

**ARCHAEOLOGICAL WATCHING BRIEF,  
MALTBY-LE-MARSH TO MANBY  
REPLACEMENT WATER MAIN**

North-west end of route NGR: TF 4120 8705

South-east end of route NGR: TF 4710 8265

SITE CODE: MMP03

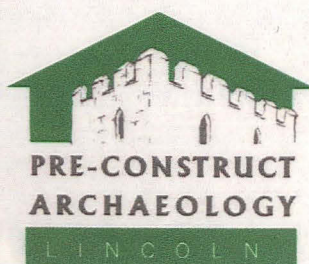
LCNCC ACC. NO: 2004.33

Report prepared for Anglian Water Services Ltd.,

by

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EVENT: L15902

INTERVENTION: L19976

EXCAVATION: L19977

PRN: 42821 Medieval

45873 Roman

45874 "

45875 Undated

45876 Roman 1

45877 Prehistoric 3

45878 Medieval 3

45879 Medieval 3

45880 Prehistoric 3

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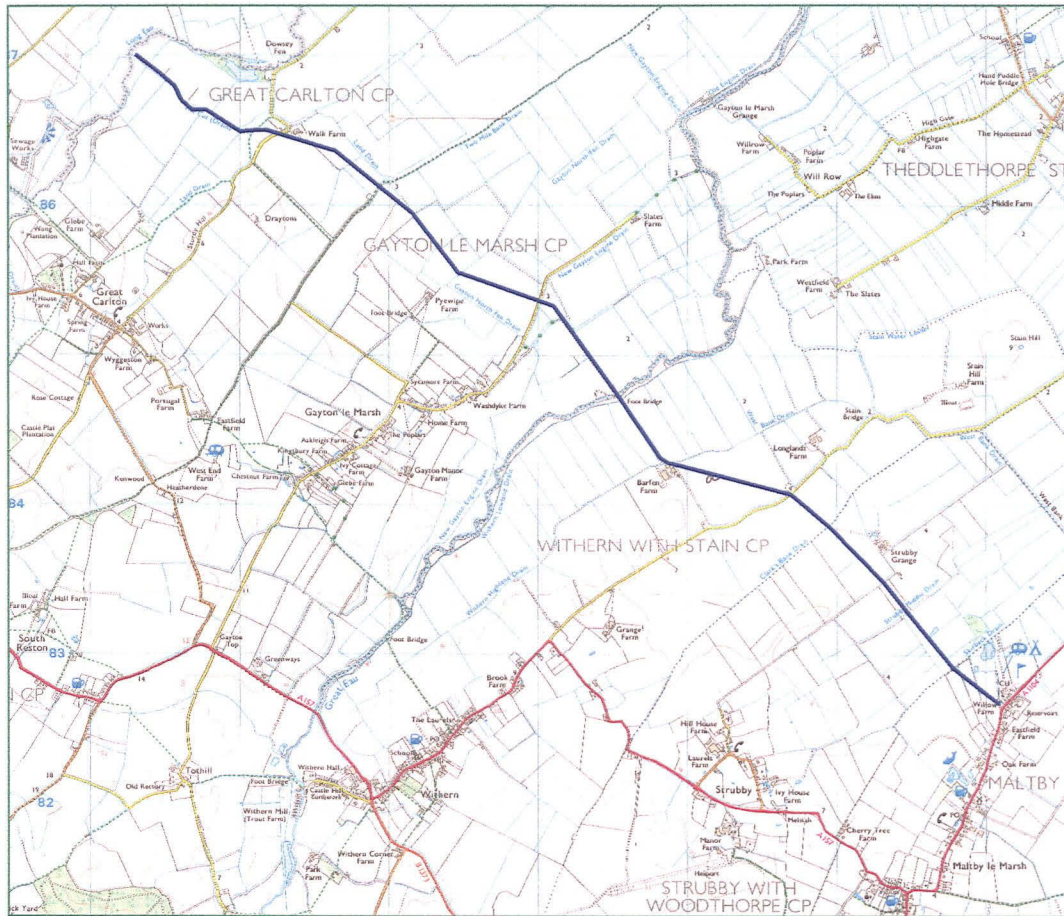
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### *Summary*

- *An archaeological watching brief was undertaken during the groundworks associated with a water pipeline replacement scheme between the villages of Maltby-le-Marsh and Manby in Lincolnshire.*
- *The pipeline route extends through an area of low-lying marshland, which has been subjected to seasonal flooding in the past, and was therefore often unsuitable for sustained human occupation. Despite this seemingly harsh environment, scatters of prehistoric flint implements and Romano-British pottery have been identified close to areas of the pipeline route, as well as earthworks indicative of medieval occupation of the area.*
- *A preceding fieldwalking survey yielded small quantities of pottery and tile, and a geophysical survey exposed several anomalies indicative of past settlement activity, particularly in Fields 6 and 13.*
- *In Fields 6 and 13, dense concentrations of cut archaeological features were investigated. These features appear to have been associated with low-status domestic occupation of the area between the 2<sup>nd</sup> and 4<sup>th</sup> centuries AD.*



**Fig. 1:** General site location showing the route of the pipeline in blue (scale 1:50,000)  
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## 1.0 Introduction

Pre-Construct Archaeology (Lincoln) was commissioned by Anglian Water Services Ltd. to undertake a three-phase programme of archaeological investigation along the route of a replacement water main between the villages of Maltby-le-Marsh and Manby, Lincolnshire, entailing fieldwalking, geophysical survey and a subsequent intensive watching brief. This report details the results of the latter.

The fieldwork and reporting methodologies are consistent with the requirements of the Senior Built Environment Officer of Lincolnshire County Council and they conform with current national and local guidelines, as set out in *Standards and guidance for archaeological watching briefs* (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 pipeline is situated in the Lincolnshire Marsh, running from Maltby le Marsh (approximately 4km to the south-west of Mablethorpe) to Manby (c.0.5km to the south of Barrow Upon Humber). The route runs broadly north-west to south-east for c. 8km, beginning at the Long Eau, 1.5km east of Manby (NGR TF 4120 8705). The pipeline passes through predominantly agricultural land, crossing a number of open drains (the largest being the Great Eau) and terminates to the immediate west of the A1104, at the northern end of Maltby le Marsh (NGR TF 4710 8265).

The route broadly follows the meandering geological boundary between the clay deposits of glacial till on the west, which are overlain to the east by the Terrington Beds; salt marsh and tidal creek deposits laid down by repeated episodes of marine inundation. The underlying solid geology consists of Upper Cretaceous Welton Chalk (British Geological Survey, 1996, 1999).

The route is predominantly flat and low-lying, being between approximately 4 and 5m above OD.

## 3.0 Planning background

Anglian Water Services is a statutory body and as such is exempt from archaeological planning restraints as defined by PPG16. However, the body operates in accordance with its own code of conduct, which has necessitated the undertaking of a programme of archaeological investigation. The Senior Built Environment Officer of Lincolnshire County Council recommended a programme of fieldwalking (Brett, 2003) and geophysical survey (Masters and Bunn, 2003) to identify possible archaeological

remains along the route, followed by a watching brief during the groundworks, the results of which are the subject of this report.

#### 4.0 Archaeological and historical background

The archaeology of the route is influenced by the underlying geology. It runs along the boundary of two distinct geological zones, the "Middlemarsh" to the west and the "Outmarsh" to the east. The former is made up of glacial till laid down at the end of the Devensian glaciation, and represents dryer land more suitable for sustained settlement. The latter represents a zone which has been subject to a series of marine and estuarine depositional events, which only became more suitable for permanent settlement after the construction of sea defences and land reclamation during the medieval period.

