	chip (T)		0.4	no	yes							frag prob from small b-l flake - prob L.Mes/E.Neo; detached from larger piece after burning
1407 (f)	chip (T)		<0.1	no	yes							small frag with surviving flake surfaces
u/s (a)	extended end scraper (T)	Neo	12	41x36			yes	flat	pron		yes	thick flake produced by hard hammer, scars of similar flake removals on dorsal surface; semi-abrupt invasive retouch along distal end & half way up 1 lat edge, with worked edge enhanced by removal of abrupt spalls; scraper relatively narrow at tip; pale grey opaque Wolds flint with chalky inclusions
u/s (b)	flake (T)	L.Neo/BA	1.7	18x25	partly			cort.	pron	hinge		squat irreg flake detached by hard hammer

Summary

No. of finds	Type	Date	Weight (g)	Size (mm)	Recort.	Burnt	Retouch	Platf	Bulb	Term	P-dep damage
106	backed blade 1 microlith 4 utilised blade 1 extended end scraper 1 end & side scraper 1 retouched flake 4 flake (P) 1 flake (S) 7 flake (T) 26 blade (S) 9 blade (T) 10 blade-like flake (S) 2 blade-like flake (T) 7 core 4 core frag 4 chunk/chip 24	E.Mes/E.Neo 2 Mes 1 Mes/E.Neo 2 Mes/Neo 2 L.Mes 12 L.Mes/E.Neo 27 E.Neo 1 Neo 1 Neo/BA 2 Neo/EBA 1 L.Neo/BA 4 L.Neo/EBA 2 BA 1	397.7g	yes 46 no 60	yes 43 partly 31	yes 18 poss 6	yes 10 poss 2 u/w 1 poss u/w 4	flat 25 comp 8 cort 3 crush 5 abrad 7	diff 21 v.sm.pr 7 sm.pr 8 pron 11	feath 33 hinge 14 step 5 plunging 1	yes 26 no 56

Modified Lithic Materials

C'text no.	Type	Weight (g)	Comments
404	poss pot boiler frag	320.4	irreg frag of limestone with reddish discolouration on one side - latter poss due to burning, but more likely to result from presence of iron-rich minerals
1407	pot boiler frag	86.3	frag of white sandstone pebble/cobble with well-sorted quartz grains up to 0.5mm across; shattered with angular fractures and crazed external surface

APPENDIX 4: Prehistoric pottery report

**Allenby Road Industrial Estate Roads, Lincoln
NEQ04 – TF 00231 71379**

Report on Prehistoric Pottery

By Carol Allen

1 Introduction

1.1 A small assemblage of prehistoric pottery was found in a number of features on this site. This is predominantly Neolithic pottery of Peterborough type found in trench 13. Two small joining sherds of undecorated Bronze Age pottery were found in trench 14.

2 Quantification and Methodology

2.1 **Quantification:** A total of 16 sherds of prehistoric pottery weighing 158 g was found on this site, as shown in Table 1 below.

Table 1: Neolithic and Bronze Age Pottery from trenches 13 and 14

<i>Context</i>	<i>Sherds and weight</i>	<i>Pottery type</i>	<i>Description</i>
<i>Trench 13</i> 1331, fill of pit 1332, & u/s, pot 1	9 sherds, 88 g	Mortlake pot with whipped cord decoration on exterior and incised decoration inside rim, whipped cord on rim	Rim and body sherds, not complete, wall 8mm thick, exterior very abraded, interior slightly abraded, fabric SHMV
<i>Trench 13</i> 1331, fill of pit 1332, & u/s pot 2	5 sherds, 68 g	Mortlake pot with whipped cord decoration on exterior, whipped cord on rim	Rim and body sherds, not complete, wall 9mm thick, interior very abraded, exterior slightly abraded, fabric SHMV
<i>Trench 14</i> 1408, fill of linear feature 1409, pot 3	2 sherds, 2g	Probably Bronze Age sherds, thin wall and no decoration	Two joining body sherds, 6mm thick, undecorated, unabraded, fabric SHMV

2.2 **Methodology:** The pottery was recorded and analysed according to the guidelines of the PCRG (1997). The fabrics were examined with a x4 microscope in fresh breaks. The abrasion levels indicated are unabraded, slightly abraded (5 to 25% of original surface worn), and very abraded (original surface completely worn).

3 Fabrics

3.1 One main type of tempering is apparent in all three vessels, SHMV. A number of elongated and angular voids are apparent in pots 1 and 2, indicating the former presence of shell, and the shell is clearly apparent in pot 3. A moderate amount (10-19%) of very coarse (over 3 mm average size) shell or voids (SH) are seen in the sherds. The sherds are generally irregularly fired and mid to dark brown in colour.

3.2 The site lies on sandy alluvial drift with underlying geology comprising the Great Oolite and Upper Estuarine Beds, or clays with limestone (Swinnerton and Kent 1976). The Great Oolite is composed of abundant fossil shell of various species (*ibid*, 48), and the Estuarine Beds also contain fossil marine shell which has been quarried away in the past just to the north of this site. These Beds were still visible at Heighington to the south in recent times (*ibid*). It seems very likely that the inclusions in these pots is of fairly local origin, but it would be necessary to examine the sherds by thin section analysis to be certain that the included shell is fossil in origin. Shell is commonly found in Neolithic pottery in this region (Allen and Hopkins 2000, fig.8) but shell of marine origin has been found in Neolithic pottery in other regions (Clea 1995, 190).

4 Form, Decoration and Comparative Pottery

4.1 The two vessels from pit 1332 (pots 1 and 2) are characteristic of the Mortlake style of Peterborough Ware of the middle to later Neolithic seen on other sites in Lincolnshire, and elsewhere, particularly in southern Britain (Smith 1965, fig. 33).

4.2 Rim and body sherds of pots 1 and 2 were found but the vessels are far from complete. The exterior surface of pot 1 (Fig. 1.1) is very abraded but retains vague impressions of whipped cord decoration. The interior of the neck of the vessel is only slightly abraded and has unusual incised v-shaped decoration in three rows. The t-shaped flat rim, typical of the form of this type of vessel, is also decorated with diagonal rows of fine whipped cord, and the neck is concave. The second vessel, pot 2 (Fig. 1.2), is of similar form, with a flat rim and a few neck and body sherds remaining. The sherds have very fine whipped cord on the slightly abraded exterior. The interior of this pot is very abraded with the surface completely removed.

4.3 A Mortlake vessel of similar shape but with twisted cord decoration was found at Ash Hill Long barrow, Swinhope, in Lincolnshire (Phillips and Thomas 1987, fig.10). In addition, a Mortlake pot with very similar whipped cord decoration in chevron pattern on the exterior was found within a pit at Risby Warren, Lincs (Riley 1957, fig.3.4). A carinated sherd of Neolithic pottery with whipped cord impressed decoration very similar to pot 2 was found at Billingborough, Lincs (Chowne *et al* 2001, Fig. 20.1), and several Mortlake vessels, some with similar decoration, have been found at Kirkby on Bain, Lincs (Allen 2001). A sherd of Neolithic pottery of Mortlake type from Normanby Park in north Lincolnshire also shows incised decoration on the interior of the neck in a similar pattern to that seen on pot 1 this site. The two pots found on this site therefore appear to fit well into the regional types of this pottery found in Lincolnshire.

4.4 Two small joining sherds with a wall thickness of only 6 mm (pot 3) were also found on this site in trench 14 (context 1408) within a linear feature. From the colour and fabric the could be Bronze Age but are undecorated and their exact type if unclear.

5 Context

5.1 The two Mortlake pots found on this site came from the fill (1331) of a pit (1332). Neolithic pits tend to be bowl shaped, as was pit 1332 on this site, and usually of small dimensions, particularly in depth (Thomas 1999, 64). Pit 1332 was about 0.7 m across

and only 0.36 m deep. These are much smaller than pits of Bronze Age or Iron Age date, and of a different shape. Often there are few layers in Neolithic pits indicating that these were promptly backfilled rather than being allowed to silt up (*ibid*, fig. 4.2), and pit 1332 had a single fill. Also these pits often contained burnt material, worked and broken lithics, and human or animal bone. Pit 1331 contained all these alongside the Mortlake pottery.

5.2 The two small joining sherds are of Bronze Age date and were found in the fill (1408) of a linear feature (1409). These are unabraded and are likely to have originated nearby, but their exact nature is unclear.

6 Discussion and Dating

6.1 The digging of pits and the careful selection of material for special deposition within them is seen as an action which conveyed an important meaning to people of the Neolithic period. The meaning went beyond the assemblage itself and made the location of particular significance (Thomas 1999, 72). If transformation of society into a more settled community identifying with its own place and area in the landscape actually took place in the 2nd millennium BC (Barrett 1994, 147; Allen and Hopkins 2000, 312), it is apparent that these pits marked a special place in the lives of the community of the mid-Neolithic.

6.2 Middle Neolithic impressed wares of Peterborough type were probably a stylistic development from earlier Neolithic bowls (Gibson and Kinnes 1997). Radiocarbon dates have confirmed that Peterborough Wares were in use between about 3400 and 2500 cal BC (*ibid*, 67), and beyond (Thomas 1999, 109). There is some evidence for typological development of the styles, Ebbsfleet, followed by Mortlake and Fengate (Smith 1965), but this is not supported at present by scientific dating or associated artefacts, and it seems possible that all the types could have been contemporaneous, although different types could have had alternative uses (Thomas 1999, 109-110). There may be regional variations within this dating although this is not clear at present, but indications are that Peterborough Wares of Mortlake type were current in Lincolnshire in the later 4th and the 3rd millennium BC.

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APPENDIX 5: Romano-British pottery report

Allenby Road Industrial Estate Roads, Lincoln, NEQ04**for PRE-CONSTRUCT ARCHAEOLOGY****by Margaret J. Darling, M.Phil., F.S.A., M.I.F.A.****29 October 2004**

The pottery amounted to 519 sherds, weighing 12.140kg from 44 deposits. The pottery is in fairly average condition, but with some notably fresh sherds, although some fairly fragmented and abraded sherds occurred. The average sherd weight overall is 23.4g sherd, but if exceptionally large and/or heavy sherds are excluded, the general pottery average weight is 19.3g sherd. 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*. The archive record (below Appendix 3, and available on disk) will be curated for future study. The archive codes are in Appendix 2.

INTRODUCTION

The pottery is spread over 13 trenches, most coming from Trenches 4-7, shown in Table 1. The pottery quantities, dating, comments on condition and joining sherd links are detailed in Appendix 1.

Table 1 Summary of deposits

Trench	Sherds	Weight	g/sh	Dating
1	3	146	48.7	EM2
4	81	2299	28.4	1-2C
5	66	1004	15.2	1-2C
6	187	4140	22.1	2C
7	143	4064	28.4	1-2C
9	5	67	13.4	>4C
10	10	106	10.6	1-2C
11	1	8	8.0	ROM
12	7	85	12.1	>M3
13	11	183	16.6	1-2C
14	1	11	11.0	1-2C
15	1	7	7.0	EM2
16	3	20	6.7	2C
Total	519	12140	23.4	

Pottery from the topsoil in trenches 5 and 6 contained a few sherds datable to the 3rd century, but the bulk of the sherds were of earlier date. The single Nene Valley colour-coated (NVCC) sherd giving a 4th century date for trench 9 also comes from the topsoil, the only other sherds dating to the 1st to 2nd century. The other NVCC sherds of 3rd century dating occur as two tiny abraded body sherds, possibly intrusive, in linear feature 414, and a chip unstratified in trench 12 (from

1228). Thus the bulk of the pottery can be dated to the 1st and 2nd century, with sherds later than the mid 2nd century occurring either in unstratified deposits, or as possible intrusions. There was a single post-Medieval sherd from ditch 410, presumed to be intrusive.

Sherd links were observed in trench 4 between the ditch 410 and pit 406; also between the topsoil in Trench 5 and the linear feature 510. Sherds from a local mortarium with potter's stamps (no 2) occurred in the topsoil groups from Trenches 6 and 7.

OVERVIEW OF FABRICS AND VESSEL FORMS

The fabrics are detailed on Table 2 below.

Fabric	Code	Sherds	%	Weight	%
Amphora Camulodunum 186	C186	2	0.39	472	3.89
Amphora Dressel 20	DR20	3	0.58	370	3.05
Amphorae?	AMPH?	2	0.39	51	0.42
Black-Burnished I	BB1	2	0.39	15	0.12
Black-burnished I?	BB1?	2	0.39	24	0.2
Coarse	COAR	2	0.39	47	0.39
Cream	CR	41	7.9	649	5.35
Early Lincoln grey	LEG	3	0.58	19	0.16
Early Lincoln Pink	PINK	4	0.77	57	0.47
Fired clay	FCLAY	8	1.54	88	0.72
Grey fairly fine	GRFF	3	0.58	247	2.03
Grey fine	GFIN	1	0.19	3	0.02
Grey quartz-gritted	GREY	273	52.60	4263	35.12
Grey with some shell	GRSH	7	1.35	1122	9.24
Grog-tempered	GROG	9	1.73	208	1.71
IA tradition gritty	IAGR	36	6.94	974	8.02
Mortaria local	MOLO	4	0.77	273	2.25
Nene Valley colour-coated ware	NVCC	5	0.96	50	0.41
Oxidized light	OXL	1	0.19	4	0.03
Oxidized quartz-gritted	OX	19	3.66	138	1.14
Post-Roman	PRO	1	0.19	1	0.01
Samian South Gaulish	SAMSG	12	2.31	1296	10.67
Shell-gritted	SHEL	3	0.58	37	0.3
Shell-gritted common coarse	SHCC	10	1.93	230	1.89
Shell-gritted common fine	SHCF	12	2.31	84	0.69
Shell-gritted common medium	SHCM	28	5.39	727	5.99
Shell-gritted sparse fine	SHSF	1	0.19	14	0.12
Shell-gritted sparse medium	SHSM	8	1.54	270	2.22
Tile CBM	TILE	6	1.16	161	1.33
Vesicular	VESIC	11	2.12	246	2.03
Total		519	100	12140	100

The percentages of individual fabrics are best assessed on the sherd count figures due to the heavy amphorae and mortaria sherds, quite apart from the unusual occurrence of a nearly complete South Gaulish samian dish, no 1, in trench 4, ditch 402.

Imports include samian from South Gaul (**SAMSG**), including a rare cup of Ritterling 9 form (from ditch 407), normally considered to occur in the pre-Flavian period (up to *c.* AD70), and three large fresh sherds comprising a nearly complete unworn dish of form 36 (no 1, from ditch 402), datable to the Flavian period. The dish is unstamped, and occurred with only eight other sherds, the only illustrated being the jar no 12. Other samian sherds came from gully 1005, pit 1009, ditches 503 and 721 and topsoil 600, and include forms 18 and 18/31 and sherds from a closed form. The amphorae include a rim from a Dressel 20 olive oil container from Baetica in Southern Spain in the earlier fabric (**DR20**, no 3 from topsoil trench 6), and a Camulodunum 186 also from Spain, a container for fish products (**C186** from ditch 721). All the Dressel 20 sherds are in the earlier type of fabric and the rim type is in the range normally dated to the late 1st to early 2nd century (Peacock & Williams 1986, fig 66, 26). The Camulodunum 186 (whether of 186A or 186C type) range from the late 1st century B.C. to the early 2nd century A.D. (Peacock & Williams 1986, 120-23).