There is relatively little known archaeological activity along the route, although this may be due partly to a lack of fieldwork in the surrounding area. A Neolithic stone axe discovered in the field to the east of Strubby Grange represents the earliest evidence of human activity in the vicinity of the pipeline route.

Fieldwork carried out as part of the Humber Wetlands Project has identified a number of prehistoric and later finds close to the pipeline route, south of Barfen Farm. Two flint scatters are recorded at TF 449 834 and 455 834, a sherd of medieval Humber ware was found at TF 455 834, and a rim-sherd of Romano-British greyware from TF 452 834 (Fenwick, Chapman et al, 2001).

The Domesday Book provides an insight into the settlement pattern at the beginning of the medieval period. Of the villages near to the pipeline route, Maltby, Manby, Strubby and Withern all appear in the Survey, suggesting an origin in the late Saxon period. The principal landowners were the King, Count Alan, Gilbert of Ghent, Hugh son of Baldric, and Jocelyn son of Lambert (Morgan and Thorne, 1986).

There is more abundant evidence of activity from the early medieval period onwards, due largely to an improved system of drainage and coastal defences; reducing the risks from flooding. A number of areas of earthworks indicative of medieval ridge and furrow cultivation have been highlighted, namely in the field to the east of Pyewipe Farm and to the west of the south end of the route at Willow Farm. There is a scatter of medieval pottery from the field to the north of Walk Farm, as well as medieval house platforms, an enclosure and associated ridge and furrow field systems to the east of it. Medieval settlement is also recorded south of Longlands Farm. The pipeline lies adjacent to a further known area of medieval settlement at Maltby le Marsh. Also at Maltby-le-Marsh, the religious order of the Knights Hospitallers established one of their first estates, probably during the reign of King Stephen (1135-54) (Owen, 1971).

In 2003, a fieldwalking survey was carried out along the proposed pipeline route. This recovered few finds, although a small scatter of brick and tile was recovered from Field 8, two Romano-British pottery sherds were recovered from Field 13, and Field 23 contained a small quantity of brick and tile, including one piece of Romano-British roof tile (Brett, 2003). Subsequently, a geophysical survey was carried out. A limited number of anomalies were detected, some of which were interpreted as disturbance

from modern field boundaries or buried land drains. However, a series of linear and rectilinear anomalies were detected in Field 6 near Walk Farm, interpreted as possible Iron Age or Romano-British enclosures, and a linear feature was detected at the south-east end of Field 13, extending from the Great Eau.

## 5.0 Methodology

The programme of works required the stripping of an easement prior to the excavation of the pipe trench for the replacement water main. Initial soil stripping was carried out using a 360° tracked excavator, fitted with a smooth ditching blade. The easement was subsequently levelled with a bulldozer. Excavations removed topsoil and underlying deposits to a depth of approximately 0.3m. These groundworks were monitored at all times by one experienced archaeologist.

Where required, limited excavation by hand was carried out to establish the profile, orientation, date and function of exposed archaeological features. These features were accurately plotted on a site plan at a scale of 1:50, and section drawings were made at a scale of 1:20. Context information was recorded on standard watching brief record sheets. A colour photographic record was maintained, selected prints from which have been reproduced in this report.

The fieldwork was carried out by a series of visits between 9<sup>th</sup> June and 18<sup>th</sup> July 2003 and was monitored at all times by Alex Brett, Rachel Gardner and the author. Excavations in Fields 6 and 13 also required the assistance of up to two experienced field archaeologists.

## 6.0 Results

(NB: the field numbers used below are the same as those used in the previous fieldwalking (Brett, 2003) and geophysical surveys (Bunn & Masters, 2003)).

*Fields 1-4:* This stretch of the route ran from the Long Eau, east of Manby, following the line of 'The Cut', terminating on the north-west side of a minor road, near to Walk Farm. The topsoil was homogenous throughout these fields, consisting of a dark brown silty loam, (001). No archaeologically significant deposits were observed. A single fragment of undiagnostic worked flint was recovered from the east end of Field 3.

*Field 5 (Figs 2 & 3):* The route ran to the south of Walk Farm, on a west-north-west to east-south-east alignment. Approximately 35m from the east end of the field, a spread of brick rubble was observed during topsoil removal (001). Prior to levelling of the easement using a bulldozer, this area was hand cleaned, revealing what appeared to be the truncated remains of two sides of a brick built structure, [023], and the fragmentary remains of another brick wall, [024] (fig. 3). Ploughing and the recent groundworks had heavily truncated both features. There were no surviving courses of brickwork in situ, merely brick dust and several broken fragments. A small slot excavated along the edge of [023] showed the feature to be less than 0.2m deep, with no obvious foundation trench.



**Field 6 (Figs 2, 4 – 6):** The route of the pipeline deviated towards the centre of the field, from an east-north-east to west-south-west alignment, to a north-west to south-east alignment. A low ridge, c.10m wide was observed running north-east to south-west, at the point where the route turned. Further, possibly related, ridge and furrow earthworks were visible in the field to the north of the pipeline easement.

Approximately 35m south of the turn in the route was a substantial spread of dark soil. This was a low point in the field and the area beyond the easement was covered in the imprints of cattle hooves, suggesting a former shallow pond.

Approximately 70m from the west end of Field 6, the geophysical survey had identified a series of strong magnetic anomalies. These did not appear as features during initial topsoil stripping. However, in negotiation with the main contractor, an area was stripped of overburden until the archaeological horizon was observed. The stripped area measured 65m long and 7.5m wide. The width was restricted, as the contractor required vehicular access through this field at all times.

At the north end of the stripped area, an east – west linear feature approximately 3.1m wide was exposed, [100]. This was cut by three shallow north – south linear features, [102], [104], [106]. Slots were excavated through these features in order to establish their profile and stratigraphic relationships. Ditch [100] had a shallow northern edge, with a stepped edge on the south, being moderately shallow and becoming steeper towards the base. It had a maximum depth of 0.82m, and contained a fill of brownish grey silty clay, (101). A total of 14 sherds of Romano-British pottery of 2<sup>nd</sup>/3<sup>rd</sup> century date were recovered. [102] and [104] (cut through [100]) both exhibited a shallow profile, being no more than 0.2m deep. [102] was 2.3m wide and contained a fill of greyish brown silty clay, (103), that contained a handle from a Toynton Ware jug of late 13<sup>th</sup> to 14<sup>th</sup> century date. Only one side of [104] was exposed; the other was beyond the limit of excavation, suggesting a width in excess of 2.8m. The fill was an undated light grey brown silty soil. It is likely that both [102] and [104] represent the truncated remains of medieval plough furrows.

[106] was a more substantial feature, between 3.9 and 4.7m wide and 0.85m deep, with moderately steep sides and a concave base. Its fill was a grey silty clay, containing chalk flecks, charcoal and occasional small flints, (107). It contained a sherd of Romano-British greyware, and a small sherd (4 grammes) of samian ware of probable 2<sup>nd</sup> century AD date. An upper fill of very dark grey silt/clay/loam mix was approximately 0.25m deep. The archaeologists on site were informed by the landowner that this deposit represented recent infilling of a hollow that ran through the field along the line of ditch [106].

A small possible posthole, [110] was observed between [102] and [106], and to the south of [100]. This was 0.35m in diameter, and was heavily truncated, surviving only to a depth of 0.05m. Its fill comprised dark brownish grey silty clay, (111).

To the east of [106], close to the limit of excavation, was [108], a sub-circular feature, with a diameter of c.1.3m. The feature only survived to a depth of 0.1m, and contained a mixed deposit of charcoal-rich black silty clay, and brownish red clay, (109). This material evidenced in situ burning, and the feature was interpreted as the truncated remains of a fireplace or hearth. No dating evidence was recovered.

To the south of [108], a curvilinear feature extended westwards from the limit of excavation, turning towards the north-west, before narrowing rapidly from c.1.5m to 0.3m. A slot excavated across this ditch revealed moderately steep edges and a concave base, with a depth of c.0.55m. The fill was a grey silty clay, (133), that contained Romano-British greyware and shell tempered pottery of 3<sup>rd</sup>-4<sup>th</sup> century date. Towards ditch [106], the edges of the feature became very diffuse, and the relationship between the two ditches could not be established.

Less than 1m south of [114], a substantial rectilinear feature was exposed, [113]. This cut through ditch [106] on an east-west alignment, before turning sharply towards the south for c.6m, and then back towards the west, before disappearing beyond the excavation. The feature was between 2.9 and 4m wide, but at the west edge of the stripped area, where the feature turned east – west, it widened dramatically to c.9.8m+. Three sections were excavated through the feature, exposing moderately steep sides and a slightly concave base, with a depth of c.1.05m. Section ZZ (fig. 4) was not fully excavated due to ground water flooding, and hence has not been included in this report. Three fills were recognised within the ditch; a 0.15m deep basal layer of dark grey silty clay, (134) (which was only observed in section K-L (fig. 5)), sealed by a fill of grey/brown silty clay, (132), beneath a deposit of grey silty clay, (131). Context (132) contained four sherds of Romano-British greyware of 3<sup>rd</sup>/4<sup>th</sup> century date, while the upper fill, (131) contained an abundance of pottery; 93 sherds. This was dominated by shell tempered ware (48 sherds) and greyware (34 sherds). Other fabrics included oxidised wares, a fragment of *mortaria*, a single sherd of samian, and a sherd of Parisian fineware. This material suggested a date of deposition in the 4<sup>th</sup> century AD. This deposit also contained 57 fragments of animal bone, representing cattle, sheep/goat, horse, pig and goose. A soil sample from this context was submitted for environmental appraisal. It contained small amounts of bone from sheep/goat, small fish, vole and mole, as well as charred grain and seed. Nine hammerscale fragments also attest the possibility of iron smithing in the area.

Another small pit-like feature was exposed to the east of [113], context [125]. This was 0.9m wide and 0.25m deep with an undated fill of brown silty clay, (126).

Approximately 4m south of [125], a slot was excavated through an east – west ditch, [118], which was 1.05m wide and 0.45m deep, with steep sides and a concave base. It was filled by (119), a grey brown silty clay, containing two sherds of Romano-British greyware and a juvenile bovine foot bone.

A little over 2m south of [118] were two inter-cutting ditches, [115] and [129], running west-north-west to east-south-east. The earliest of these was [115], which was approximately 3.5m wide and 1.1m deep, with a fill of dark grey silty clay, (128). Dating evidence from this feature was recovered in the form of nine sherds of mid 3<sup>rd</sup> century pottery. The northern edge of [115] was cut by [129], measuring 1.36m wide and 0.46m deep. Its fill comprised an undated deposit of grey/brown silty clay, (127).

To the south, [129] cut a north – south linear feature, [116], which contained a fill of grey/brown silty clay, (123), with a single sherd of 2<sup>nd</sup>/3<sup>rd</sup> century AD greyware.

At the south-east end of the stripped area, a T-shaped feature was exposed, [120], the arms of which were aligned north - south and east - west. Slots were excavated through this feature to determine whether it was a single cut or several inter-cutting features. It was not possible to identify inter-cutting in the excavated sections. Two fills were identified within the ditch, a primary fill of grey/brown silty clay, (121), sealed by a fill of grey clay, (122). Dating evidence consisted of two sherds of Romano-British pottery from the primary fill, and nineteen sherds of predominantly greyware from the secondary fill, dating to the late 3<sup>rd</sup> century AD. The nature of the fills, the alignment of the features and the dating evidence recovered suggests that [120] and [116] are part of the same feature.

[120]/[116] was cut by an east - west gully, [117], 0.6m wide and 0.3m deep. This contained an undated fill of grey silty clay, (124).

*Fields 7-12:* This stretch of the route ran broadly south-eastwards, crossing the Two Mile Bank Drain between Fields 7 and 8. The route again turned east-south-eastwards at the beginning of Field 11, at the end of which it crosses a minor road, and turns towards the south-east in the middle of Field 12.

The ploughsoil was the same as for Fields 1-6, excluding Field 9, where a light brown sandy loam, (018) predominated.

A subsoil deposit (022) was exposed in Fields 7 and 8, consisting of a mid brown sandy clay. A rubble spread observed during the fieldwalking in Field 8 was still visible in the stripped area, although no underlying structure was observed. Elsewhere the subsoil was a greyish brown silty clay, (002). Field 12 contained occasional fragments of modern brick and tile, and small quantities of unstratified material was recovered, as listed below:

- |           |  |
|-----------|--|
| Field 8:  | One sherd of Romano-British pottery, one flint scraper.  |
| Field 10: | One sherd of Toynton Ware pottery (13 <sup>th</sup> - 15 <sup>th</sup> century).   |
| Field 11: | One sherd of a late medieval local pottery (15 <sup>th</sup> /16 <sup>th</sup> century), one flint flake, one flint scraper. |

*Field 13 (Figs 7, 8 - 10):* During topsoil stripping of Field 13, an extensive spread of charcoal-rich material was observed, located approximately 180m from the south-east end of the field. This was sample excavated after initial topsoil stripping. However, it was necessary to remove further overburden in order to more clearly define features in this area. This was carried out using a 180° wheeled excavator, fitted with a 1.6m wide smooth dykeing bucket. The stripped area measured approximately 31m by 12m. The second phase of stripping removed an intermittent layer c.0.1m deep consisting of topsoil, natural and the fills of underlying features, mixed by recent deep ploughing. This material yielded 77 sherds of Romano-British pottery, consisting of greyware (70 sherds), oxidised wares (3 sherds), and shell tempered fabrics (4 sherds). The date range for this material was late 3<sup>rd</sup> to 4<sup>th</sup> century AD.

At the southern end of the stripped area, a substantial linear feature ran east-north-east to west-south-west across the easement, measuring approximately 2.3m wide, [031]. A slot was machine-excavated through this feature, and subsequently hand cleaned. Two fills were observed; a bulk fill of compact grey clay, (050), and a thin upper band

of yellowish grey silty clay, (051), that survived to a depth of 0.05m. Context (050) produced seven sherds of Romano-British pottery of mid 3<sup>rd</sup> century AD date, and a single cattle molar. It is uncertain whether this feature represents a man made ditch or a channel of natural origin. The deposits that filled the feature are indicative of gradual accumulation of material in an environment typified by very slow moving or still water.

A feature of similar dimensions, containing similar deposits, was exposed at the north end of the stripped area, [064]. The feature also ran east-north-east to west-south-west, but with a substantial meander, suggesting that it was a natural channel.