Pottery from elsewhere in Britain is confined to **BB1** probably from Dorset, an early cooking pot no 4 from topsoil 600, a bowl or dish with flat-rim from ditch 607 and linear feature 613). There is also a fragment of cooking pot rim from the topsoil in Trench 6 which might date as late as the 3rd century. The cooking pot no 4 has an unusual stubby rim, more typical of the original Durotrigan types (Brailsford 1958), and is likely to be early 2nd century. Apart from the samian, fine wares are confined to five Nene Valley colour-coated (**NVCC**) sherds. These include two abraded body sherds in light red-brown fabric with rouletting and painted blobs (from linear feature 414, perhaps intrusive) are likely to date to the later 3rd or 4th centuries, a chip which might be NVCC (from ditch 503), and definitely later vessels in Nene Valley colour-coated ware, a rouletted beaker sherd unstratified in trench 12, and a bead-and-flange bowl from the topsoil in Trench 9. The sole fine grey sherd (**GFIN**) is a carinated thin-walled sherd, possibly from a bowl or beaker (from ditch 607). Decoration formed by comb-stamping is usually on tablewares or beakers, but the solitary body sherd with this decoration is in an unusual grey fabric, no 15 (from ditch 607). The motif is a lozenge of comb-stamps, more normal on 'London ware' than Parisian vessels (made in the Nene Valley, Perrin 1980, fig 5, no 12, 14; Elsdon 1982, fig 12, no 108, a 'London ware' bowl; Tyers 1996, 150-1). This type of decoration is current from the Flavian period to the mid 2nd century.

The only mortaria are sherds from what appears to be a single mortarium (no 2, from topsoil in Trenches 6 and 7) in a micaceous local fabric (**MOLO**), with two impressions of the same potter's stamp. The type of hook-rim with a low internal bead would fit a late 1st to early 2nd century date. The stamp has been identified by Mrs K.F. Hartley as one of the dies used by the potter Q. IVSTIVS CRESCENS, the complete stamp reading Q IVS CRES (with the RE ligatured). She considers this mortarium to lie in the period *c.* AD90-110/120. Report below.

Some of the earliest sherds may occur amongst the shell-gritted wares, some of which appear to be hand-made. However, shell-gritted cooking vessels are common in the legionary fortress at Lincoln, both hand-made and wheel-thrown, and the type of fabric continues into the 2nd century (Darling 1984, fig 14; 1988, fig 7). There are no sherds which can be positively dated to the Iron Age date, but some could be current in the late Iron Age, continuing into the Roman period. The vessels include a beaker no 38 (from a construction cut for a wall 733), two native type cooking pots no 40 (from topsoil trench 13), and no 41 from ditch 721, a small everted-rim jar, probably coil-made, no 39, found as fresh sherds in ditch 721, similar to an example associated with Iron Age pottery in Lincoln (Darling 1988, fig 7, no 45), an everted-rim bowl no 42, and a storage jar or very large bowl no 43 (from pit 406). Also common in the early deposits in Lincoln are cooking vessels in the gritty fabric **IAGR**, following the local Iron Age types, here three bowls, no 33 from topsoil Trench 2, no 32 from ditch 721, no 31 from topsoil Trench 13, and a lid, a rare

find in this fabric type, no 34 from topsoil, Trench 7. There is also an everted-rim jar, no 30, from topsoil Trench 5, possibly more 2nd century in date. Of similar dating and character are the few sherds in grog-tempered wares (**GROG**), including a native type bowl from topsoil Trench 6, a jar no 36 from ditch 705, an everted-rim bowl no 37 from topsoil trench 6, and a narrow-necked jar no 35 from the linear feature 414. The jar no 35 is less certainly grog-tempered as the inclusions could also be clay pellets. Grog-tempering is rare in Lincoln. A notable vessel is a lug-handled jar, no 7 from ditch 721 in a grey fabric with occasional shell inclusions (**GRSH**), which is close to the type made at the Roxby kilns in North Lincolnshire (Rigby & Stead 1976, 143, fig 67, 38).

Two fabrics occur which are known from legionary deposits in Lincoln, the early grey fabric (**LEG**), and pinkish flagon-type fabric (**PINK**). Only body sherds of LEG fabric were found, all from closed vessels, from trench 4 and 5. A footring almost certainly from a flagon in PINK came from ditch 721, and body sherds probably also from flagons from Trenches 4 and 5. Virtually all the cream (**CR**) sherds are from flagons or probable flagons, except for a bowl no 5 from ditch 721 which, although not reeded, is of the reeded-rim bowl type. This type is unusually rare in Lincoln compared to other military sites of the same period, probably due to the differing arrangements made by the IX Hispana legion for their pottery supplies. The dating of these bowls is confined to the 1st century and early part of the 2nd century, disappearing in the 120s. Oxidized vessels are comparatively rare, but include a small jar, no 6 from a linear feature 1202.

The commonest fabric as usual is grey (**GREY**) quartz-gritted ware. A feature of the grey vessels is the occurrence of two types derived from Gallo-Belgic wares, the carinated bowl or jar B334 and the dish D452 (nos 16-17, and 22-3). Both these types are likely to appear in the area from the Flavian period onwards, but become relatively common in Lincoln and area in the 2nd century. They are, therefore, difficult to date closely, but are more likely to date before the mid 2nd century. There are at least six other examples of the bowl type B334. Both these types are made at Roxby, types E and H (Rigby & Stead 1976, fig 66, 29; 67, 40-41), and the same bowl rim type occurs at Dragonby (Gregory & Swan 1996, fig 20.34, no 1472). A similar carinated bowl or jar is no 18, which can be closely paralleled in the early pottery at Old Winteringham (Rigby & Stead 1976, fig 75, no 31).

Alongside these, there are examples of native type cooking bowls in coarser grey fabrics (nos 27-29), and a lid-seated jar, no 9, of similar dating, the jar being an unusually small example of one of the commonest Roxby kiln types (Rigby & Stead 1976, fig 65, nos 1-6). The date of the other jars is less easy to confine, but these types with thin walls are unlikely to occur after *c.* AD 150 (nos 10-14). The jar no 10 is an unusual globular type and has a split near the rim, suggesting it may be a 'second'. A number of sherds from closed vessels are decorated with wide-spaced rouletting, also a feature of 1st to earlier 2nd century jars. Dark grey body sherds from ditch 410 and pit 406 with fine close rouletting are possibly from a narrow-necked jar, of similar early date. Scored zig-zag or herring-bone decoration occurs on a sherd from a jar (pit 711), a type of motif common at Roxby (Rigby & Stead 1976, fig 65). Notable in such a relatively small collection is the appearance of three lids, usually rare vessels, although more common in the 1st and early 2nd century (nos 24-26). Bowls divide into those drawing on BB1 types, and earlier vessels, the BB derived vessels confined a fragment from ditch 607 and no 20 from topsoil Trench 6, while no 19 is an earlier type (Trench 6 topsoil). An enigmatic find is a very small footring in a fairly coarse grey fabric, no 21 from the topsoil Trench 6, the vessel form being unknown. The narrow-necked jar no 8, almost certainly a 2nd century vessel, completes the illustrated vessels (ditch 721). Unillustrated sherds include a possible ten rusticated jars, one in a light oxidized fabric (**OXL**), mostly with linear rustication although at least two examples have earlier fairly high nodular decoration. The use of rustication is common in the Lincoln area in the later 1st century, and continues until the mid 2nd century (as in the North Hykeham kiln, Thompson 1958, and at

Roxby, Rigby & Stead 1976). Two examples of wide-mouthed bowls occur as fragmentary rims, one from the top soil in Trench 5 which is probably mid 3rd century, and a fragment from ditch 607 (cxt 618), the latter perhaps intrusive as there are no other sherds as late from the ditch, although this might be a 2nd century type (as at Roxby, Rigby & Stead 1976, fig 66, no 36).

DISCUSSION

The pottery occurred in the following deposits:

Table 3

Trench	Deposit	Sherds	Weight	Dating	g/sherd
7	Construction walls	20	210	2c	10.5
4-16	Ditches	239	5778	>EM2	24.2
6;10	Gullies	14	202	1-2c	14.4
4-15	Linear features	55	666	>EM2	12.1
1-11	Pits	40	1066	>EM2	26.7
16	Grave	2	13	2c	6.5
4-16	Upper layers	149	4205	>4c	28.2
	Total	519	12140		

The largest quantity came from the ditches, mainly ditches 607 and 721, 607 being very fragmented, while the pottery from 721 is fresher but includes two large sherds of Camulodunum 186 amphora and a large part of a lug-handled jar (no 7), and the high average sherd weight from the pits is largely due to a single native bowl (no 27) from pit 138. The highest average sherd weight comes from the upper layers, but these include a Dressel 20 amphora rim, the mortarium, and some large sherds from native bowls.

The construction cuts for the structure in Trench 7 (732-3) contained fairly scrappy sherds in their fills, with little dating evidence, but a *terminus post quem* of early to mid 2nd century can be suggested. The fill of the grave 1604 produced only two grey sherds, one a fragmentary rim of a possible beaker, for which a 2nd century date is probable, although later date cannot be excluded on such minimal evidence. The bulk of the stratified pottery comes from the various ditches, mostly from Trenches 4-7, and it is here particularly that the early pottery is most evident, including fabrics specifically associated with the legionary period in Lincoln. BB1 vessels of post-Hadrianic date occur solely in Trench 6 (topsoil, ditch 607 and linear feature 613), and local copies of BB1 vessels are rare, also only from Trench 6, dating to mid 2nd century at the latest.

The notable features of the pottery assemblage can be summarised: that most sherds are unlikely to date after the mid 2nd century, and includes fabrics and vessels known from deposits in the legionary fortress in Lincoln, alongside South Gaulish samian, including a rare pre-Flavian cup of form Ritterling 9, early amphorae, Dressel 20 and Camulodunum 186 extending in date to the early 2nd century. The 2nd century vessels share many types in common with the Roxby kiln in North Lincolnshire, and some of the pottery from the Dragonby kilns of Trajanic-Hadrianic date (Rigby & Stead 1976, 136-9; Gregory 1996; Gregory & Swan 1996, fig 20.34). Also notable is the diversity of fabrics represented in the native type vessels, from coarse quartz-gritted grey, to IAGR, GROG and shell-gritted fabrics. The possibility of late Iron Age activity in the area cannot be excluded.

MORTARIUM STAMP.**Mrs K.F. Hartley, F.S.A**

2 Diameter 340mm. Fabric: Cream to light-brown micaceous fabric, with fairly common red iron ore, scatter of earthy white inclusions, and sparse sub-rounded pinkish quartz. Well worn, with no trituration grit surviving. Two non-joining rim fragments, one with a complete impression, the other with just the first letter; the letter on the complete impression give QIVSCR, the final letter R retrograde and only partially impressed on the edge of the rim. No impressions show the end clearly, but other dies demonstrate it reads CRES. Two potters, Q Iustus Cres[cens] and Q Iustus Cico certainly worked in the same pottery, probably at the same date, and are likely to have been freedmen of the same patron. The fabric of all mortaria stamped with this die and their distribution indicates production at Lincoln. There is evidence from Newton-on-Trent to show Q Iustus Crescens also had an earlier workshop there, although only associated with certain dies (Field and Palmer-Brown 1991, fig 17, nos 24, 26). Distribution: Catterick Bypass (site K433); Catterick Racecourse (Site 273); Aldborough, Yorks; Castleford; Doncaster (3); Leicester; Old Winteringham (2); Ribchester (3); Templeborough; Lincoln (2); Winterton; Newton-on-Trent.

The optimum date for these potters is AD 90-110/20.

Unstratified, topsoil, Trenches 6 and 7.

CATALOGUE

Site details included as deposit with cut, context, and original drawing no.

	Fabric	Details	Deposit	Cxt	D#
1	SAMSG	Dish form 36. Nearly complete; unworn. Unstamped.	Ditch N-S 402	403	03
2	MOLO	Mortarium. Cream-light brown micaceous fabric with fairly common red iron ore, scatter white and pinkish quartz. Well worn, no surviving trituration. Stamped by Q. Iustus Crescens, report above.	Topsoil	600;700	21
3	DR20	Dressel 20 amphora. Type as Peacock and Williams 1986, fig 66, no 26; late 1st-early 2nd century.	Topsoil	600	09
4	BB1	Cooking pot, early type.	Topsoil	600	11
5	CR	Flat-rim bowl, grooved outer edge. Burnt.	Ditch NW-SE 721	719	30
6	OX	Jar everted rim. Dark grey fabric, common quartz, dark brown surfaces.	Linear N-S 1202	1203	39
7	GRSH	Lug-handled jar. Grey sandy fabric with occasional shell and grey grog, brown surfaces; scored wavy line. Fresh sherds.	Ditch NW-SE 721	719	29
8	GREY	Jar narrow-neck. Light grey.	Ditch NW-SE 721	719	34
9	GREY	Lid-seated small jar. Grey-brown sandy fabric, dark grey surfaces.	Ditch NNE-SSW 607	610	40
10	GREY	Globular small jar. Grey sandwich fabric, dark grey surfaces. Split below neck, firing fault.	Ditch N-S 715	716	27
11	GREY	Jar. Brown fabric with grey core and surfaces. Possible burnished line decoration.	Linear N-S 414	415	05
12	GREY	Jar. Dark grey core, grey surfaces.	Ditch N-S 402	403	02
13	GREY	Jar curved-rim. Light grey, burnished shoulder and interior rim.	Gully N-S 604	603	20
14	GREY	Jar. Light red-brown fabric, grey surfaces. Possibly burnt on rim.	Ditch NW-SE 721	719	31
15	GREY	Closed form. Grey fabric with common crushed ?shell. Partial comb-stamped lozenge motif. Abraded.	Ditch NNE-SSW 607	618	45
16	GREY	Carinated bowl or jar. Light grey sandwich fabric; burnished.	Gully N-S 604	603	19
17	GREY	Carinated bowl or jar. Dark grey core and surfaces, fairly fine fabric.	Topsoil	600	10
18	GREY	Carinated bowl. Red-brown fabric, dark grey surfaces.	Linear WNW - ESE 510	508;500	08
19	GREY	Flat-rim bowl or dish, grooved above carination.	Topsoil	600	15

20	GREY	Flat-rim bowl of BB type; traces pointed arc decoration.	Topsoil	600	41
21	GREY	Coarse dark grey footring with thick base; uncertain form.	Topsoil	600	18
22	GREY	Dish. Dark grey fabric with light cortex; embedded ?chalk/shell inclusion.	Ditch NW-SE 721	719	32
23	GREY	Dish. Similar fabric without ?shell inclusions.	Topsoil	600	12
24	GREY	Lid with square-cut rim, light grey. Burnt.	Ditch NNE-SSW 607	610	22
25	GREY	Lid. Grey fabric with partially discoloured surfaces; burnished decoration.	Topsoil	600	14
26	GREY	Lid. Light grey. Bifid-rim.	Topsoil	600	13
27	GREY	Bowl. Coarse grey fabric, light cortex, dark surfaces; occasional ?grog.	Pit 138	139	01
28	GREY	Bowl. Similar fabric to No 27.	Topsoil	600	16
29	GREY	Bowl. Similar fabric to No 27. Light grey fabric, darker surfaces.	Topsoil	700	25
30	IAGR	Jar. Hard red-brown fabric, dark grey pimply surfaces. Occasional chalky inclusions.	Topsoil	500	07
31	IAGR	Bowl. Hard grey fabric, darker pimply surfaces.	Topsoil	1300	42
32	IAGR	Bowl. Similar hard fabric as No 31.	Ditch NW-SE 721	719	33
33	IAGR	Bowl. Similar pimply fabric as No 31.	Topsoil	600	17
34	IAGR	Lid. Similar dark grey fabric and surfaces, red-brown cortex. Sooting on underside.	Topsoil	700	24
35	GROG?	Jar narrow-neck. Fairly coarse dark grey fabric, red-brown surfaces. Cream-brown inclusions of grog or clay pellets.	Linear N-S 414	415	06
36	GROG	Jar. Light grey fabric, grey-brown surfaces. Occasional flint and grey ?grog.	Ditch N-S 715	716	28
37	GROG	Bowl. Red-brown fabric, grey surfaces, grey grog inclusions.	Topsoil	600	43
38	SHCF	Beaker or small jar. Dark grey with common small to medium shell. Smooth exterior. Possibly hand-made.	Const. cut E-W wall 733	709	26
39	SHSM	Small jar. Dark grey fabric with sparse small-medium shell. Probably coil-made.	Ditch NW-SE 721	720	35
40	SHCM	Cooking pot. Dark grey fabric; vesicular. Wheel-made?	Topsoil	1300	38
41	SHSM	Cooking pot. Hard grey fabric, darker surfaces. Sparse medium shell. Wheel-made.	Ditch NW-SE 721	720	37
42	SHCM	Bowl. Grey fabric, dark surfaces. Vesicular. Probably common medium shell. Wheel-made.	Ditch WNW-ESE 410	404	44
43	SHCC	Storage jar or bowl. Hard grey fabric, brown surfaces, common shell to coarse side. Possibly hand-made. Burnt. Interior surface lost.	Pit 406	405	04

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.