Between the two suggested palaeochannels was a complex of cut archaeological features. These appeared to be focus around a large broadly sub-rectangular feature, [010], towards the east-north-east side of the easement. This feature was approximately 12.5m wide, and extended c.4m into the stripped area from the line of the existing pipe, and was interpreted as a possible shallow pond. A number of slots were excavated through the feature, exposing a very shallow profile, with a maximum depth of 0.3m. Two fills were observed, a primary deposit of alluvial grey/brown clay, (025), containing two sherds of Romano-British greyware. It was sealed by a fill of very dark grey silty clay, (009)/(017), which contained frequent flecks of burnt clay and organic material. A total of 68 sherds of Romano-British pottery were recovered from this context, dominated by domestic greywares (46 sherds) and shell tempered pottery (11 sherds). Other fabrics included five sherds of imported samian fineware, a *mortaria* fragment and two sherds of fine ware produced in the Nene Valley, suggesting a late 3<sup>rd</sup> century date. Small amounts of sheep and cattle bones were also recovered. A soil sample from (009) contained numerous fragments of fired earth, as well as large quantities of charred grain, chaff and seeds, suggesting crop processing in the vicinity. The presence of fired earth in the sample suggests that this material may be waste from a nearby corn drier. Snails from the sample indicated a freshwater environment, which would fit with the interpretation of the feature as a possible pond.

A series of linear features appeared to be running in the direction of the 'pond'. At its northernmost end, it was intersected by a steep sided east-west aligned gully, [054], approximately 0.5m wide and 0.25m deep. Its fill was an undated dark grey silty clay, (055). A slot excavated to establish the relationship between [010] and [054] showed gully [054] to be cut through the upper fill of the 'pond' [010].

To the west, gully [054] had very diffuse edges, but appeared to merge with a large irregular feature. A slot excavated through this feature showed it to actually be two features, [036] and [037]. [036] was a moderately steep sided gully with a concave base, 0.42m wide and 0.2m deep. It contained a dark grey clay, (042), which was undated. [037] had moderately steep edges and a flat base, and measured 1.15m wide by 0.18m deep. The fill was a dark grey clay, (043), which contained six sherds of greyware, a sherd of shell tempered pottery dating to the 2<sup>nd</sup> – 3<sup>rd</sup> century AD, and two fragments of sheep/goat bone. No relationship between the two features was established. A possible post hole, [044], was observed in the base of [037], measuring 0.3m in diameter and 0.15m deep. It contained a mixed deposit of grey and brown clay, (045). This feature was slightly irregular in plan and the possibility remains that it was of natural origin.

Extending south-eastwards from [037] for c.0.8m was a very small shallow linear feature, [048], containing a fill of grey clay, (049). At 0.05m deep, it was not possible to establish a relationship between this and the adjacent features. To the south-east, [048] merged with another west-south-west to east-north-east gully, [008]. This feature varied between 0.35m and 0.6m wide, was 0.1m deep, and terminated 1.8m from the south-west edge of the stripped area. The fill was dark brownish grey silty clay, (007). At its north-west end it appeared to be cut by pond [010], although the similarity of the fills made this relationship far from certain.

Approximately 3.5m south of [008], gully [016] also ran into [010]. This feature was 1.5m wide in plan at the south-west edge of the stripped area, narrowing to 0.6m wide at its intersection with [010]. The excavated profiles showed moderately sloping sides and a concave base, and were c.0.3m deep. It contained a fill of dark grey silty clay, (011)/(014), flecked with small quantities of red/brown fired clay. The fill produced 23 sherds of pottery covering the later 2<sup>nd</sup>/3<sup>rd</sup> to late 3<sup>rd</sup>/4<sup>th</sup> century AD, four small fragments of sheep bone, and a fragment of cattle bone. A slot cut through [010] and [016] showed the gully to curve northwards, and predate the pond. The slot also revealed an abutting gully [029], on the same alignment as [016]. This was 0.3m deep with almost vertical sides and a concave base, and contained a fill of dark grey clay, (030). The U-shaped terminus to this portion of gully was clearly visible in plan. To the south-east of [016], another slightly meandering linear feature, [026], ran north-south into [010]. This ditch was 1.75m wide and 0.2m deep, with a shallow bowl shaped profile. The fill was a light grey alluvial clay, (027), which was undated. The upper fill of [010] appeared to seal this feature.

Adjacent to [026], a sub-oval pit was cut into the fill of [010]. The pit [015] measured 2.3m long by 1.1m wide and survived to a depth of 0.3m. Three fills were observed within this feature. The primary fill, (028), was a pale grey clay, overlain by a thin lens of grey clay flecked with charcoal and abundant fired clay fragments, (020). Both of these deposits were undated. The upper fill however, a dark brown/grey clay, (013), contained three small sherds of Romano-British greyware. The pit was cut by a small north-north-west to south-south-east aligned gully, [062], which terminated 0.6m from the south edge of [010]. The excavated profile was 0.4m wide and 0.14m deep, and contained a fill of very dark grey silty clay, (063), which was undated. The gully could be seen in plan for a short distance cutting the upper fill of [010]. A soil sample was recovered from (013), the upper fill of pit [015]. This yielded small amounts of pottery and animal bone, as well as an abundance of charred grain, chaff, and seeds. The material was generally the same as that recovered from the soil sample from (009), suggesting crop processing activities, with the snail assemblage again being indicative of a predominantly freshwater environment.

Several discrete pit-like features were also observed. Less than 1m to the west of [010] was a truncated pit or linear feature, [058]. A slot was excavated through its north end, revealing a U-shaped terminus less than 0.2m deep. The feature could only be traced for c.1m further to the south. Its fill was a mid grey silty clay, (059), which contained four sherds of mid 3<sup>rd</sup> century Dales ware pottery and a single sheep tooth. A small possible stakehole, [046] was observed in the base of this feature, although this may have been a natural undulation.

Another small pit or posthole, [052], was excavated c.2m south of [058]. This was 0.35m in diameter and 0.2m deep, containing an undated fill of mid grey silty clay with occasional charcoal flecks, (053).

[052] was adjacent to two inter-cutting features, [034] and [035]. [034] was an elongated pit, measuring 2m long, 0.55m wide and up to 0.45m deep. [035] was 0.7m in diameter and 0.22m deep. Both features contained dark grey clay fills, and as a result, a relationship could not be established between the two.

Between ditches [016] and [026], two further small pits or postholes were exposed. [032] was sub-oval in plan, measuring 0.6m by 0.4m with steep sides and a concave base. Its fill was a very dark grey silty clay, (038). Adjacent to [032] was a small sub-circular feature, [033]. This was 0.25m by 0.2m and contained a fill of very dark grey silty clay with abundant charcoal flecks, (039). The feature also contained two sherds of Dales Ware pottery, seven large sherds from the same greyware vessel of mid 3<sup>rd</sup> century date, and a single fragment of sheep/goat bone.

Towards the south-east end of the field, a linear feature was detected by geophysical survey, running broadly north-north-west to south-south-east. This did not appear during initial topsoil stripping, as the overlying topsoil was not fully removed. In order to locate this feature, a section was machine excavated through the overlying topsoil, exposing the feature cutting through a compact grey clay, (060), interpreted as a possible flood deposit derived from the nearby Great Eau. The ditch, [056], was approximately 3.1m wide by 0.7m deep (Figs 7 and 8), and it contained a fill of greyish brown silty clay containing small shell fragments and flecks of limestone. No dating evidence was recovered.

At the very north-west end of the field, a deposit of brown/grey silty clay, (006), was observed, overlying the topsoil. This was interpreted as upcast from the recent cleaning/recutting of the adjacent field drain.