AMPH	Amphorae, unidentified. Two very abraded body sherds only, one possibly from a large flagon of local origin.
BB1	Black-Burnished ware category 1, NRFRC: DOR BB1 (Dorset); ROS BB1 (Rossington Bridge). Closely copied by Lincoln potters.
C186	Amphorae, of Camulodunum type 186, Peacock & Williams 1986 Class 17, from Cadiz, Southern Spain. Contents, fish-based products. NRFRC: CAD AM .
CR	Cream, miscellaneous cream wares. Sherds attributed to a fabric group rather than a discrete fabric, usually from flagons or closed forms as here, but a single bowl of the early reeded rim type occurs in ditch 721, no 5.
COAR	Coarse tempered fabrics, usually in a Iron Age pottery tradition, often poorly mixed clay as single grey sherd from ditch 607.

DR20	Amphorae Dressel 20 amphorae. Peacock & Williams 1986 Class 25, from Baetica, Southern Spain. Contents, olive oil. NRFC: Baetican (Early) Amphorae 1 BATAM1.
FCLAY	Fragments of fired clay, sometimes daub.
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. Single body sherd from a carinated vessel, possibly a bowl or beaker, from ditch 607.
GREY	Grey, undifferentiated quartz-gritted grey fabrics, hard wares with sparse to common quartz inclusions.
GRFF	Grey, fairly fine fabric. This code covers fabrics intermediate between the common grey wares with sparse to common quartz and fine grey wares (GFIN), which itself is coarser than the very fine fabrics used for Parisian and 'London' wares. Usually used for finer vessels for the table, particularly beakers. Single moulded base from a closed form, plough soil.
GROG	Grog-tempered. Miscellaneous unsourced grog-tempered fabrics, fabric group. All sherds are grey, with mostly grey grog, occasional flint. Include a native type bowl, no 37, topsoil, a jar no 36 from ditch 715, and a narrow-necked jar no 35 from linear feature 414.
GRSH	Grey quartz-gritted with some sparse shell inclusions, wheel-made. Only a lug-handled jar no 7 from ditch 721. Sandy fabric with occasional shell and grey grog, brown surfaces.
IAGR	Coarse tempered, often pimply with grog and other inclusions, IA tradition fabric, which continues in use into the Roman period. Also known as Trent Valley ware. Includes mostly wheel-thrown vessels but some hand-made sherds. Mostly native tradition bowls, nos 31 and 33 from topsoil 1300 and 600, no 32 from ditch 721, but also everted rim jars, no 30 from topsoil 500, also from ditch 721. Continues into the early 2nd century.
LEG	Early very pale grey fairly fine fabric, often fairly common mica content, usually with darker exterior surfaces on closed forms. Known from deposits of the legionary period in the fortress at Lincoln (Darling 1984, 52 fabric 3; 1999, 85). Only body sherds from closed vessels, from ditches 402 and 410, topsoil 500.
MOLO	Mortaria of local source. Micaceous cream-light brown fabric with fairly common iron ore, a scatter of white inclusions and pinkish quartz; no trituration grit survives.
NVCC	Nene Valley colour-coat NRFC: LNVCC.
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. Many sherds are very scrappy and abraded, but closed forms, including a jar no 6, a probable beaker, and rusticated jar occur.
OXL	Oxidized lighter red-brown. Single sherd from a jar with linear rustication.
PINK	Pink fabrics, usually for closed forms, probably a variant, softer and usually more micaceous, CR fabric. Known from deposits of the legionary period in the fortress at Lincoln (Darling 1984, 52 fabric 2; 1999, 85). All body sherds, closed vessels, probably flagons, from linear feature 414, ditches 503 and 721.
PRO	Post-Roman sherds. Single small sherd of blue and white china from ditch 410.
SAMSG	Samian South Gaulish, from La Graufesenque. NRFC: LGF SA
SHEL	Shell-gritted, miscellaneous shell-gritted ware, not certainly of local origin.
SHCC	Shell-gritted, common coarse shell inclusions.
SHCF	Shell-gritted, common fine shell inclusions.
SHCM	Shell-gritted, common medium shell inclusions.

SHSF	Shell-gritted, sparse fine shell inclusions.
SHSM	Shell-gritted, sparse medium shell inclusions.
TILE	Tile fragments, usually building material.
VESIC	Vesicular, vesicular sherds, probably due to loss of shell-gritting.

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APPENDIX a
SUMMARY OF POTTERY BY TRENCH AND DEPOSIT

Trench	Cut	Deposit	Cxt	Sherds	Weight	Date	Comments
1	119	Pit	118	2	13	ROM	
1	138	Pit	139	1	133	EM2?	
4	-	Topsoil	400	1	16	1-2C	
4	402	Ditch N-S	403	11	1301	L1E2?	Nr comp. Fresh SG 36 dish;some ABR
4	410	Ditch WNW-ESE	404	20	242	L1-2?	Same in 405;some ABR;?intrusive Post-Med sh.
4	406	Pit	405	12	291	1-2C?	Same in 404
4	407	Ditch N-S	408	15	237	1-2C?	Pre-flav samian;some ABR
4	414	Linear feature N-S	415	22	212	L1E2?	Some ABR; ?intrusive NVCC
5	-	Topsoil	500	23	434	ML3?	Mostly 2c pot;same in 508;some ABR
5	503	Ditch WNW-ESE	504	24	129	2C?	Chip CC ?L2+;some ABR
5	506	Ditch N-S	505	5	171	2C?	
5	510	Linear WNW-ESE	508	14	270	L1-2	Same in 500;some ABR
6	-	Topsoil	600	106	3274	2-?3C	Most 2c;mort stmp;?3c BB1;Dr.20 rim
6	604	Gully N-S	603	10	140	E2+	
6	604	Gully N-S	606	1	27	2C	
6	607	Ditch NNE-SSW	610	51	489	EM2?	Scrappy;some ABR
6	613	Linear WNW-ESE	614	12	94	ROM	Scrappy bss only
6	607	Ditch NNE-ESE	618	2	26	3C?	Intrusive?
6	607	Ditch NNE-ESE	619	0	0	NO	Iron ore frags? 9g
							DATE
6	-	Poss. buried soil	620	5	90	2C?	
7	-	Topsoil	700	4	190	E2?	Mort stamp
7	732	Constr.cut N-S wall	708	5	47	2C	
7	733	Constr.cut E-W wall	709	15	163	2C	Scrappy;some ABR;poss>M2
7	711	Pit	712	3	57	2C	
7	715	Ditch N-S	716	12	194	2C	
7	721	Ditch NW-SE	719	25	1421	EM2	Some ABR;lge pt jar fresh
7	721	Ditch NW-SE	720	50	1275	L1E2?	Some ABR;2 lge C186 amph shs
7	724	Ditch N-S	725	6	75	1-2C	ABR;scrappy

7 726	Ditch NNW- SSE	727	8	137 L1E2?	
7 739	Pit	740	15	505 L1E2?	Some ABR
9 -	Topsoil	900	1	43 4C	ABR
9 903	Ditch irregular E-W	904	4	24 L1-2?	ABR
10 -	Topsoil	100	1	12 ROM	ABR
		0			
10 100	Gully E-W	100	3	35 1-2C?	
5		4			
10 100	Pit	100	4	50 2C?	ABR
7		6			
10 100	Pit	100	2	9 1C?	
9		8			
11 111	Pit	111	1	8 ROM	
1		2			
12 120	Linear N-S	120	6	83 L1E2?	
2		3			
12 -	Unstratified	122	1	2 M3+	
		8			
13 -	Topsoil	130	6	133 L1E2?	
		0			
13 132	Ditch E-W	133	5	50 E2?	
9	primary silt	0			
14 -	Levelling below topsoil	140	1	11 L1E2?	
		1			
15 150	Linear N-S	150	1	7 EM2	
6		7			
16 160	Ditch WSW- ENE	160	1	7 2C?	
2		3			
16 160	Grave E-W	160	2	13 2C?	
4		5			

519 12140

APPENDIX b
ARCHIVE CODES

Code	Expansion
	VESSEL TYPES
18	Samian 18 dish
31	Samian 31 dish/bowl
36	Samian 36 dish
A	Amphora
B334	Bowl carinated Lincoln type
B?	Bowl?
BCAR?	Bowl carinated
BCUR	Bowl curved-rim
BD	Bowl or dish
BDFL	Bowl or dish flat-rim
BEV	Bowl everted-rim
BFB	Bowl bead & flange
BFL	Bowl flat-rim
BK	Beaker
BKRO	Beaker rouletted
U	
BNAT	Bowl native type
BNAT	Bowl native type variant
V	
BNK	Bowl necked
BREE	Bowl reed-rim type
D	
BWM	Bowl wide-mouth
CLSD	Closed
CP	Cooking-pot
CPN	Cooking pot native type
D	Dish
D452	Dish Lincoln type G-B
F	Flagon
J	Jar
JB	Jar or bowl
JBCUR	Jar or bowl curved-rim
JBKEV	Jar or beaker everted-rim
JCUR	Jar curved-rim
JEV	Jar everted-rim
JL?	Jar large
JLH	Jar lug-handled
JLS	Jar lid-seated
JMR	Jar moulded-rim
JNN	Jar narrow-neck

JRUST	Jar rusticated
JS?	Jar storage
L	Lid
LMR	Lid moulded-rim
LSQ	Lid square-rim
MHK	Mortaria hook-rim
RT9	Samian Ritt 9 cup
TEG	Tile Tegula

DECORATION etc

BIAP	Burnished intersecting arcs pointed
BL?	Burnished line
BLOO	Burnished loop
P	
BWL	Burnished wavy-line
COST	Comb stamp
HM	Hand-made
LA	Lattice acute
NAME	Name stamp
PAD	Painted dots
RIL	Rilled
RLIN	Rusticated linear
RNOD	Rusticated nodular
ROUL	Rouletted line
ROUZ	Rouletted zone
RUST?	Rusticated UK type
SWL	Scored wavy-line
SZZ	Scored zig-zag
WM	Wheel-made

APPENDIX c ARCHIVE DATA

Cxt	Fabric	Form	Manuf	Ves	D?	DNo	Details	Lnk	Shs	Wt
118	GREY	-	-	-	-	-	BSS	-	2	13
118	ZDATE	-	-	-	-	-	ROM	-	-	-
139	GREY	BNATV	-	-	D	1	RIM/PT WALL;DIAM24	-	1	133
139	ZDATE	-	-	-	-	-	EM2?	-	-	-
400	CR	F?	-	-	-	-	BS BASAL	-	1	16
400	ZDATE	-	-	-	-	-	1-2C	-	-	-
403	SAMSG?	36	-	1	D	3	COMP PROF;NR COMP DISH;NO STAMP	-	3	1225
403	CR	F?	-	-	-	-	BS	-	1	11
403	DR20	A	-	-	-	-	BS FLAKE;GRITTY EARLY FAB	-	1	20
403	OX	-	-	-	-	-	BS FINE LTRB;ABR	-	1	3
403	GREY	JEV	-	-	D	2	RIM/SHLDR;THIN WALL;DIAM13.5	-	1	32
403	LEG	-	-	-	-	-	CHIP ONLY	-	1	1
403	GREY	BCAR?	-	-	-	-	BS PT CARINATION;DKGRY	-	1	6
403	GREY	-	-	-	-	-	CHIP	-	1	1
403	SHCM	-	-	-	-	-	BS ABR;GRY W RB EXT;THIN WALL;HM?	-	1	2
403	ZDATE	-	-	-	-	-	LIE2?	-	-	-
403	ZZZ	-	-	-	-	-	NR COMP SG 36 DISH	-	-	-
404	DR20	A	-	-	-	-	BS GRITTY EARLY FAB	-	1	102
404	LEG	CLSD	-	-	-	-	BS	-	1	2
404	CR	CLSD	-	-	-	-	BS THINWALL	-	1	2
404	GREY	B334??	-	-	-	-	RIM FR ONLY;DIAM14;GRY W THIN RB CORT.	-	1	4
404	GREY	CLSD	ROUZ	-	-	-	BS NECK;ROUZ;DKGRY;SAME IN	405	1	23
404	GREY	-	-	-	-	-	BSS	-	3	12
404	SHCM	BEV	WM	-	D	44	RIM/PT SHLDR;DIAM24;DKGRY	-	1	48
404	SHCM	CLSD?	WM	-	-	-	BS NECK;RB INT	-	1	12
404	SHCM	CLSD	WM	-	-	-	BS DKGRY;HARD	-	1	16
404	SHSM	-	-	-	-	-	BS VABR	-	1	4
404	VESIC	-	-	-	-	-	BS/CHIP GRY;LTBN SURFS;VABR	-	2	9
404	PRO	-	-	-	-	-	BLUE&WHITE CHINA	-	1	1
404	FCLAY?	-	-	-	-	-	FRAGS	-	5	7
404	ZDATE	-	-	-	-	-	L1-2?	-	-	-
404	ZZZ	-	-	-	-	-	POST-MED SH INTRUSIVE?	-	-	-
405	GREY	CLSD	ROUZ	-	-	-	BS;ROUZ;DKGRY;SAME IN	404	1	7
405	GREY	J?	-	-	-	-	BS LWR WALL W GROOVES BELOW GIRTH&BASAL;THIN WALL	-	1	22
405	SHCC	JS?	HM?	-	D	4	RIM/PT WALL;DIAM36;INT PROJ ON RIM;BURNT	-	1	163
405	SHCC	-	HM	-	-	-	BS 2 & FLAKES;DKGRY;RB EXT SURF	-	8	51
405	FCLAY	-	-	-	-	-	LUMP	-	1	48
405	ZDATE	-	-	-	-	-	1-2C?	-	-	-
408	SAMSG	RT9	-	-	-	-	FTRG/WALL >CARIN;PRE-FLAV	-	1	7
408	CR	CLSD	-	-	-	-	BASE PLAIN;THICK;DIAM10	-	1	70
408	CR	CLSD	-	-	-	-	BS	-	1	5
408	GREY	CLSD?	-	-	-	-	BASE FTM;LTGRY	-	1	54
408	GREY	-	-	-	-	-	BS	-	1	5
408	GREY	CLSD	-	-	-	-	BS RB FB;THIN DKGRY SURF	-	1	15
408	IAGR	J	-	-	-	-	BS DKGRY;WM;QTZY	-	1	27
408	SHCF	-	HM	1?	-	-	BSS GRY;BN FB;LTRB EXT;DKGRY INT	-	5	40
408	SHSM?	-	?	-	-	-	BS DKGRY;VESIC;MANUF?	-	1	8
408	OX?	-	-	-	-	-	SCRAPS;SURF LOST;VABR	-	2	6
408	ZDATE	-	-	-	-	-	1-2C?	-	-	-
408	ZZZ	-	-	-	-	-	PRE-FLAV SAMIAN	-	-	-
415	PINK	CLSD	-	-	-	-	BS	-	1	8
415	CR	CLSD	-	-	-	-	BS	-	1	4
415	AMPH?	A?	-	-	-	-	BS VABR ROUNDED;LIMEY	-	1	31
415	NVCC?	BK?	PAD;RO UL	-	-	-	BS FINE LTRB/GRY FAB;LTER CORT;DKCC;DK SPOTS ?OVER-PAINT CR?:ABR	-	2	4
415	GREY	JEV	BL?	1	D	5	RIM/PT WALL;DIAM13;POSS BL BOTTOM SH	-	2	38
415	GROG?	JNN?	-	-	D	6	RIM/PT NECK;DIAM8;GRY FB;LTRB SURFS;F.GRITTY;GROG? CLAY PELL?	-	1	6
415	GREY	JRUST	RNOD?	-	-	-	BS F.HIGH RELIEF ;THIN WALL	-	1	8

415	IAGR	J	WM	-	-	-	BSS SHLDR GROOVE;DKGRY	-	3	16
415	IAGR?	CLSD	WM	-	-	-	BS GRY INT;BN EXT;BASAL	-	2	12
415	VESIC	-	-	-	-	-	BS X?BASE;LOST SHELL? & CHIP	-	2	10
415	GREY	-	-	-	-	-	BSS 4 & FLAKE	-	5	23
415	GREY	-	-	-	-	-	BASE? FRAG;VABR;LOST SURF	-	1	52
415	ZDATE	-	-	-	-	-	LIE2?	-	-	-
415	ZZZ	-	-	-	-	-	?INTRUSIVE NVCC	-	-	-
500	LEG	CLSD	-	-	-	-	BS	-	1	16
500	GREY	B334	-	-	D?	-	RIM FR>FLAT CARIN;DKGRY SURFS	-	1	26
500	GREY	B334	-	1?	-	-	BSS INCL FLAT CARIN. LTGRY	-	2	32
500	GREY	F?	-	-	-	-	HDLE 3RIB;DKGRY;THIN CORTEX	-	1	20
500	GREY	BFL?	-	-	-	-	FLANGE ONLY;GROOVE AT EDGE;BREED?	-	1	8
							TYPE			
500	GREY	BCAR?	-	-	-	-	BS HIGH NECK>SHLDR;V.SIM BOWL IN	508?	1	13
500	GREY	BWM	-	-	-	-	RIM/NECK;U'CUT;FLTGRY	-	1	41
500	IAGR	JEV	-	-	D	7	RIM/PT WALL;DKGRY ON RB FAB;WM;DIAM18	-	1	71
500	IAGR	-	-	-	-	-	BSS	-	4	84
500	GROG	-	-	-	-	-	BSS ABR GREYISH SHS;SOFTER THAN IAGR	-	3	37
500	GREY	-	-	-	-	-	BSS	-	2	27
500	TILE	-	-	-	-	-	FRAG BURNT GREY;?TEG	-	1	50
500	OX?	-	-	-	-	-	SCRAPS;FLAKES	-	4	9
500	ZDATE	-	-	-	-	-	ML3?	-	-	-
500	ZZZ	-	-	-	-	-	MOSTLY 2C POT	-	-	-
504	SAMSG	-	-	-	-	-	FLAKE ONLY	-	1	1
504	PINK?	CLSD	-	-	-	-	BS CR;MICAC	-	1	6
504	NVCC?	BK	-	-	-	-	BS CHIP ONLY;CR FAB;POSS NVCC	-	1	1
504	OX	CLSD	-	-	-	-	BS CURVED ?SHLDR;LTRB;THIN WALL	-	1	6
504	GREY	J?	-	-	-	-	BS SHLDR? GROOVE;LTGRY	-	1	5
504	GREY	JEV	-	-	-	-	RIM FRONLY	-	1	12
504	GREY	JEV	-	-	-	-	RIM/SHLDR;DKGRY;SMALL	-	1	10
504	GREY	-	LA	3?	-	-	BSS;ABR	-	4	22
504	CR?	-	-	-	-	-	BS BURNT	-	1	4
504	GREY	-	-	-	-	-	BSS;ABR SCRAPPY	-	7	41
504	GREY	BK?	-	-	-	-	BS THIN WALL	-	1	1
504	SHCM?	-	-	-	-	-	BSS ABR;SCRAPPY	-	4	20
504	ZDATE	-	-	-	-	-	2C?	-	-	-
504	ZZZ	-	-	-	-	-	CHIP CC ?L2+	-	-	-
505	GREY	CLSD	-	-	-	-	BASE FTM;DKGRY	-	1	114
505	IAGR	-	-	-	-	-	BSS; WM	-	2	26
505	SHEL	-	-	-	-	-	BS RB FAB;DKGRY EXT;WM?;F.HARD	-	1	11
505	AMPH?	A?	-	-	-	-	BS THICK;MICAC;RED INCLS	-	1	20
505	ZDATE	-	-	-	-	-	2C?	-	-	-
508	GREY	BCAR	-	1	D	8	RIM>BODY;PT BN FB;DKGRY	500?	4	56
							SURFS;DIAM16;UNUS RIM;SIM.SH IN			
508	CR	CLSD	-	-	-	-	BS MICAC;ABR;?FLAG	-	1	4
508	GREY	-	-	-	-	-	BSS	-	4	60
508	IAGR	-	-	-	-	-	BSS DKGRY/BN SURFS;WM	-	3	85
508	SHSM	CPN	-	-	-	-	RIM EVERT;INT PROJ.WM;DIAM20;V SPARSE	-	1	37
							SHELL			
508	SHCM	BNAT	-	-	-	-	RIM FRAG ONLY;MED-COARSE	-	1	28
							SHEL;DKGRY;POSS HM;DAMAGED			
508	ZDATE	-	-	-	-	-	L1-2	-	-	-
600	SAMSG	18/31	-	-	-	-	RIM/WALL	-	1	22
600	SAMSG	18	-	-	-	-	FTRG	-	1	26
600	DR20	A	-	-	D	9	RIM;EARLY FAB	-	1	248
600	MOLO	MHK	NAME	1	D	21	RIM/PT WALL;BSS;LTBN MICAC.;WORN;NO	-	3	223
							TG;CF STMP(700);DIAM34			
600	CR	CLSD	-	-	-	-	BASE PLAIN;DIAM8;TRIMMED BASAL ZONE	-	1	69
600	CR	CLSD	-	-	-	-	BSS;SL BURNING EXT	-	3	37
600	CR	CLSD	-	-	-	-	BS THINNER WALL;?FLAG	-	1	4
600	CR	CLSD	-	-	-	-	BASE FTM;SPREADING WALL;DIAM10	-	1	105
600	GREY	B334	-	1	D	10	RIMS/WALL;INCL FLAT CARIN. DIAM14	-	5	110
600	GREY	B334	-	-	-	-	RIM/PT NECK SIM.TYPE DWG10	-	1	15
600	GREY	B334	-	-	-	-	RIM SIMPLE BEAD;OUTCURVING	-	1	10
600	BB1?	CP	-	-	D	11	RIM EVERT;SHLDR;UNUS STUBBY RIM;DIAM14	-	1	18
600	BB1	CP	-	-	-	-	RIM/NECK ONLY;NO BWL;CF G76-6;E3	-	1	10
600	GREY	D452	-	-	D	12	RIM/WALL;DIAM?	-	1	30
600	GREY	LMR	-	-	D	13	RIM/WALL;DIAM19-20	-	1	50
600	GREY	L	BLOOP	1	D	14	RIM/WALL;DIAM18	-	3	62
600	GREY	BFL	BIAP	-	D	41	RIM/PT WALL;DIAM16	-	1	27

600	GREY	BFL	-	-	D	15	RIM/WALL;GROOVE AT CARIN;DIAM15;UNUS TYPE	-	1	19
600	GREY	JBCUR	-	-	-	-	RIM ONLY;DIAM20	-	1	22
600	GREY	JEV	-	-	-	-	RIM ONLY	-	1	11
600	GREY	BNATV	-	1	D	16	RIM/WALL;UNUS TYPE;DIAM32	-	3	195
600	GREY	JRUST	RNOD	1?	-	-	BSS	-	2	23
600	GREY	JRUST	RLIN	-	-	-	BS	-	1	5
600	GREY	J?	BWL	-	-	-	BS BWL ABOVE&BELOW TWIN GROOVES	-	1	12
600	GREY	J	LA	2	-	-	BSS;ACUTE LA	-	2	33
600	IAGR?	BNAT	-	-	D	17	RIM/WALL;DIAM25;UNUS TYPE	-	1	116
600	GREY	JEV	-	-	-	-	RIM FRAG;DKGRY	-	1	12
600	IAGR	BNAT	-	-	-	-	RIM/PT WALL;PROJ.INT	-	1	68
600	GROG	BNAT	-	-	D	43	RIM/PT WALL;DIAM26	-	1	51
600	GREY	JEV	-	-	-	-	RIM/PT SHLDR;DIAM18;HEAVY;F.COARSE	-	1	29
600	GRFF	J	-	1	-	-	BASE FTM;GROOVE UNDER;WALL	-	3	247
600	GREY	J	-	1	-	-	BSS	-	3	84
600	GREY	J?	-	-	-	-	BS LTGRY;SCORED LINES BASAL ZONE	-	1	42
600	GREY	BK	-	-	-	-	BASE SMALL;F.COARSE FAB	-	1	10
600	GREY	CLSD	-	-	-	-	BASE FTM;TRIMMED BASAL	-	1	64
600	GREY	JB	-	1	-	-	BASE PLAIN;F.COARSE FAB;LGE;BS	-	2	168
600	GREY	J	-	-	-	-	BASE PLAIN	-	1	65
600	VESIC	JB	HM	-	-	-	BASE DIAM12;LGE VESS	-	1	143
600	VESIC	J	HM	-	-	-	BASE DIAM8 PLAIN	-	1	35
600	GREY	CLSD?	-	-	D	18	FTRG;DIAM5;THICK BASE;DKGRY;UNUS	-	1	11
600	GREY	CLSD	-	-	-	-	BSS;F.THIN WALLED	-	5	40
600	GREY	D452?	-	-	-	-	BS CURVING;POSS X D452;DKGRY	-	1	20
600	SHEL	J?	-	-	-	-	BS WM;DKGRY;F.THIN WALL	-	1	21
600	GREY	JB?	-	1?	-	-	BSS F.THICK;LGE	-	4	129
600	IAGR	CLSD	-	1?	-	-	BSS DKGRY;WM	-	2	73
600	VESIC	-	-	-	-	-	BS F.SOFT;?HM	-	1	17
600	IAGR	-	-	3	-	-	BSS MISC COARSE FAB;?RILLING	-	3	61
600	GREY	-	-	-	-	-	BSS MISC	-	30	382
600	ZDATE	-	-	-	-	-	2-?3C	-	-	-
600	ZZZ	-	-	-	-	-	MOST 2C	-	-	-
603	CR	CLSD	-	2	-	-	BSS;FLAGONS?	-	2	23
603	GREY	B334	-	1	D	19	RIM>LWR WALL;DIAM14;	-	4	54
603	GREY	JCUR	-	1	D	20	RIM/PT WALL;DIAM13	-	2	31
603	GREY	-	-	-	-	-	BSS	-	2	32
603	ZDATE	-	-	-	-	-	E2+	-	-	-
606	GREY	CLSD?	-	-	-	-	BASE FTM;DKGY;DIAM7	-	1	27
606	ZDATE	-	-	-	-	-	2C	-	-	-
610	GREY	LSQ	-	-	D	22	RIM/PT WALL;DIAM16;THIN WALL	-	1	14
610	GREY	JCUR	-	1	D?	-	RIM>SHLDR;THIN WALL;DIAM14;LTGRY	-	3	25
610	GREY	JLS	-	-	D	40	RIM ONLY;DKGRY;DIAM11.5	-	1	11
610	GREY	JCUR	-	1	-	-	RIM ONLY;LTGRY	-	2	15
610	GREY	JEV	-	1	-	-	RIM NON J BS;DKGRY	-	2	13
610	GREY	BDFL	-	-	D?	-	RIM/PT WALL;BBT	-	1	20
610	BB1	BDFL	-	-	-	-	FLANGE FR ONLY	-	1	5
610	GREY	BD	-	-	-	-	BS LTGRY;INT GROOVE BELOW RIM;CURVED WALL	-	1	10
610	GREY	JRUST	RLIN	-	-	-	BS COARSE;F.HIGH RELIEF	-	1	12
610	GFIN	BCAR?	-	-	-	-	BS THINWALL;CARIN. ONLY;DKGRY	-	1	3
610	CR	F	-	-	-	-	BS NECK NARROW;2RIB HDLE	-	1	19
610	CR	F	-	-	-	-	HDLE 2RIB;WIDER	-	1	39
610	CR	CLSD	-	-	-	-	BSS;PROB FLAGON	-	2	11
610	CR	F?	-	1	-	-	BSS;DKER CR	-	2	25
610	OX	BK?	-	-	-	-	BS THIN WALL;CURVED	-	1	2
610	OX	-	-	-	-	-	FLAKE	-	1	3
610	GREY	BK?	-	-	-	-	BSS THIN WALL;LTGRY	-	3	5
610	GREY	-	-	-	-	-	BSS	-	14	111
610	COAR	-	-	-	-	-	BSS;COARSE POOR MIX;GREY	-	2	47
610	SHCF	-	-	1	-	-	BSS GRY FB;LTRB SURFS;WM;THIN WALL;BK/BOWL?	-	2	13
610	VESIC	-	HM?	-	-	-	BSS DKGRY	-	2	19
610	SHCM	-	?	-	-	-	BSS DKGRY;SOOT INT	-	2	19
610	SHCM	-	?	-	-	-	BS DKGRY;GRY/BN EXT	-	1	6
610	SHCF?	-	?	-	-	-	BS RB FB/SURF;SHELL INT SURF ONLY	-	1	10
610	TILE	-	-	-	-	-	FLAKE	-	1	8
610	FCLAY	-	-	-	-	-	LUMP;FIRED LTGRY	-	1	24
610	ZDATE	-	-	-	-	-	EM2?	-	-	-