*Field 14:* In this field the route ran south-east from the Great Eau, turning east-south-east immediately north of Barfen Farm. Soil stripping revealed a subsoil of yellowish brown silt, (003), from which no archaeological artefacts or deposits were identified, although ploughsoil was not fully removed from the whole easement.

*Fields 15 –18:* This stretch of the route was not stripped during this phase of archaeological monitoring.

*Fields 19-23:* The final stretch of the pipeline ran from Strubby Middle Drain to the A1104 at the north end of Maltby-le-Marsh. Soil stripping in these fields exposed a subsoil, (002), a greyish brown silty clay. No archaeological deposits or artefacts were recovered.

## 7.0 Discussion and conclusion

For much of the pipeline route, the watching brief involved the observation of areas of limited archaeological potential, thereby corroborating with the conclusions of preceding fieldwalking and geophysical surveys. Two distinct areas exposed substantial archaeological remains, and these areas were subjected to more intensive levels of investigation.

In Field 6, a complex of intercutting features of predominantly Romano-British date were investigated. Dating evidence from this site ranged from mid 2<sup>nd</sup> century through to later 4<sup>th</sup> century AD, and in several cases, a wide date range of material was represented in one context, suggesting gradual filling of features over a long period of time. The pottery assemblage is indicative of relatively low status rural occupation, with few finewares or imported fabrics (the assemblage being dominated by locally produced domestic vessels). A soil sample from the upper fill of ditch [113] confirmed this assumption, producing animal bone and fragments of burnt grain and seed. The lack of chaff from the sample suggests that this material is derived from food waste rather than the processing of cereal crops, indicating the presence of a settlement or small farmstead in the general vicinity of the site. No direct evidence of settlement activity was identified, other than a small, heavily truncated area of burning, which could easily have been the result of a single fire, and need not be a permanent hearth. The features exposed are more likely to represent several successive phases of intercutting field boundaries and enclosures associated with agricultural practices, probably also serving a drainage function. The presence of small amounts of hammerscale from ditch [113] also indicates the possibility of iron smithing in the area, although only on a very small scale.

At the north end of the stripped area in Field 6, were two probable medieval furrows, indicating the continued agricultural exploitation of the area in the medieval period.

Field 13 also contained an abundance of Romano-British material. This appeared to be focussed on a large shallow feature, [010], which was interpreted as a possible pond. This interpretation was given support by the recovery of numerous aquatic species of snail from a soil sample from the upper fill of the feature. Large amounts of fired clay were recovered from the features in this area, leading to the initial suggestion that the site was devoted to salt making. The site lies in a low-lying marshland, which in the Romano-British period was no doubt subject to the seasonal flooding required for salt making. Numerous salt making sites are known in the Lincolnshire Marsh, although these are generally closer to the coast, as at Ingoldmells, Hogsthorpe and Addlethorpe (Whitwell, 1992). However, the snail species from the pond, and a sample from pit [015] were freshwater, and the fired clay was deemed to be merely fired earth, not briquetage, which is ubiquitous on salt making sites. The presence of large amounts of charred chaff in the soil samples further suggested that crop processing activities were taking place on or close to the site, the charcoal and fired earth rich deposits being the waste from a possible corn drier or hearth.

The pond had a number of linear features running into it, and it may be that this feature served as a central sump or drainage point into which ground water was channelled by a series of field boundary ditches. This water could then be used to provide the needs of the local community, such as feeding livestock or watering crops.

The pottery assemblage from this field was similar in date to that from Field 6, covering the mid 2<sup>nd</sup> to 4<sup>th</sup> centuries AD, and was again indicative of a low status rural assemblage.

### **8.0 Effectiveness of methodology**

The watching brief was the final element of a programme of archaeological fieldwork, which also included fieldwalking and gradiometer surveys. This approach allowed a rapid assessment of the archaeological potential of the pipeline route, which was for the most part limited.

The stripping of the pipeline easement was carried out using a 360° tracked excavator and a bulldozer. In many places the stripping either was not deep enough to expose archaeological deposits, or the stripped surface was so rutted and disturbed by the machines that it was not possible to observe any archaeological features that may have been present. However, thanks to the co-operation of the contractors, it was possible to strip the easement to the archaeological horizon where it was most necessary, particularly in Fields 6 and 13. In these instances sufficient time was allowed to excavate and record the features exposed.

### **9.0 Acknowledgements**

Pre-Construct Archaeology (Lincoln) would like to thank Anglian Water Services for their commission. Thanks also go to the main contractors, Barhale for their co-operation during the groundworks, and to the site assistants, Peter Masters, Susie Matthewson and Tom McCarthy.



## 10.0 References

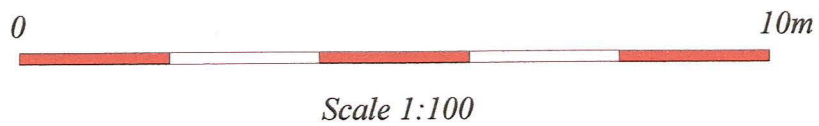
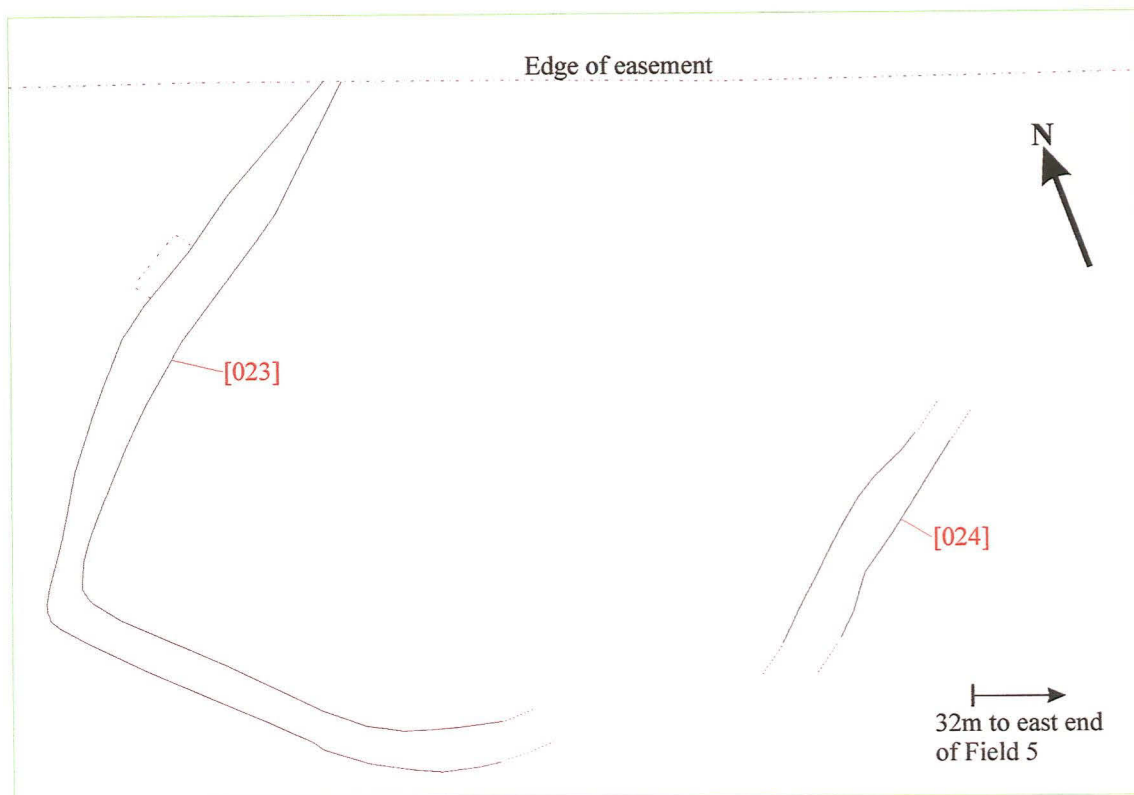
- Brett A., 2003, *Surface collection survey. Proposed route of Maltby-le-Marsh to Manby replacement water main*, Pre-Construct Archaeology (Lincoln), unpublished report
- British Geological Survey, 1996, *Mablethorpe. England and Wales Sheet 104. Solid and Drift Geology. 1:50,000 Provisional Series*. Keyworth, Nottingham, British Geological Survey
- British Geological Survey, 1999, *Louth. England and Wales Sheet 103. Solid and Drift Geology. 1:50,000 Provisional Series*. Keyworth, Nottingham: British Geological Survey
- Fenwick, H., Chapman, H., Fletcher, W., Thomas, G. & Lillie, M., 'The archaeological survey of the Lincolnshire Marsh', in Ellis, S., Fenwick, H., Lillie, M. & Van de Noort (eds.), 2001, *Wetland Heritage of the Lincolnshire Marsh*, University of Hull, Hull.
- Masters P. & Bunn D., 2003, *Fluxgate gradiometer survey: Proposed route of Maltby-le-Marsh to Manby replacement water main*, Pre-Construct Geophysics, unpublished report
- Morgan P., & Thorn C., (eds.), 1986, *Domesday Book: vol.31: Lincolnshire*, Phillimore & Co. Ltd, Chichester
- Owen D.M., 1971, *Church and Society in Medieval Lincolnshire*, History of Lincolnshire volume V, History of Lincolnshire Committee, Lincoln
- Whitwell J.B, 1992, *Roman Lincolnshire*, History of Lincolnshire Committee, Lincoln