610	ZZZ	-	-	-	-	-	SCRAPPY ;SOME ABR	-	-	-
614	BB1?	CP	-	-	-	-	BS	-	1	6
614	GREY	-	-	-	-	-	BSS THIN WALL	-	2	9
614	GREY	-	-	-	-	-	BSS LTGRY	-	2	16
614	GREY	CLSD	-	1	-	-	BSS COARSER FAB	-	4	26
614	SHCF	-	?	-	-	-	BS GRY;RB EXT	-	1	6
614	SHSF	CLSD	HM?	-	-	-	BS GRY;BN EXT;?VERT SMOOTHING	-	1	14
614	TILE	-	-	-	-	-	FLAKE	-	1	17
614	ZDATE	-	-	-	-	-	ROM	-	-	-
614	ZZZ	-	-	-	-	-	SCRAPPY BSS ONLY	-	-	-
618	GREY	BWM	-	-	-	-	RIM ONLY;DIAM25;CURVED OVER	-	1	23
618	GREY	BK?	COST	-	D	45	BS PT COMB STMP LOZENGE	^^	1	3
618	ZDATE	-	-	-	-	-	3C?	-	-	-
619	ZZZ	-	-	-	-	-	IRON ORE FRAGS? 9g	-	-	-
620	GREY	CLSD	-	1	-	-	BASE FTM;UNUS FLARING WALL;BSS	-	3	27
620	GREY	-	-	-	-	-	BS LTGRY;THIN WALL	-	1	3
620	TILE	-	-	-	-	-	FLAKED FRAG	-	1	60
620	ZDATE	-	-	-	-	-	2C?	-	-	-
700	MOLO	MHK	NAME	-	D	23	RIM FR W COMP. STMP;CR MICAC.RED	-	1	50
							INCLS;CF DWG21(600);<11>	-	-	-
700	IAGR	L	-	-	D	24	RIM/PT WALL;DKGRY;SOOT U'SIDE;DIAM24	-	1	22
700	GREY	BNAT	-	-	D	25	RIM/PT WALL;DIAM34;THICK;LTGRY FB;DKER	-	1	108
							SURFS	-	-	-
700	GREY	-	-	-	-	-	BS	-	1	10
700	ZDATE	-	-	-	-	-	E2?	-	-	-
708	GREY	JRUST	RLIN	-	-	-	BS THIN WALL;DKGRY;ELEGANT RLIN	-	1	6
708	GREY	JB	SWL	-	-	-	BS LTGRY;DKER CORT/SURF;F.COARSE	-	1	8
708	GREY	BK?	-	-	-	-	BASE FTM;DIAM6	-	1	10
708	GREY	-	-	-	-	-	BS F.COARSE	-	1	21
708	GREY	-	-	-	-	-	BS CHIP	-	1	2
708	ZDATE	-	-	-	-	-	2C	-	-	-
709	GREY	BCUR	-	-	-	-	RIM ONLY;DIAM22;S'WICH FB	-	1	25
709	GREY	JEV	-	1	-	-	RIMS ONLY;LTGRY	-	2	29
709	GREY	JLS	-	-	-	-	RIM ONLY;BURNT	-	1	14
709	GREY	BK?	-	-	-	-	BASE FTM;DIAM7;DKGRY	-	1	7
709	GREY	-	-	-	-	-	BSS;DKGRY;ABR	-	5	30
709	GREY	-	-	-	-	-	BS LTGRY	-	1	12
709	CR	CLSD	-	-	-	-	BS BURNT;ABR	-	2	12
709	SHCF	BK?	HM?	-	D	26	RIM/PT WALL;DKGRY;DIAM10;SMOOTHED EXT	-	1	9
709	TILE	TEG	-	-	-	-	FRAG TEG	-	1	25
709	ZDATE	-	-	-	-	-	2C	-	-	-
709	ZZZ	-	-	-	-	-	SCRAPPY;POSS>M2	-	-	-
712	OX	CLSD	-	-	-	-	BS LTRB	-	1	7
712	GREY	-	-	-	-	-	BS;F.COARSE;DKGRY	-	1	13
712	GREY	JL?	SZZ	-	-	-	BS 2 ZONES ROUGH SCORED ZIGZAG	-	1	37
712	ZDATE	-	-	-	-	-	2C	-	-	-
716	GREY	JEV	-	1	D	27	RIM/WALL;THIN	-	6	119
							WALL;DKGRY;GLOBULAR;DIAM12;SPLIT IN	-	-	-
							NECK ?SECOND	-	-	-
716	GREY	JNN?	-	-	-	-	BS NECK NARROW;THIN WALL;DKGRY	-	1	8
716	OXL	JRUST	RLIN	-	-	-	BS THIN WALL;LOW RELIEF THIN RLIN	-	1	4
716	GREY	-	-	-	-	-	BSS	-	2	12
716	GROG	JEV	-	1?	D	28	RIM/PT SHLDR;BS;LTGRY;LTGYBN	-	2	51
							SURFS;GROOVE OUTER RIM TOP;OCC FLINT	-	-	-
716	ZDATE	-	-	-	-	-	2C	-	-	-
719	SAMSG	CLSD	-	1	-	-	BSS J THIN WALL	-	2	2
719	GRSH	JLH	SWL	1	D	29	COMP PROF POSS;FRESH;DIAM16.5	-	7	1122
719	CR	BREED	-	1	D	30	RIM/PT WALL;BURNT;GROOVE OUTER EDGE	-	2	72
							FLANGE;MICAC;RED INCLS;DIAM22	-	-	-
719	CR	F?	-	-	-	-	BS	-	1	9
719	GREY	JMR	-	-	D	31	RIM/PT WALL;DIAM15;RIM EVERT;LTRB	-	1	20
							FB;GRY SURFS	-	-	-
719	GREY	D452	-	-	D	32	RIM ?COMP	-	1	30
							PROF;THICKISH;DIAM22?;EMBEDDED CHALK	-	-	-
							INCL	-	-	-
719	IAGR	BNAT	-	-	D	33	RIM/PT WALL;WM;PROJ INTERIOR;DIAM21	-	1	60
719	GREY	JNN	-	-	D	34	RIM/NECK;DIAM11;LTGRY	-	1	15
719	OX	F?	-	-	-	-	BS LTGRY FB;LTRB SURFS;HDLE	-	1	31
							SCAR;VABR;F.FINE	-	-	-
719	IAGR?	JEV	-	-	-	-	RIM FRAG ONLY	-	1	6

719	IAGR	JB	-	-	-	-	BS DKGRY;SHLDR GROOVE;WM	-	1	14
719	GREY	-	-	-	-	-	BSS	-	3	27
719	GREY	CLSD	ROUZ	-	-	-	BS W'SPACED ROUZ	-	1	7
719	SHEL	-	?	-	-	-	BS HARD;SPARSE SHEL;MANUF?	-	1	5
719	TILE	-	-	-	-	-	CHIP	-	1	1
719	ZDATE	-	-	-	-	-	EM2	-	-	-
720	SHSM	JEV	HM?	1	D	35	COMP PROF;DKGRY;DIAM11.5;COIL BUILT?	-	4	196
720	C186	A	-	1	-	-	NECK/HDLE FRAGS;LTRB FB;CR SURFS	-	2	472
720	CR	F	-	-	-	-	BSS;THIN WALL;SABR	-	13	99
720	PINK	F?	-	-	-	-	FTRG	-	1	40
720	PINK	F?	-	-	-	-	FLAKE	-	1	3
720	GREY	B334?	-	1	D	36	RIM/NCK;NON J BSS;THIN WALL;GRY CORE RB	-	4	48
							CORT;START CARIN BSS;DIAM16	-		
720	GREY	D	-	1	-	-	BASE FTM;DKGRY;POSS D452 TYPE	-	3	56
720	GREY	-	-	-	-	-	BSS DKGRY	-	5	55
720	GREY	-	-	-	-	-	BSS LTGRY	-	4	53
720	GREY	JRUST	RLIN	1	-	-	BSS LTGRY	-	2	19
720	GREY	-	-	-	-	-	BASE FTM;DIAM9;DKGRY;THINWALL	-	1	7
720	GREY	CLSD	-	-	-	-	BASE FTM;DIAM10;OUTFLARING	-	1	46
							WALL;DKGRY	-		
720	IAGR	CLSD	HM	-	-	-	BASE PLAIN;DKGRY	-	1	28
720	IAGR	-	HM?	-	-	-	BS ?VERT SMOOTHING MARKS	-	1	24
720	IAGR	-	-	-	-	-	BSS WM;DKGRY	-	3	37
720	SHSM	CPN	-	-	D	37	RIM DKGRY;DIAM18;HARD FIRED	-	1	25
720	GROG	J?	WM	-	-	-	BS GRY FB;GRYBN SURFS;GREY GROG	-	1	52
720	VESIC	-	?	-	-	-	BS;GREY;LOST SHELL	-	1	6
720	FCLAY	-	-	-	-	-	FRAG LTRB	-	1	9
720	ZDATE	-	-	-	-	-	LIE2?	-	-	-
725	IAGR	BNAT	-	-	-	-	RIM FRAG FLAKED;DKGRY;GROOVE INT EDGE	-	1	42
							RIM	-		
725	SHCF	-	RIL	-	-	-	FLAKE;DKGRY	-	1	3
725	SHCF	-	?	-	-	-	BS LTRB EXT	-	1	3
725	OX	CLSD	-	-	-	-	BS RB;L'SCALE INT;ABR	-	1	8
725	GREY	CLSD	-	-	-	-	BS DKGRY INT;LT EXT	-	1	15
725	OX	-	-	-	-	-	BS LTRB;VABR	-	1	4
725	ZDATE	-	-	-	-	-	1-2C	-	-	-
725	ZZZ	-	-	-	-	-	ABR;SCRAPPY	-	-	-
727	GREY	JB?	-	-	-	-	RIM FRAG;CURVED;DIAM?18;DKGRY;THIN	-	1	7
							WALL	-		
727	GREY	JRUST	RLIN?	-	-	-	BS DKGRY	-	1	4
727	OX	-	-	-	-	-	BS;FLAKES;LTRB	-	2	4
727	IAGR	CLSD	WM	-	-	-	BS;DKGRY	-	1	61
727	GREY	J?	-	-	-	-	BS DKGRY BURNISHED EXT	-	1	32
727	GREY	-	-	-	-	-	BSS;LTGRY	-	2	29
727	ZDATE	-	-	-	-	-	LIE2?	-	-	-
740	CR	F?	-	-	-	-	BS	-	1	9
740	SHCM	BNAT	-	1?	-	-	RIM FR;DIAM22;BASE	-	9	469
							DIAM11;BSS;?WM;DKGRY	-		
740	GREY	-	-	-	-	-	BSS ABR	-	4	20
740	SHCM	JEV	-	-	-	-	RIM/PT SHLDR;DIAM10?;RB EXT;THIN WALL	-	1	7
							SMALL JAR	-		
740	ZDATE	-	-	-	-	-	LIE2?	-	-	-
900	NVCC	BFB	-	-	-	-	RIM FRAG;ABR	-	1	43
900	ZDATE	-	-	-	-	-	4C	-	-	-
904	GREY	JBKEV	-	-	-	-	RIM FRAG;DKGRY;THIN WALL;DIAM11-12	-	1	4
904	GREY	-	-	-	-	-	BS LTGRY	-	1	3
904	GREY	-	-	-	-	-	BS DKGRY;ABR	-	1	6
904	SHCM	-	?	-	-	-	BS DKGRY;HM?	-	1	11
904	ZDATE	-	-	-	-	-	L1-2?	-	-	-
1000	GREY	-	-	-	-	-	BS;ABR	-	1	12
1000	ZDATE	-	-	-	-	-	ROM	-	-	-
1004	SAMSG	D	-	-	-	-	BSS	-	2	9
1004	GREY	CLSD	-	-	-	-	BS	-	1	26
1004	ZDATE	-	-	-	-	-	1-2C?	-	-	-
1006	GREY	JEV	-	-	-	-	RIM FRAG;LTGR;THIN WALL	-	1	7
1006	GREY	JRUST?	RUST?	-	-	-	BS;LTGRY;TRACES ?RUST	-	1	10
1006	OX	CLSD	-	-	-	-	BS F.COARSE RB EXT;DKGRY INT	-	1	22
1006	GREY	CLSD	-	-	-	-	BS ABR;RB INT	-	1	11
1006	ZDATE	-	-	-	-	-	2C?	-	-	-
1008	SAMSG	D	-	-	-	-	BS	-	1	4

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1008	IAGR	-	-	-	-	-	BS SCRAP	-	1	5
1008	ZDATE	-	-	-	-	-	1C?	-	-	-
1112	GREY	-	-	-	-	-	BS	-	1	8
1112	ZDATE	-	-	-	-	-	ROM	-	-	-
1203	OX	JEV	-	1	D	39	RIM/SHLDR;DIAM13;DKGRY FAB;BN SURFS;WM	-	2	33
1203	GREY	B?	-	-	-	-	BS NECK;POSS B334 TYPE;LTGRY;THIN WALL	-	1	10
1203	GREY	-	-	-	-	-	BSS	-	2	32
1203	SHCM	J?	-	-	-	-	BS SHLDR;WM;DKGRY;HARD	-	1	8
1203	ZDATE	-	-	-	-	-	L1E2?	-	-	-
1228	NVCC	BKROU	ROUZ	-	-	-	BS BN FAB	-	1	2
1228	ZDATE	-	-	-	-	-	M3+	-	-	-
1401	GREY	BFL?	-	-	-	-	FLANGE FRAG;LTGRY;GROOVE EXT TOP RIM	-	1	11
1401	ZDATE	-	-	-	-	-	L1E2?	-	-	-
1507	GREY	JRUST	RLIN	-	-	-	BS DKGRY;THIN LOW RELIEF RLIN	-	1	7
1507	ZDATE	-	-	-	-	-	EM2	-	-	-
1603	GREY	-	-	-	-	-	BS DKGRY	-	1	7
1603	ZDATE	-	-	-	-	-	2C?	-	-	-
1605	GREY	BK	-	-	-	-	RIM LTGRY;DIAM10;UPR W ROUND RIM	-	1	7
1605	GREY	-	-	-	-	-	BS DKGRY	-	1	6
1605	ZDATE	-	-	-	-	-	2C?	-	-	-
1300	SHCM	CPN	WM	1	D	38	RIM/PT WALL;DKGRY;VESIC;DIAM 16	-	3	55
1300	SHCM	CPN	WM	-	-	-	RIM/PT WALL;SIM. DWG38;LTGRY	-	1	26
1300	SHCC	-	?	-	-	-	BS GRYBN FAB;RB EXT SURF;MED-COARSE SHELL	-	1	16
1300	IAGR	BNAT	WM	-	D?	-	RIM/PT WALL;DIAM20?	-	1	36
1300	ZDATE	-	-	-	-	-	L1E2?	-	-	-
1330	GREY	BCAR?	-	1?	-	-	BS LTGRY;RND CARINATION	-	2	23
1330	GREY	-	-	-	-	-	BS;DKGRY	-	1	9
1330	VESIC	-	-	-	-	-	BS;DKGRY	-	1	7
1330	GROG	CLSD	-	-	-	-	BS DKGRY;GREY GROG;OCC FLINT	-	1	11
1330	ZDATE	-	-	-	-	-	E2?	-	-	-

APPENDIX 6: Roman ceramic building material report

Allenby Road Industrial Estate Roads, Lincoln (NEQ04)

Jane Young

Introduction

Nine hundred and one fragments of Roman ceramic building material were recovered from archaeological interventions. The material was examined visually and then recorded using locally and nationally agreed codenames on an Access database. Visual fabric types were also where possible recorded using an adapted London type series (archive details kept at the City of Lincoln Archaeological Unit).

Condition

The building material varies considerably from context to context and where it varies from a slightly abraded condition will be individually described in the archive list. Few fragments are in an unworn condition (only that from context 508 appears to be in a fresh condition) and much of the material has been damaged by plough action.

Overall Chronology and Typology

None of the ceramic building material recovered can be used for precise dating. No Roman brick or tile type series exist for the county and little well stratified material has been recovered from the area. A visual Fabric Type Series created for the LEB03 site on the south side of the River Witham (Fabrics 1 to 13) was used as comparative material for fragments from well stratified contexts, however, only a small number of pieces from this site could be matched with these fabrics. A new Fabric Type Series (Fabrics 14 to 23) was created for the NEQ04 site, although only fragments from good stratigraphic contexts were typed. All *Tegula* flanges were typed where possible, being similar to those found on the LEB03 site, mainly Type 1 and new 41.

Table 1: Ceramic Building material codenames and total quantities by fragment count and weight

Code name	full name	fragments	weight
BOX	Roman box tile	5	550
IMB	imbrex	98	15015
IMBDISC	imbrex (discarded)	1	60
RBRK	Roman brick	53	36540
RBRKDISC	Roman brick (discarded)	3	790
RTIL	Roman tile	80	14420
RTILDISC	discarded Roman tile	401	14262
TEG	Tegula	257	93005
TEGDISC	Tegula (discarded)	3	180

Most of the building material recovered from the site consists of undiagnostic Roman tile or brick fragments. The range of identifiable material present is limited, mainly consisting of *Tegula* and *imbrex* roofing tiles. The assemblage is noticeably different in composition from

that recovered from the large Roman groups from the LEB03 trenches. Only five possible box-flue tiles were noted from this site, although this is perhaps not surprising, as even when these cavity walling tiles are present on a site their numbers are not high. What is more noticeable is the low count of plain Roman brick (forty fragments) found on this site, possibly suggesting that the buildings were constructed entirely of stone. A number of large quadrant bricks were found in contexts 505 and 600 as well as unstratified in Trench 5. Fragments of either quadrant or semi-circular also occurred in contexts 600 and 1006 as well as an eighth circular brick in context 600. These are a rare occurrence in the area despite the fact that semi-circular bricks are known to have been produced in the Washingborough tile kiln. Few of these bricks are known from Lincoln and the surrounding area, although two semi-circular bricks were recovered from the LEB03 site (Trench 41) on the south side of the Witham. Most of the bricks have a radius of 145-155mm, however one example from context 600 is larger with a radius of 245mm. These tiles were primarily used for making half or full columns, although large semi-circular examples were used for seating in a plunge bath at Fishbourne, Sussex. Three fragments of tile and one of brick had been re-worked to form discs of between 70mm and 90mm diameter, possibly for use as lids for pottery vessels.

Site Assessment

Most of the building material was recovered from Trenches 5 and 10 with quite large assemblages also being recovered from Trenches 6 and 7. The largest fragments came from Trenches 5, 6 and 7 with the freshest material coming from context 508. There is no noticeable difference in fabric types amongst the material except for the presence of a few unusual fabrics, mainly containing calcareous inclusions, in Trench 10. The *Tegula* flanges from Trench 10 are also more variable in type than those from the other trenches.

Table 2: Ceramic building material for each Trench by fragment count

Trench	BOX	IMBRE	BRICK	UNDIAGNOS	TEGULA	TOTAL
01	2	5	5	19	11	43
02		2	1	7		10
03			1	5		6
04		2	3	18	9	32
05	1	47	*20	142	86	296
06	1	6	*19	44	13	83
07		13	2	50	33	98
08		1		2		3
09	1	4		46	12	63
10		18	*2	123	91	234
12			1			1
13		1	2	12	3	18
14				1		1
15				4	1	5
16				8	1	9
Total	5	99	56	481	260	901

* Denotes presence of quarter-round, eighth or semi-circular bricks

Summary and Recommendations

This is a diverse collection of Roman ceramic building material, much of which is made up of undiagnostic fragments of Roman roof tile. In the absence of any type series for Roman ceramic building material, none of the tile or brick can be used for dating purposes, although future typological work may enable some of the fabrics and *Tegula* flanges to be more closely dated. The pottery dating suggests that most of the material is of early Roman date (1st to 2nd century).

The large concentrations of Roman building material certainly suggest a substantial building. The presence of quadrant tiles, used for constructing columns, suggests that it may be a high status or monumental building. The range of fabric types and different *Tegula* flange profiles present suggest that although the tiles were possibly purchased from more than one source, most were probably purchased as part of a limited number of building episodes.

Ceramic Building Material Archive NEQ04

Jane Young and Doug Young

trench	context	cname	fabric	sub type	frags	weight	description
01	104	RTILDISC			1	10	very abraded
01	104	RBRK	site fabric 5		1	290	30mm thick;semi vitrified
01	108	IMB	site fabric 16		3	250	
01	108	IMB	site fabric 18		1	70	
01	108	RTILDISC			2	100	very abraded
01	108	TEG	site fabric 18	flange 2	1	470	
01	108	TEG	site fabric 5	flange new 43	1	270	
01	108	TEG	site fabric 20	flange new 41	1	460	
01	108	TEG	site fabric 19	flange new 41	1	180	
01	108	TEG	site fabric 16	flange	1	50	
01	111	TEG			1	60	signature
01	112	RTILDISC			2	80	very abraded
01	113	TEG			1	50	
01	113	RTILDISC			2	2	very abraded
01	118	IMB			1	100	
01	118	RTIL			1	110	reworked to a disc c.80mm diam;25mm thick

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trench	context	cname	fabric	sub type	frags	weight	description
01	118	TEG			1	100	
01	118	RTILDISC			1	20	very abraded
01	118	RBRK			1	100	
01	131	TEG			1	110	? ID or BOX
01	131	BOX	site fabric 20		1	200	combed;? Fabric ID;abraded
01	131	BOX	site fabric 16		1	120	sharp incised
01	131	RTILDISC			1	50	very abraded
01	131	RTILDISC			9	130	very abraded
01	137	RBRK	unusual fabric ?		1	200	abraded
01	140	RBRK	site fabric 21		1	150	very abraded
01	140	RBRK	site fabric 21		1	150	very abraded
01	140	TEG			1	160	very abraded
01	140	TEG	semi vitrified		1	300	fresh
02	201	RTILDISC			1	20	very abraded
02	201	IMB			1	30	
02	202	RBRK	site fabric 19		1	430	corner;35mm thick
02	202	RTILDISC			3	20	very abraded
02	210	RTILDISC			2	20	very abraded
02	214	IMB			1	50	
02	214	RTILDISC			1	200	very abraded
03	304	RBRK	site fabric 19/20		1	180	reworked to a disc;c70mm diam;30mm thick

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trench	context	cname	fabric	sub type	frags	weight	description
03	304	RTILDISC			4	70	very abraded
03	304	RTIL			1	100	corner;signature
04	403	RTILDISC			2	10	flakes
04	403	RTIL			1	20	
04	403	TEG	semi vitrified		1	110	
04	404	RBRK			1	120	
04	404	TEG		cut out	1	30	
04	408	RTIL			1	150	very abraded
04	408	RTILDISC			9	100	very abraded
04	415	RBRK			1	270	40mm thick
04	415	TEG		flange new 41;cut out B	1	250	
04	415	TEG			1	340	reworked to a disc;c.90mm diam
04	415	TEG			1	430	very abraded
04	415	TEG		flange new 41	1	150	very abraded
04	415	RBRK	semi vitrified		1	250	
04	415	IMB			1	200	
04	415	IMBDISC			1	60	
04	415	TEGDISC			3	180	
04	415	RTILDISC			5	150	
05	500	RTILDISC	various		9	290	scrappy very abraded
05	500	TEG		flange	1	220	

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trench	context	cname	fabric	sub type	frags	weight	description
05	500	BOX			1	40	sharp incised latice
05	500	TEG			1	100	
05	500	IMB			2	170	
05	504	RTILDISC	various		118	2350	scrappy very abraded
05	504	TEG		flange new 41	1	250	
05	504	TEG		flange	1	150	
05	504	TEG	various		15	1950	
05	504	RBRK	various		3	450	scrappy very abraded
05	504	IMB	various		6	420	
05	505	TEG	site fabric 15	flange new 41	1	2050	
05	505	TEG	site fabric 16		1	120	
05	505	TEG	site fabric 21	flange	1	60	
05	505	TEG	site fabric 16	flange	1	100	
05	505	TEG	site fabric 16	flange new 41	1	100	
05	505	TEG	site fabric 12	flange new 41	1	800	smoothed underside
05	505	TEG	site fabric 16	cut out B	1	1650	2 finger looped signature
05	505	TEG	site fabric 19	flange new 41;cut out B	1	1460	2 finger signature
05	505	RBRK	site fabric 15/21	quarter round	1	2300	complete;300mm diam;65mm thick;finger marks
05	505	IMB	site fabric 16		1	80	
05	505	IMB	site fabric 16		1	700	
05	505	IMB	site fabric 15		1	20	

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trench	context	cname	fabric	sub type	frags	weight	description
05	505	RTILDISC	various		4	10	
05	505	IMB	site fabric 16		1	360	corner
05	505	TEG	site fabric 14	flange new 41	1	460	
05	508	TEG	site fabric 19	flange new 41	1	1750	end with cut out missing; smoothed under side
05	508	TEG	site fabric 15	flange 7	1	840	
05	508	TEG	site fabric 12	flange 1/new 41;cut out B	1	390	fabric type series
05	508	TEG	site fabric 16	flange 9 ?	1	240	
05	508	TEG	site fabric 16	flange new 41	1	250	
05	508	TEG	site fabric 16	flange new 41	1	140	
05	508	TEG	site fabric 19		1	320	
05	508	TEG	site fabric 19	flange new 41;cut out B	2	800	fabric type series
05	508	TEG	site fabric 15	flange new 41;cut out B	1	2040	pawmark ?; 6 cuts on underneath ? Batch mark
05	508	TEG	site fabric 15	flange new 41;cut out B	1	1450	cuts on underneath ? Batch mark
05	508	TEG	site fabric 21		1	620	fabric type series;signature ?
05	508	TEG	site fabric 15/16		8	2520	
05	508	RTILDISC	various		3	160	very abraded
05	508	TEG	site fabric 16	flange;cut out B	1	120	
05	508	TEG	site fabric 15	flange 7	1	1730	
05	508	TEG	site fabric 16	flange 12;cut out B	1	2160	
05	508	TEG	site fabric 21		1	360	brush/tool marks
05	508	TEG	site fabric 15	flange 12	1	650	

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trench	context	cname	fabric	sub type	frags	weight	description
05	508	TEG	site fabric 15	flange 1	1	920	
05	508	RBRK	site fabric 15		1	1010	fabric type series;140mm+;48mm thick
05	508	IMB	site fabric 16		2	670	fabric type series;240mm+;corner
05	508	IMB	site fabric 16		4	650	
05	508	IMB	site fabric 16		1	290	corner
05	508	IMB	site fabric 17		3	400	fabric type series
05	508	IMB	site fabric 16		1	360	
05	508	IMB	site fabric 18		2	300	fabric type series
05	508	IMB	site fabric 18		2	120	
05	508	RBRK	site fabric 14		1	270	corner;75mm thick;150mm+
05	508	TEG	site fabric 20	cut out A/B/E	1	950	upper & lower surfaces smoothed;fabric type series
05	508	TEG	site fabric 15	flange 7	1	1700	20mm thick
05	508	RBRK	site fabric 14		3	2470	fabric type series;210mm+;50mm thick;corner
05	508	RBRK	site fabric 14		1	290	38mm thick
05	508	IMB	site fabric 16		1	140	
05	508	IMB	site fabric 18		1	130	
05	508	IMB	site fabric 16		2	170	
05	508	IMB	site fabric 16		2	390	
05	508	IMB	site fabric 16		1	100	
05	508	TEG	site fabric 15	flange 39	1	600	
05	508	IMB	site fabric 16		1	150	

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trench	context	cname	fabric	sub type	frags	weight	description
05	508	RBRK	site fabric 19		1	210	
05	508	TEG	site fabric 16	flange 1	1	1150	
05	508	TEG	site fabric 21	flange 1	1	1160	
05	508	TEG	site fabric 15	flange 1/17	1	880	mortar
05	508	TEG	site fabric 15		1	370	signature
05	508	TEG	site fabric 16		2	440	
05	508	TEG	site fabric 16		1	300	corner
05	508	TEG	site fabric 21		4	940	
05	508	TEG	site fabric 16	flange new 41	1	940	
05	508	TEG	site fabric 15		1	580	
05	508	RBRK	site fabric 16		1	1530	corner;200mm+;35mm thick
05	508	TEG	site fabric 20		1	320	
05	508	TEG	site fabric 18	flange	1	320	
05	508	TEG	site fabric 20	flange 1	1	250	
05	508	TEG	site fabric 17	flange 1	1	240	
05	508	TEG	site fabric 20	flange new 41	1	170	
05	508	RTILDISC	various		8	550	
05	508	TEG	site fabric 12		2	1650	signature
05	508	TEG	site fabric 16		2	165	
05	508	IMB	site fabric 21		1	100	
05	508	TEG	site fabric 15		2	640	

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trench	context	cname	fabric	sub type	frags	weight	description
05	508	TEG	site fabric 21		1	170	
05	508	TEG	site fabric 12		1	200	
05	508	IMB	site fabric 20		1	285	
05	508	IMB	site fabric 18		3	210	
05	508	IMB	site fabric 17		3	680	
05	508	IMB	site fabric 17		1	270	
05	508	IMB	site fabric 17		3	710	
05	508	RBRK	site fabric 15		1	1200	50mm thick;160mm+
05	508	TEG	site fabric 15		1	830	corner
05	508	RBRK	site fabric 19		1	600	fabric type sherd
05	508	RBRK	site fabric 15		1	1280	45mm thick;corner
05	508	RBRK	vitriified		1	1050	35mm thick
05	508	TEG	site fabric 16	flange new 41;cut out B	1	760	
05	508	RBRK	site fabric 15		1	780	44mm thick;corner
05	508	TEG	site fabric 20	flange new 41;cut out B	1	1100	
05	u/s	RBRK	site fabric 16	quarter round	1	850	70mm thick;finger marks
05	u/s	RBRK	site fabric 15/21	quarter round	1	2500	complete;300mm diameter;75mm thick;finger marks
05	u/s	RBRK	site fabric 20	quarter round	1	1500	300mm diameter;70mm thick;finger marks
06	600	RBRK		quarter round or semi circle	2	500	
06	600	RBRK		quarter round or semi circle	1	1050	50mm thick;3 incised marks on upper surface
06	600	BOX	site fabric 16		1	150	sharp incised lattice; corner

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trench	context	cname	fabric	sub type	frags	weight	description
06	600	RBRK		quarter round	1	1010	near complete; 280mm diam; 50mm thick
06	600	RBRK		quarter round	1	1000	near complete; 300mm diam; 50mm thick
06	600	RTILDISC			3	20	
06	600	RTIL			1	50	semi vitrified
06	600	RBRK		quarter round or semi circle	1	100	
06	600	RBRK		quarter round or semi circle	1	450	3 finger marks
06	600	RBRK		quarter round or semi circle	1	400	45mm thick
06	600	RBRK		one eighth round	1	3050	?done in sanded mould; very abraded; brush marks on lower surface; 500mm diam; 50mm thick
06	600	RBRK		quarter round	1	2450	near complete; 300mm diam; 80mm thick;finger/pebble marks
06	600	RBRK		quarter round or semi circle	1	650	50mm thick
06	603	TEG	site fabric 15	flange new 41	1	160	smooth under surface; scraped
06	603	TEG	site fabric 19 / 21	cut out B	1	350	edge
06	603	TEG	site fabric 21		1	230	
06	603	RTIL	site fabric 18		1	210	probably TEG;semi vitrified
06	603	IMB	site fabric 19		1	550	corner
06	603	RBRK	site fabric 19		1	260	45mm thick
06	603	RBRK	site fabric 15		1	1150	50mm thick;corner
06	603	RTIL	site fabric 15		3	550	probably TEG
06	603	RTIL	site fabric 15		1	680	probably TEG
06	603	RTIL	site fabric 16		1	320	probably TEG

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trench	context	cname	fabric	sub type	frags	weight	description
06	603	RTIL			2	550	
06	603	TEG	site fabric 15	cut out	1	170	
06	603	TEG	site fabric 14/15	flange new 41	1	600	
06	603	RTIL	site fabric 3/12		1	150	probably TEG
06	603	TEG	site fabric 16	flange new 41	1	200	
06	603	TEG	site fabric 15	flange new 41	1	350	
06	609	IMB			2	150	
06	609	BRKDISC			1	90	
06	609	RTILDISC			6	270	
06	610	TEG		flanges	4	300	very abraded
06	610	TEG		flange new 41	1	220	
06	610	RTILDISC	various		12	590	
06	610	RTIL			7	1720	probably all TEG
06	610	IMB			2	280	
06	610	RBRK			1	600	35mm thick
06	610	RBRK			1	250	38mm thick
06	610	TEG		flange new 41	1	330	very abraded
06	610	RBRKDISC			2	700	
06	610	RBRK			1	390	45mm thick
06	614	RTILDISC			2	270	very abraded
06	614	RTIL			1	270	probably TEG

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trench	context	cname	fabric	sub type	frags	weight	description
06	614	RTIL			1	430	RBRK ?
06	619	RTIL			1	10	very abraded
06	619	IMB			1	30	very abraded
06	620	RTIL			1	20	very abraded
07	704	RTIL			1	100	
07	704	RTILDISC			8	140	very abraded
07	708	TEG	site fabric 18	flange 2;cut out	1	600	corner end
07	708	RBRK	site fabric 21		1	270	very abraded
07	708	RTILDISC			1	10	very abraded
07	708	TEG	site fabric 16		1	120	lighter surfaces
07	708	TEG	vitriified	cut out B	1	60	
07	708	IMB	site fabric 16		1	80	
07	708	RTIL	site fabric 16/18		1	70	vessel/roof furniture ?
07	708	TEG	site fabric 21	flange new 41	1	60	
07	716	RTILDISC			3	180	very abraded
07	716	TEG		cut out	1	330	
07	716	TEG			1	420	
07	718	TEG			2	140	very abraded
07	719	RTILDISC			1	10	very abraded
07	720	RTILDISC			12	1230	very abraded
07	720	IMB	site fabric 16		4	420	