## 11.0 Site archive

The documentary and physical archive for the site is currently in the possession of Pre-Construct Archaeology (Lincoln). 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 2004.33.



**Fig. 2:** Location of features exposed in Fields 5 and 6 in relation to the results of the geophysical survey (scale 1:2500)



**Fig. 3:** Plan of features exposed in Field 5 (scale 1:100)

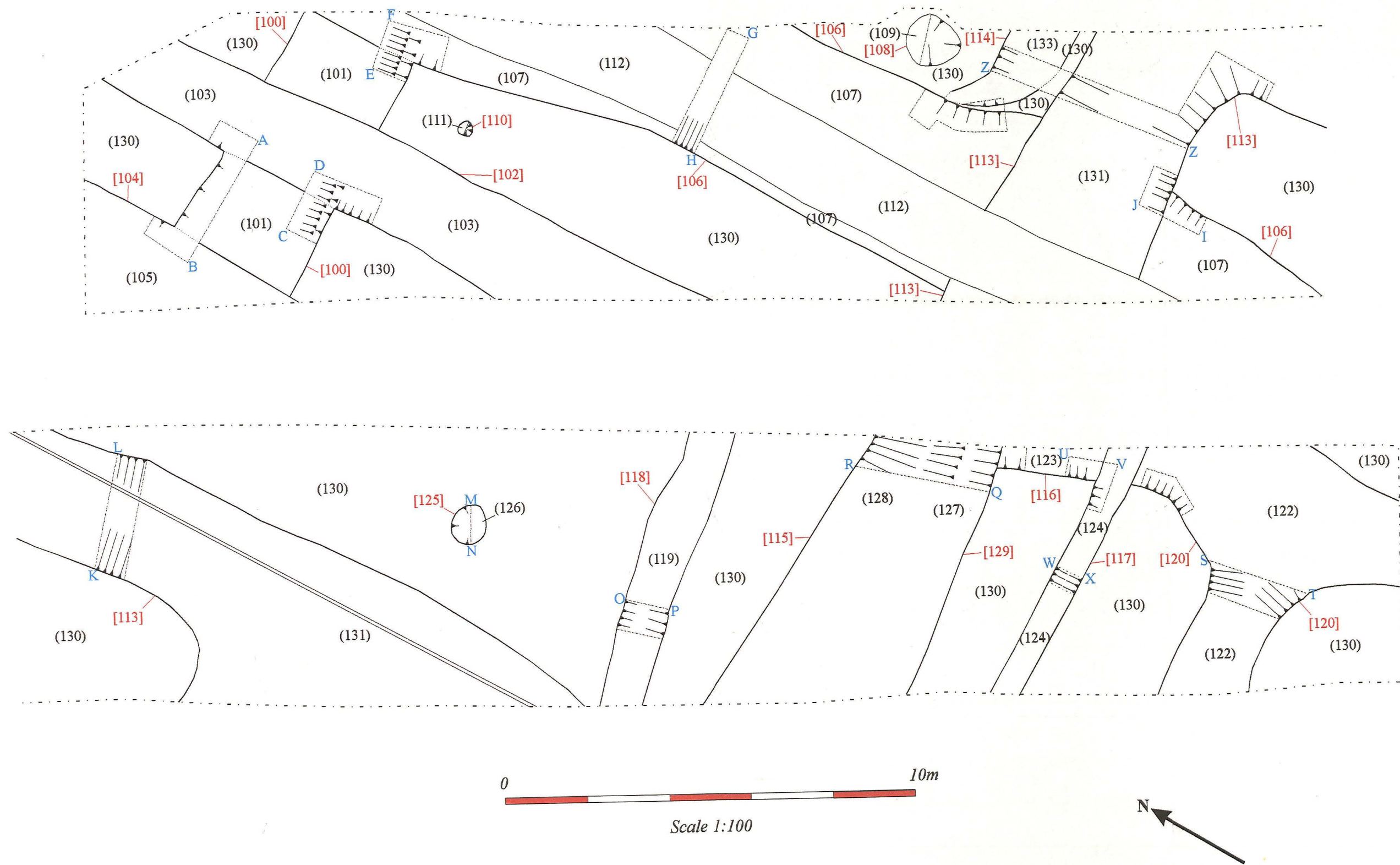


Fig. 4: Plan of features exposed in Field 6 (scale 1:100)