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trench	context	cname	fabric	sub type	frags	weight	description
07	720	IMB	site fabric 17		1	50	
07	720	IMB	site fabric 17		2	470	corner
07	720	IMB	site fabric 5		1	480	corner
07	720	RBRK	site fabric 21		1	270	
07	720	IMB	site fabric 16		2	670	corners
07	720	RTIL		roof furniture	1	160	handmade;? Or tile pot
07	720	TEG			1	630	corner
07	720	RTIL			12	2680	prob all TEG
07	720	TEG	various		2	310	corners
07	720	TEG	various		2	680	
07	720	TEG	vittrified	flange & cut out	1	60	
07	720	TEG		cut out	1	1070	corner
07	720	TEG	site fabric 15	flange new 41	1	980	
07	720	TEG	site fabric 15	flange new 41	1	1050	
07	720	TEG	site fabric 15	flange new 41	1	350	
07	720	TEG	site fabric 15	flange new 41	1	850	
07	720	TEG	site fabric 15	flange 1	1	650	
07	720	RTILDISC			3	50	very abraded
07	720	TEG	various	flanges	2	1640	very abraded
07	727	IMB	vittrified		1	60	
07	727	RTILDISC			5	70	very abraded

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trench	context	cname	fabric	sub type	frags	weight	description
07	740	TEG	site fabric 18		1	190	
07	740	RTIL			1	90	TEG ?
07	740	TEG	vitriified	cut out ?	1	950	
07	740	TEG	site fabric 21	flange 1	1	80	
07	740	TEG	site fabric 19	flange new 41;cut out B	2	850	same tile
07	740	TEG	site fabric 19	cut out	1	350	
07	740	TEG	site fabric 16	cut out	1	270	
07	740	TEG	site fabric 19		1	190	
07	740	TEG	site fabric 19		1	660	
07	740	TEG	site fabric 19		1	870	
07	740	RTIL	site fabric 19		1	210	RBRK ?
07	740	IMB	site fabric 16		1	130	
07	740	TEG	site fabric 16		1	150	
08	804	IMB			1	40	very abraded
08	804	RTILDISC			2	10	very abraded
09	904	TEG	site fabric 6;semi vitriified	flange 1;cut out B	1	400	
09	904	TEG		flanges	2	150	very abraded
09	904	IMB	site fabric 17		1	150	
09	904	RTIL			1	210	probable TEG
09	904	RTILDISC			3	150	very abraded

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trench	context	cname	fabric	sub type	frags	weight	description
09	912	TEG			1	780	2 finger signature
09	912	TEG		cut out B	1	400	
09	912	TEG		flange new 41	1	100	
09	912	IMB			3	330	
09	912	RTILDISC			31	420	very abraded
09	912	TEG		flange 1	1	480	very broad flange
09	912	TEG			4	1120	
09	912	BOX			1	40	combed
09	912	RTIL			11	1780	most very abraded
09	912	TEG		flange new 41	1	750	
10	1003	TEG		flange	1	120	
10	1003	RTIL	various		4	350	35-50mm thick;? RBRK/thick TEG
10	1003	TEG	various		5	950	
10	1003	RTILDISC	various		19	1000	very abraded
10	1003	IMB	site fabric 18		1	240	
10	1003	TEG		flange new 41	1	200	very abraded
10	1003	RBRK			1	460	very abraded;48mm thick
10	1003	RTILDISC			1	80	very abraded
10	1003	TEG		flange 1	1	250	
10	1004	IMB			3	440	
10	1004	TEG		flange 7	2	350	same tile

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trench	context	cname	fabric	sub type	frags	weight	description
10	1004	RTILDISC			6	410	very abraded
10	1004	TEG	various		5	1750	very abraded
10	1006	RTILDISC	various		37	1760	very abraded
10	1006	TEG	various		16	2950	very abraded
10	1006	TEG	site fabric 23	cut out B/E	1	430	very thick
10	1006	TEG	site fabric 16/18		1	430	finger swirled signature
10	1006	TEG	various	flanges	4	240	
10	1006	RTIL	site fabric 21		1	200	TEG ?
10	1006	RTIL	site fabric 22		1	200	35mm thick;? TEG
10	1006	RBRK	site fabric 16	quarter round or semi circle	1	250	
10	1006	IMB	site fabric 15		1	240	
10	1006	IMB	site fabric 17		1	230	
10	1006	IMB	site fabric 17		1	110	
10	1006	IMB	site fabric 16		1	90	
10	1006	RTIL	site fabric 16		1	80	soot
10	1006	IMB	site fabric 16		1	180	corner
10	1006	TEG	site fabric 23 vitrified	flange 24;cut out	1	1120	
10	1006	RTIL	various		4	750	RBRK ?
10	1006	TEG	site fabric 23	flange 10;cut out B	1	250	
10	1006	RTIL	site fabric 16		1	60	thin tile;BOX/TEG

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trench	context	cname	fabric	sub type	frags	weight	description
10	1006	TEG	site fabric 23	flange	1	270	
10	1006	TEG	site fabric 15	flange new 41	1	300	
10	1006	TEG	site fabric 16	flange new 41	1	130	
10	1006	TEG	site fabric 16	flange new 41	1	240	
10	1006	TEG	site fabric 21 vitrified	flange	1	220	
10	1010	IMB	site fabric 22		1	210	
10	1010	RTIL	site fabric 16		1	140	nail hole;thin walled;box/wall tile
10	1010	RTIL	site fabric 16		2	340	thin walled;box/wall tile
10	1010	RTIL	site fabric 15		2	290	thin walled;box/wall tile
10	1010	RTIL	vitrified		1	60	very thin
10	1010	TEG	site fabric 16	flange new 41	1	380	
10	1010	TEG			24	6300	very scrappy;most very abraded
10	1010	TEG	site fabric 16	flange 1	1	840	
10	1010	RTILDISC			42	2610	very scrappy;most very abraded
10	1010	IMB	site fabric 18		1	40	
10	1010	TEG		flanges	5	450	very abraded
10	1010	TEG	vitrified	cut out	1	450	corner
10	1010	TEG	vitrified	flange 9 ?	1	310	
10	1010	TEG	site fabric 16	flange 26	1	20	
10	1010	TEG	site fabric 14	flange 2	1	330	very broad flange

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trench	context	cname	fabric	sub type	frags	weight	description
10	1010	TEG	site fabric 19	flange new 41	1	260	
10	1010	TEG	site fabric 16	flange 1	1	180	
10	1010	TEG	site fabric 14	flange new 41;cut out	1	300	
10	1010	IMB	site fabric 17		4	250	
10	1010	TEG	site fabric 16	flange 10	1	380	
10	1010	IMB	site fabric 17 vitrified		2	200	
10	1010	TEG	site fabric 18	flange 7;cut out C	1	380	
10	1010	TEG	site fabric 16	flange 1;cut out B	1	250	
10	1010	TEG	site fabric 19	flange 1	1	320	very abraded
10	1010	TEG	site fabric 16	flange 2	1	180	
10	1010	TEG	site fabric 16	flange 1	1	300	
10	1010	TEG	site fabric 16/18	flange 20	1	100	
10	1010	TEG	site fabric 19	flange new 41	1	120	
10	1010	TEG	site fabric 16	flange new 41	1	150	
10	1010	IMB	site fabric 12		1	250	
12	1203	RBRK			1	280	34mm thick
13	1304	RTILDISC			2	40	very abraded
13	1304	RTIL			1	150	very abraded
13	1307	TEG		flange 1	1	1420	
13	1307	IMB			1	70	

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trench	context	cname	fabric	sub type	frags	weight	description
13	1307	TEG		flanges	2	170	very abraded
13	1307	RTILDISC			1	20	very abraded
13	1309	RTILDISC			3	20	very abraded
13	1309	RBRK			1	1230	50mm thick
13	1314	RBRK			1	40	
13	1328	RTILDISC			3	140	very abraded
13	1328	RTIL			1	120	very abraded
13	1328	RTIL			1	170	reworked to a disc c.70mm diam
14	1401	RTILDISC			1	40	very abraded
15	1505	RTILDISC			4	220	very abraded
15	1505	TEG		flange new 41	1	430	
16	1603	TEG		flange	1	20	very abraded
16	1603	RTIL			3	600	prob TEG
16	1609	RTIL			2	270	prob TEG;very abraded
16	1609	RTILDISC			3	160	very abraded

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APPENDIX 7: Human bone report

Allenby Road Industrial Estate Roads, Lincoln (NEQ 04)**Human Bone**

By Jennifer Kitch

Introduction

A total of 17 fragments of human bone were recovered from unstratified contexts during the evaluation excavation at the North East Quadrant Access.

Results

The unstratified remains are summaries in table 1.

Table 1. Summary of Identified Human Bone and General Condition

Context	Element	Side	Age	Description	Condition
U/S	Tibia	Left	Adult	Proximal part of the midshaft, broken into three fragments.	Moderate - Poor
U/S	Tibia	Right	Adult	Proximal part of the midshaft, broken into two fragments.	Moderate - Poor
U/S	Fibula	Left	Adult	Proximal part of the midshaft, broken into two fragments.	Moderate - Poor
U/S	Clavicle	Right	Adult	Distal half of the midshaft, fairly robust	Moderate - Poor
U/S	Humerus	Right	Adult	Diaphysis only, fairly robust with pronounced muscle attachments	Moderate - Poor
U/S	Ulna	Right	Adult	Proximal part of the midshaft only, olecranon missing. Fairly robust	Moderate - Poor
U/S	Radius	Right	Adult	Midshaft, broken into three fragments, fairly robust	Moderate - Poor
U/S	Scapula	Right	Adult	Fragment of coracoid process	Moderate - Poor
U/S	Metacarpal	Unsided	Adult	Midshaft fragments of two metacarpals	Moderate - Poor
U/S	1st Metacarpal	Unsided	Adult	Midshaft fragments of the first metacarpal	Moderate - Poor

Condition

The condition of the bone is moderate to poor. Although several of the bones display post depositional breakage the bone integrity is fairly good. Much of the outer surface of the bones has degraded to some extent, which may have obscured any observable pathologies.

Discussion

The remains are all from skeletally mature individual/s. The skeletal elements represented, equate to a minimum of one individual.

Due to the general robust morphology of the bones it is likely that these remains could have belonged to a single individual. The robust nature, especially of the upper limb bones, may suggest that the individual was male.

APPENDIX 8: Animal bone report

Allenby Road Industrial Estate Roads, Lincoln (NEQ 04)**Animal Bone**

By Jennifer Kitch

Introduction

This report encompasses the animal bone from the Evaluation Excavation. A total number of 883 (8837g) fragments were recovered.

Methodology

Identification of the bone was undertaken at PreConstruct Archeology (Lincoln) with full use of a reference collection and published guides. Each fragment was counted and weighed. Where possible the bones were identified to species, element, side and zone (Serjeantson 1996). Ageing criteria, butchery marks, pathologies, gnawing and burning were noted when present. Undiagnostic bones, vertebra and ribs were recorded as small (small mammal size), medium (sheep size) or large (cattle size). The separation of sheep and goat bones was done using the criteria of Boessneck (1969) and Prummel and Frisch (1986). Where distinctions could not be made, the bone was recorded as sheep/goat (S/G).

Tooth eruption and wear stages were measured using a combination of Halstead (1985) and Grant (1982). Measurements of fully fused, adult, bones were taken according to the methods of von den Driesch (1976).

The bone condition was recorded in accordance with criteria outlined by Lyman (1996). Grade 0 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

Results

The bone was in moderate condition with a general average of grades 3 within the Lyman criteria. Due to the condition of the bone, recording of butchery, pathology, gnawing and the number of measurable elements are limited.

Table 1. Species Identified, summarised by Trench

Taxon	Number of Fragments, by Trench											Total
	1	2	4	5	6	7	9	10	13	14	15	
Horse					1	14						15
Cattle			8	2	4	24		1	1	1		41
Sheep/Goat			5	1	1	23						30
Sheep			1									1
Pig			2	1	1	4						8
Dog				1	1	1						3
Roe Deer						1						1
Rabbit	5											5
Corvid					1							1
Large Mammal		1	16	4	4	396	1	2	15	1	1	441
Medium Mammal			19	1	6	14			1	1		42
Small Mammal						1						1
Unidentified			11	10	1	263		1	8			294
Grand Total	5	1	62	20	20	741	1	4	25	3	1	883

Trench 1.

A complete rabbit skull with articulating mandibles, atlas and axis was recovered from ditch [114]. The condition of the bone was fairly pristine. Suggesting that the remains may be fairly recent, in relation to the remaining assemblage. Due to the burrowing nature of these animals, it cannot be ruled out that these remains are intrusive.

Trench 2.

A single fragment of large mammal sized rib was recovered from ditch [203].

Trench 4.

Trench produced a small assemblage of 62 fragments of animal bone, recovered from 4 features dated from the 1st–2nd century. The remains represent the main domesticates, cattle, sheep/goat and pig. A single fragment has been positively identified as sheep. The small assemblage is a mix of most skeletal elements including loose teeth. The remains appear to be domestic waste containing a mix of butchery and food waste.

Trench 5.

A small assemblage of animal bone was recovered from the topsoil and three features from within trench 5. A single dog metatarsal from an animal below 8 months of age and two unidentifiable fragments were recovered from ditch [506]. A large mammal size fragment of vertebra and skull were recovered from ditch [510]. A sheep/goat tooth and a cattle metapodial and loose tooth were recovered from ditch [503], along with a large mammal sized long bone and some unidentifiable fragments. A Pig tooth and fragments of medium and large long bones were recovered from the trench topsoil (500). Little further information can be gained save the presence of the species.

Trench 6.

The animal bone assemblage from trench 6 was recovered predominantly from ditch [607]. The remains from ditch [607] incorporates the main domesticates, and single fragments of horse, dog and corvid (possibly rook) bones. No evidence of butchery was noted on any of the remains. A fragment of pig scapula displayed evidence of carnivore gnawing, suggesting that the remains were left open to scavengers after or as part of the disposal process. Further to this assemblage a fragment of medium mammal sized skull, large mammal sized long bone fragment and a piece of cattle radius was recovered from the trench topsoil (600).

Trench 7.

The largest assemblage of animal bone from the evaluation excavation was recovered from trench 7.

Pit [711] contains a substantial number of large mammal size ribs and vertebra from a minimum of two individuals. A single rib displayed evidence of butchery, cut marks consistent with meat removal. In addition, a horse mandible from an animal aged 7-8.75 years of age, a scapula and loose teeth were recovered from the assemblage, along with sheep/goat mandibles and loose teeth, and several meat bearing cattle and pig bones. The assemblage from this pit appears to be predominantly primary butchery waste, with a small amount of food waste mixed in. A single dog tooth was also recovered from the assemblage. A shed roe deer antler was recovered from ditch [739]. The antler being shed may have been transported some distance before deposition and shows no evidence of being worked. Again ditch [739] contains a majority of large mammal sized rib, vertebra and skull remains. Three loose horse teeth, a cattle tooth and atlas and a sheep/goat tibia were the only remains identifiable further to species.

An articulating rear limb of a horse was recovered from ditch [721] measurements from the tibia gave a withers height of 1.36m suggesting an animal of pony size. Two further horse left femurs were recovered from ditches [722] and [738].

Ditch [721], in addition to the horse remains, contains a mix of sheep/goat and cattle remains and rib, vertebra and long bone fragments from large and medium sized animals (probably sheep/goat and cattle). The remains are predominantly skeletal elements that would be considered as butchery waste, although not exclusively, occasional meat bearing bones are included within the assemblage. Two cases of butchery were noted within the assemblage, both consistent with disarticulation/ jointing of a carcass. Several instances of carnivore and rodent gnawing were noted on the bones suggesting that the remains were left open to scavengers as part of or after the deposition process.

The construction cuts [730], [732] and [733] produced small assemblages of sheep/goat limb bones, a cattle mandible, astragalus, large mammal sized rib and large and medium sized mammal long bone fragments.

Trench 9.

A single fragment of large mammal sized vertebra was recovered from ditch [903].

Trench 10.

A single fragment of large mammal sized rib was recovered from pit [1007]. A fragment of a large mammal sized rib; a cattle femur from an animal aged below 42 months of age and an unidentifiable fragment was recovered from pit [1009].

Trench 13.

A fragment of medium sized mammal long bone and two fragments of large mammal sized long bone were recovered from ditch [1329]. A fragment of cattle tooth was recovered from pit [1303]. A total of 9 large mammal sized rib fragments and 3 large mammal sized vertebra fragments, along with 8 unidentifiable fragments were recovered from ditch [1310].

Trench 14.

A cattle maxillary tooth and a large mammal sized rib were recovered from the levelling layer (1401). Additionally a single fragment of medium mammal sized long bone was recovered from ditch [1409].

Trench 15.

A single fragment of large mammal sized rib was recovered from ditch [1506].

Interpretation

Most of the trenches yielded little amounts of animal bone. In these trenches little information can be gained save the presence of the species. The most abundant trenches were 4, 6 and 7. Cattle are the most predominant species within these assemblages followed by sheep/goat, horse then pig. There is an emphasis on large mammal sized ribs and vertebrae within the assemblage, especially within trench 7. This may suggest that the area was used for a specific activity such as primary butchery, where the main cuts of meat would have been taken elsewhere for processing and consumption.

Cattle, horse or large mammal sized remains dominate the assemblage, which may be a result of preservation bias. Pig remains occur in very low numbers, which may support this poor preservation theory, the animals are often slaughtered young and therefore do not survive well in poor conditions. Very little aging information was gained from the assemblage, providing little information towards the husbandry practices utilised within the area.

Any further excavation is liable to yield much more bone of a moderate condition, with very good potential for establishing information on animal husbandry and utilisation on this site.

Recommendations

In the event of further excavation it is recommended that environmental sampling should be considered. The recovery of smaller bones such as small mammal, bird and fish should contribute to our understanding of the local environment and the diversity of the diet of the inhabitants of the site.

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Rec Number	Context Number	Sample Number	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	P	D	Path	Butch	Burnt	Gnaw	Fresh Break	Associated	Measureable	Tooth Wear	Surface	Cond	No.	(g)	Notes
187	113	0	Rabbit	Atlas	B	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	N	N	X	2	1	0	
186	113	0	Rabbit	Axis	B	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	N	N	X	2	1	0	
185	113	0	Rabbit	Mandible	L	Y	Y	Y	Y	Y	Y	Y	Y	X	X	N	N	N	N	N	Y	N	N	R	2	1	1	
183	113	0	Rabbit	Skull	B	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	Y	N	X	2	1	7	
184	113	0	Rabbit	Mandible	R	Y	Y	Y	Y	Y	Y	Y	Y	X	X	N	N	N	N	N	Y	N	N	X	3	1	1	
234	202	0	Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	26	
223	403	0	Large	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	4	27	
222	403	0	Cattle	Humerus	L	N	N	N	N	Y	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	20	
224	403	0	Cattle	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	15	Broken Upper Molar
225	403	0	Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	5	8	
226	403	0	Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	3	3	Burnt grey/black
198	404	0	Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	4	2	burnt white/grey
194	404	0	Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	3	
199	404	0	Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	2	3	Partially burnt black
197	404	0	Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	2	3	
196	404	0	Cattle	Metapodial	X	N	N	N	N	N	N	N	N	X	F	N	N	N	N	N	N	N	N	X	3	1	6	Single condyle
195	404	0	Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	Y	Y	N	N	N	N	N	X	3	1	12	Single cut below neck of blade, partially burnt black proximal end
201	404	0	Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	2	1	0	Burnt white
151	404	0	S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	4	Upper M3
148	404	0	Sheep	Mc	R	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	Y	N	R	3	1	21	
157	404	0	Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	8	
156	404	0	Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	3	3	Burnt grey/white
155	404	0	Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	X	3	2	3	Burnt brown/black
149	404	0	Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	5	1	4	

154	404	0 Pig	Tooth	L	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	X	2	1	1	Fragment of male canine		
150	404	0 Cattle	Tooth	R	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	6	Upper PM	
153	404	0 Cattle	Tooth	L	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	1	Lower dpm3	
152	404	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	3	1	1	Lower M1=k
200	404	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	16		
205	405	0 Unid	Unid	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	4		
204	405	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	52		
206	405	0 Pig	Scapula	R	N	N	Y	Y	Y	N	N	N	X	X	N	N	N	N	N	N	N	N	N	R	3	1	10		
235	408	0 Cattle	Innom	R	N	N	Y	Y	Y	N	Y	N	F	X	N	N	N	N	N	N	N	N	N	X	3	1	51	Acetabulum	
236	408	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	Y	N	N	Y	N	N	N	X	3	1	6	Cut on medial surface of blade		
237	408	0 S/G	Tibia	L	N	Y	N	N	N	N	N	N	F	X	N	N	N	N	N	N	N	N	N	X	3	1	4		
238	408	0 Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	0		
9	415	0 Cattle	Metapodial	R	N	N	N	N	N	N	Y	Y	X	F	N	N	N	N	N	N	N	N	N	X	3	1	20		
11	415	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	4	10		
10	415	0 S/G	Humerus	L	N	N	N	N	N	Y	N	N	X	X	N	N	N	N	N	N	N	N	N	E	3	1	4	Encrusted with deposit	
12	415	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	Y	N	N	N	N	N	N	X	3	1	3	Burnt black	
8	415	0 Cattle	Scapula	R	Y	Y	Y	Y	Y	Y	N	N	F	X	N	Y	N	N	Y	N	N	N	R	3	1	109	6 frag refit, 2 chops in anterior of articular surface, Spinal process removed, 3 chops into blade		
13	415	0 Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	5	3		
14	415	0 S/G	Tooth	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	2	1	1	Broken lower molar	
15	415	0 Large	Skull	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	4	1	1		
189	500	0 Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	1		
188	500	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	N	X	3	1	20		

131	712	0 Pig	Humerus	R	N	N	N	N	N	N	N	Y	X	U	N	N	N	N	N	N	N	X	3	1	2		
123	712	0 Horse	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	3 Lower male canine	
108	712	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	Y	X	2	1	3 Lower M2=d	
100	712	0 Horse	Scapula	L	Y	N	Y	Y	N	Y	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	117	
101	712	0 Cattle	Scapula	R	N	Y	N	Y	N	Y	N	N	X	X	N	N	N	N	Y	N	N	N	R	3	1	32	
102	712	0 Cattle	Nav-Cuboid	L	Y	Y	Y	Y	Y	Y	Y	Y	X	X	N	N	N	N	N	N	N	N	X	3	1	27	
103	712	0 S/G	Mandible	R	N	N	N	N	Y	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	3	1	11
104	712	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	3	1	2 Lower M1=h
105	712	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	4 Lower M2=e
117	712	0 Large	Thoracic	B	N	N	N	N	N	N	N	N	U	U	N	N	N	N	N	N	N	N	X	3	6	182	
107	712	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	2 Lower M1=g
86	712	0 Cattle	Atlas	B	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	N	N	N	X	3	1	108
109	712	0 S/G	Mandible	R	N	Y	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	R	2	1	2
110	712	0 Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	35	141
111	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	N	X	3	1	66
112	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	F	U	N	N	N	N	N	N	N	N	N	X	3	1	70
113	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	V	V	N	N	N	N	N	N	N	N	N	X	2	1	74
114	712	0 Large	Lumbar	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	5	73
106	712	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	3 Lower M3=U
79	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	U	V	N	N	N	N	N	N	N	N	N	X	3	1	75
88	712	0 Pig	Scapula	L	Y	Y	Y	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	R	3	1	18
89	712	0 Cattle	Innom	L	N	Y	Y	N	N	N	N	N	F	X	N	N	N	N	Y	N	N	N	N	X	3	1	33
90	712	0 Horse	Mandible	R	N	Y	Y	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	N	X	3	1	121 years 58mm= 7-8.75
91	712	0 Dog	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	1	1 Lower PM
92	712	0 S/G	Mandible	R	N	Y	Y	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	Y	X	3	1	6
93	712	0 Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	113	82
94	712	0 Large	Skull	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	10	35
76	712	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	52	297
132	712	0 Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	2	21
78	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	V	V	N	N	N	N	N	N	N	N	N	X	3	1	74
133	712	0 Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	3	19
80	712	0 Large	Thoracic	B	N	N	N	N	N	N	N	N	U	U	N	N	N	N	N	N	N	N	N	X	3	2	91
81	712	0 Large	Thoracic	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	N	X	2	1	38
98	712	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	X	3	86	205

95	712	0 Unid	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	144	150	
96	712	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	27	398	
97	712	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	60	327	
99	712	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	Y	N	N	N	N	N	N	N	3	1	1	5 cuts on medial surface of blade
85	712	0 Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	20	87	
84	712	0 Cattle	Axis	B	Y	Y	N	N	Y	Y	Y	Y	F	U	N	N	N	N	N	N	N	N	N	3	1	110	
87	712	0 Cattle	Scapula	R	Y	Y	N	Y	Y	Y	N	N	F	X	N	N	N	N	N	Y	N	N	N	3	1	110	
77	712	0 Large	Cervical	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	N	3	2	134	
82	712	0 Large	Thoracic	B	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	1	40	
83	712	0 Cattle	Axis	B	Y	Y	Y	Y	N	Y	Y	Y	F	U	N	N	N	N	N	N	N	N	N	3	1	80	
38	716	0 S/G	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	0	Lower PM
39	716	0 Cattle	Mt	R	Y	Y	Y	Y	Y	Y	N	N	F	X	N	N	N	N	N	N	N	N	N	3	1	78	
37	716	0 Medium	Mandible	X	N	Y	Y	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	2	1	1	No teeth in occlusion
180	718	0 Pig	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	0	Broken lower male canine
25	719	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	4	1	2	Upper M3
24	719	0 S/G	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	4	Upper M3
161	719	0 S/G	Mandible	R	N	Y	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	2	1	4	
23	719	0 S/G	Mandible	L	N	Y	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	1	2	PM3 only in occlusion
21	719	0 Cattle	Femur	R	Y	N	Y	Y	Y	Y	N	N	F	U	N	N	N	N	N	Y	N	N	N	2	1	226	Carnivore gnawing on proximal epiphysis, destroyed/removed trochanter
20	719	0 Horse	Femur	R	N	N	Y	Y	Y	Y	N	N	U	X	N	N	N	N	N	N	N	N	N	2	1	208	
69	719	0 Medium	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	4	7	
159	719	0 Large	Cervical	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	1	24	
62	719	0 Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	N	2	1	6	
63	719	0 Horse	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	6	Lower Incisor
64	719	0 S/G	Mc	R	Y	Y	Y	Y	Y	Y	N	N	F	X	N	N	N	N	N	N	N	N	N	2	1	11	
65	719	0 S/G	Maxilla	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	22	
66	719	0 Cattle	Mandible	R	N	N	Y	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	47	
61	719	0 Cattle	Femur	R	N	N	N	N	N	N	Y	Y	X	U	N	N	N	N	N	Y	N	N	N	2	1	69	

68	719	0 Cattle	Tooth	R	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	32	Upper M3	
60	719	0 Large	Rib	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	4	27		
70	719	0 Medium	Long Bone	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	Y	N	N	N	N	X	2	1	4	Carnivore gnawing on the midshaft	
71	719	0 S/G	Tooth	L	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	Y	X	2	1	4	Lower M3=g
72	719	0 Medium	Mandible	X	N	N	Y	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	1	2	No teeth in occlusion	
73	719	0 Large	Skull-zygomatic	R	N	N	N	N	N	N	N	N	N	X	X	N	Y	N	N	N	N	N	N	N	2	1	6	Two cuts on the caudal edge.	
74	719	0 Cattle	Patella	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	Y	N	N	N	N	X	4	1	16	Carnivore gnawing on the external surfaces.	
75	719	0 Large	Innom	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	5	61		
67	719	0 Medium	Lumbar	B	N	N	N	N	N	N	N	N	N	X	X	N	N	N	Y	N	N	N	N	X	3	1	7	Rodent gnawing on the dorsal surface	
163	719	0 Medium	Skull	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	4	1	2		
6	719	0 Horse	Innom	R	N	Y	Y	Y	N	N	N	N	N	F	X	N	N	N	N	N	N	N	N	N	3	1	145		
5	719	0 Horse	Femur	R	N	N	N	N	N	N	N	Y	Y	X	F	N	N	N	N	N	N	N	Y	Y	3	1	104		
4	719	0 Horse	Tibia	R	Y	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	N	N	Y	Y	3	1	232			
158	719	0 Large	Lumbar	B	N	N	N	N	N	N	N	N	N	U	U	N	N	N	N	N	N	N	N	N	3	3	21		
22	719	0 Large	Rib	X	N	N	N	N	N	N	N	N	N	X	X	N	Y	N	N	N	N	N	N	N	2	1	3	Two chops on medial side of blade	
160	719	0 Large	Long Bone	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	1	6		
162	719	0 Medium	Long Bone	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	2	2	3		
59	719	0 Large	Rib	X	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	4	36		
7	723	0 Horse	Femur	L	N	N	Y	Y	Y	Y	Y	Y	Y	X	F	N	N	N	N	Y	N	N	N	X	3	1	181	3 frags refit	
165	727	0 Large	Cervical	B	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	N	3	1	54		
18	737	0 Cattle	Tibia	R	N	N	Y	Y	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	84		
192	737	0 Cattle	Metapodial	X	N	N	N	N	N	N	N	N	N	X	F	N	N	N	N	N	N	N	N	N	3	1	13	Single condyle	
193	737	0 Cattle	Skull	R	N	N	N	N	N	N	N	N	N	X	X	N	N	N	N	Y	N	N	N	X	4	1	93	Fragmentary + fragment of horncore	
19	737	0 Cattle	Mc	L	Y	Y	Y	Y	Y	Y	N	N	N	F	X	N	N	N	N	N	N	N	N	Y	3	1	87		

16	737	0Horse	Femur	L	Y	N	Y	Y	Y	Y	Y	Y	F	F	N	N	N	N	Y	N	Y	N	X	3	1	326	
17	737	0Cattle	Mandible	L	Y	Y	Y	Y	Y	Y	N	N	X	X	N	N	N	N	Y	N	N	N	X	3	1	221	
137	740	0Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	26	
53	740	0Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	4	18	
48	740	0Horse	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	X	3	1	20	Lower PM3/4, 47mm=8.25-10.25 years
145	740	0S/G	Tibia	L	N	N	Y	Y	Y	Y	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	1	Juv
57	740	0Large	Skull	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	3	15	
56	740	0Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	1	
55	740	0Cattle	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	2	Upper PM
143	740	0Large	Vertebra	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	2	7	
54	740	0Large	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	2	
142	740	0Large	Skull- zygomatic	L	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	2	1	5	
52	740	0Large	Caudal	B	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	7	
51	740	0Large	Lumbar	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	3	9	
46	740	0Large	Thoracic	B	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	9	Spinous process only
47	740	0Horse	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	Y	N	N	X	3	1	23	Lower M1,64mm = 5.25-7.5 years
50	740	0Large	Thoracic	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	3	21	
49	740	0Horse	Tooth	R	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	20	Lower PM3/4, 50mm=8.25-10.25 years
135	740	0Large	Lumbar	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	X	3	1	33	
134	740	0Large	Thoracic	B	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	49	
40	740	0Large	Thoracic	B	N	N	N	N	N	N	N	N	V	V	N	N	N	N	N	Y	N	N	X	3	1	132	
41	740	0Large	Thoracic	B	N	N	N	N	N	N	N	N	F	U	N	N	N	N	N	N	N	N	X	2	1	84	
42	740	0Large	Cervical	B	N	N	N	N	N	N	N	N	V	V	N	N	N	N	N	N	N	N	X	2	1	92	
43	740	0Large	Cervical	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	X	3	1	54	
144	740	0Large	Long Bone	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	4	
45	740	0Large	Thoracic	B	N	N	N	N	N	N	N	N	V	U	N	N	N	N	N	N	N	N	X	3	1	23	
58	740	0Large	Unid	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	3	27	
136	740	0Large	Lumbar	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	4	1	19	
138	740	0Small	Rib	X	N	N	N	N	N	N	N	N	X	X	N	N	N	N	N	N	N	N	X	3	1	1	Porous, Juv