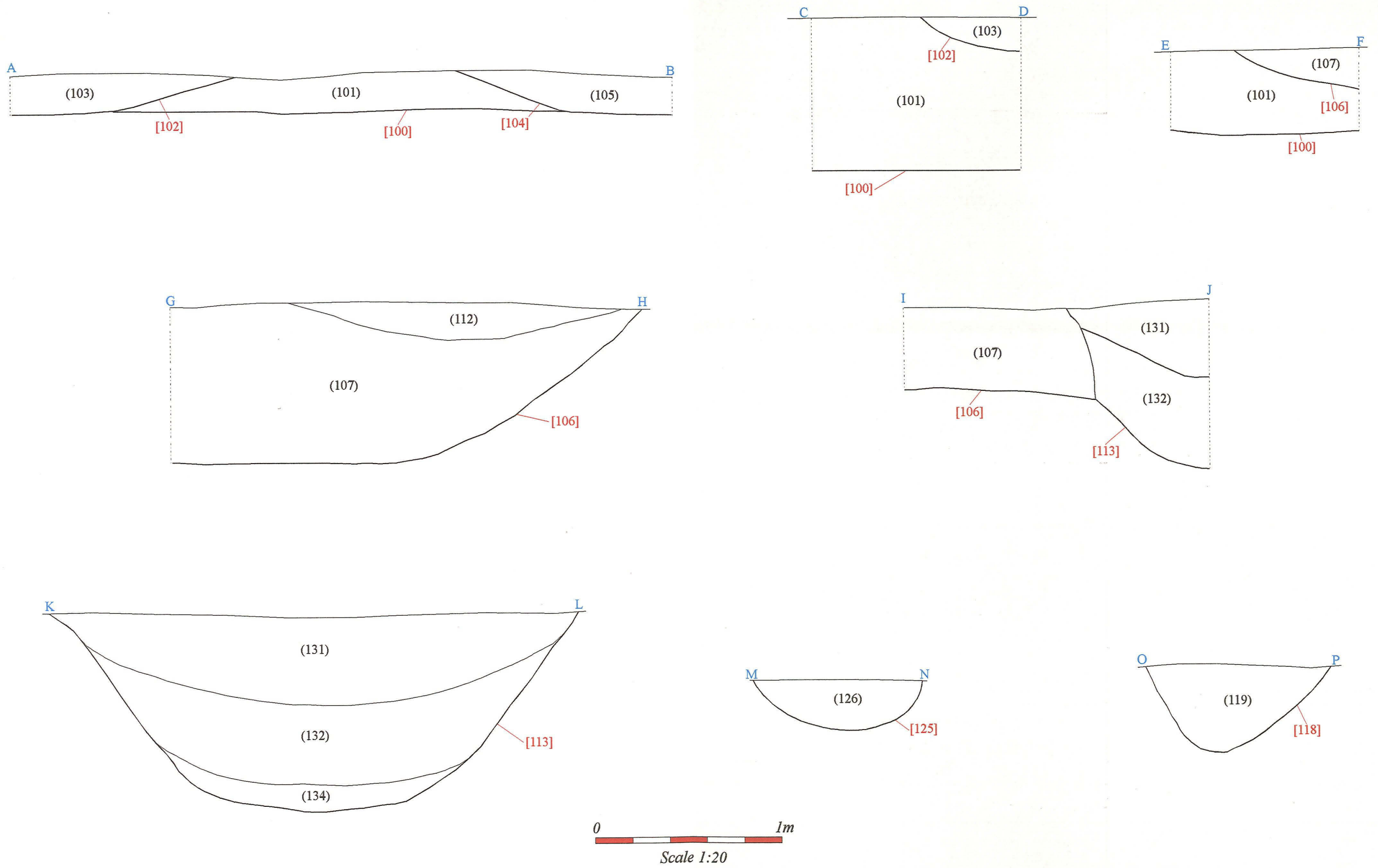


Fig. 5: Sections through features excavated in Field 6. Located on fig. 4 (Scale 1:20)

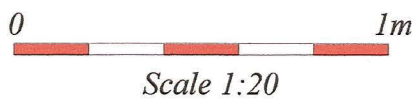
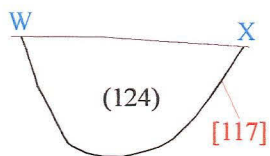
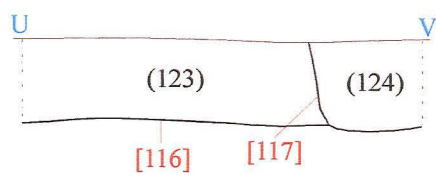
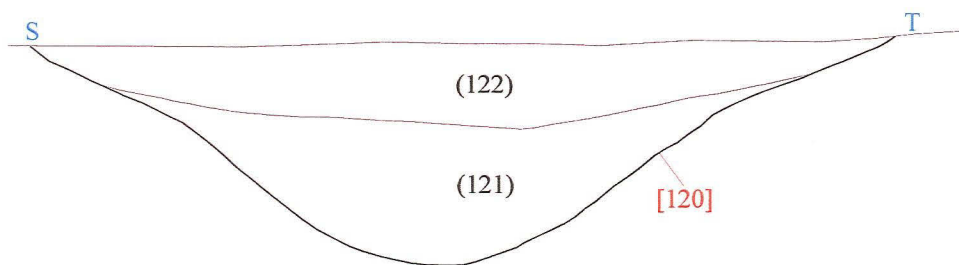
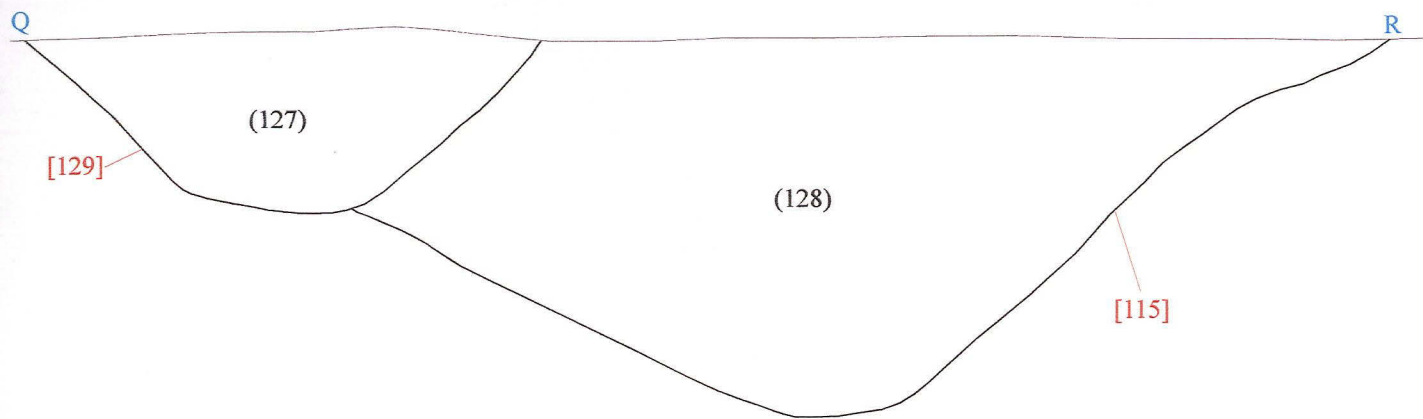
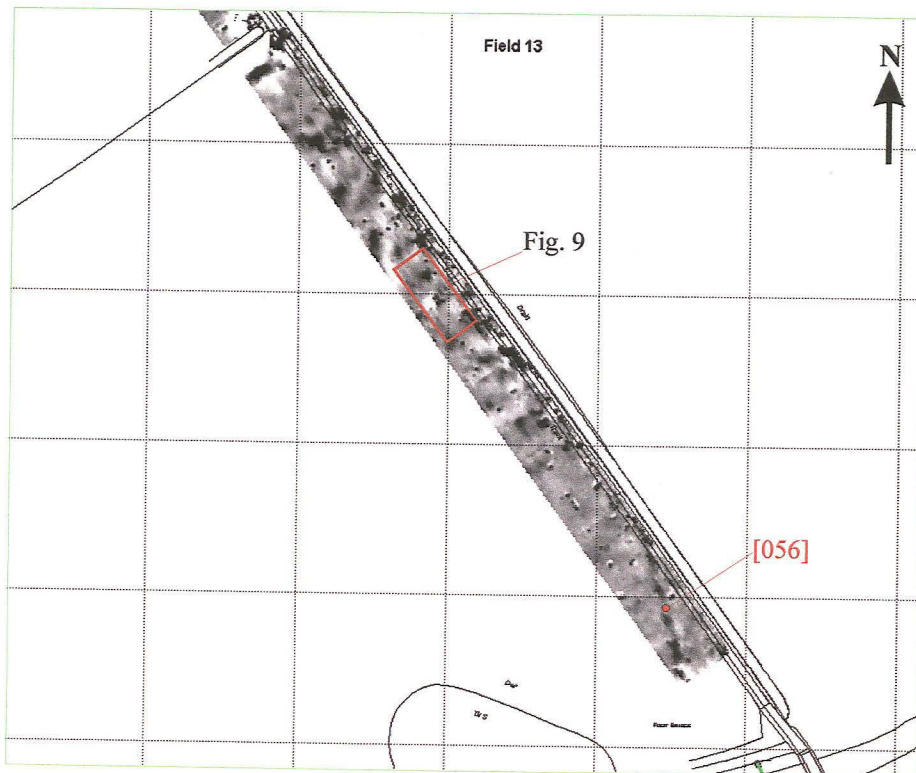
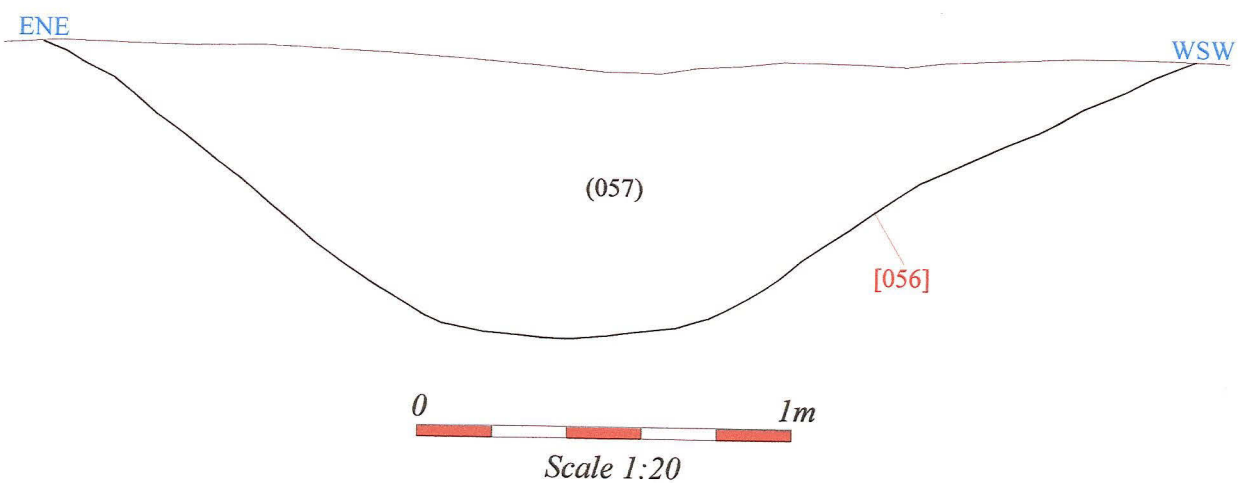


Fig. 6: Sections through features excavated in Field 6 (cont.). Located on fig. 4 (Scale 1:20)



**Fig. 7:** Location of features exposed in Field 13 in relation to the results of the geophysical survey (scale 1:2500)



**Fig. 8:** Section through ditch [056], south-east end of Field 13 (scale 1:20)

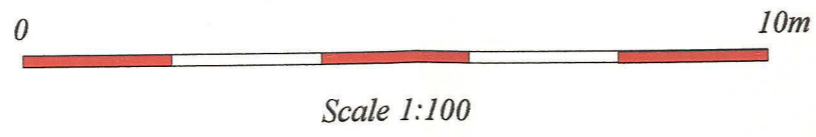
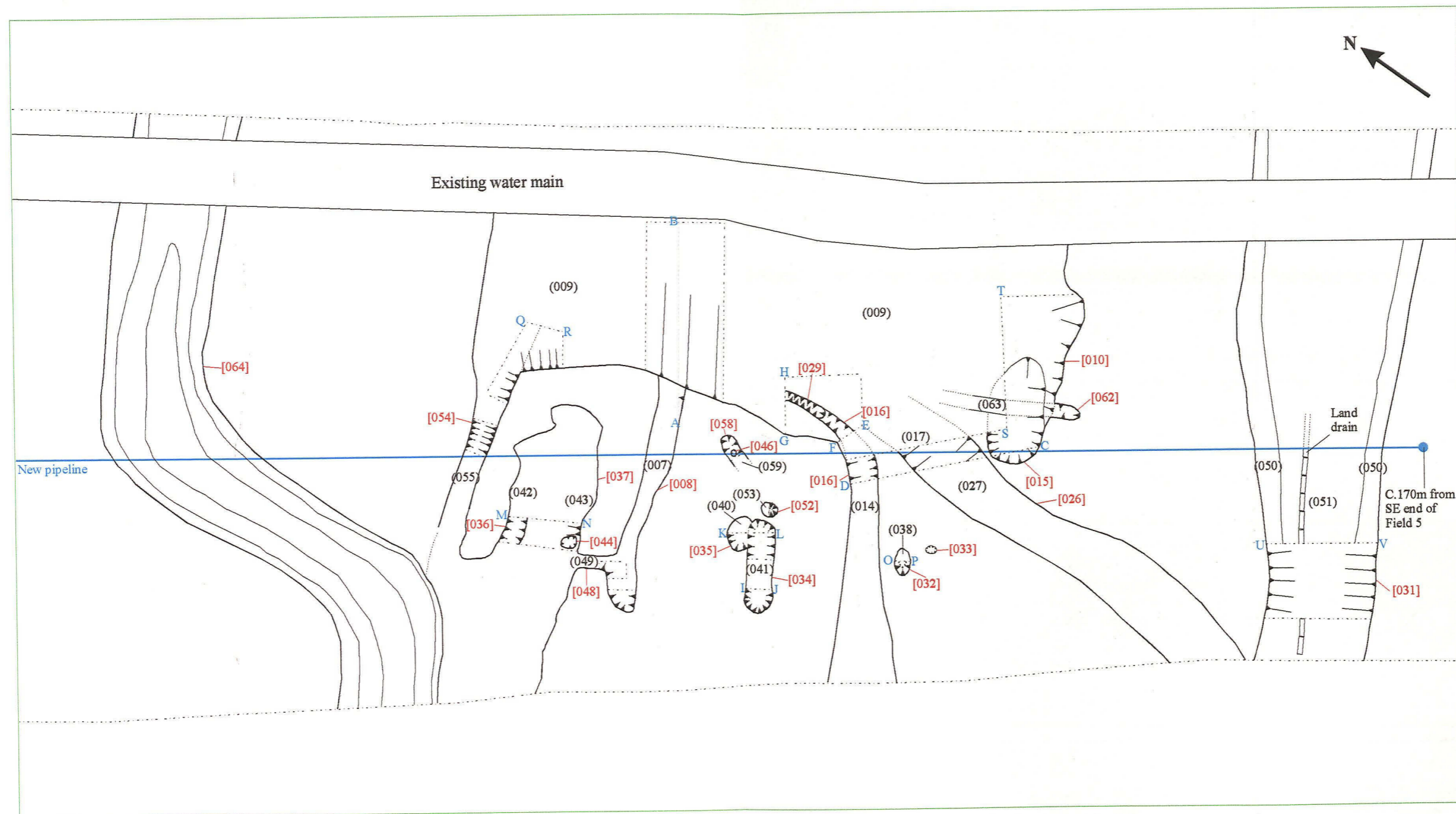


Fig. 9: Plan of features exposed in Field 13 (scale 1:100)



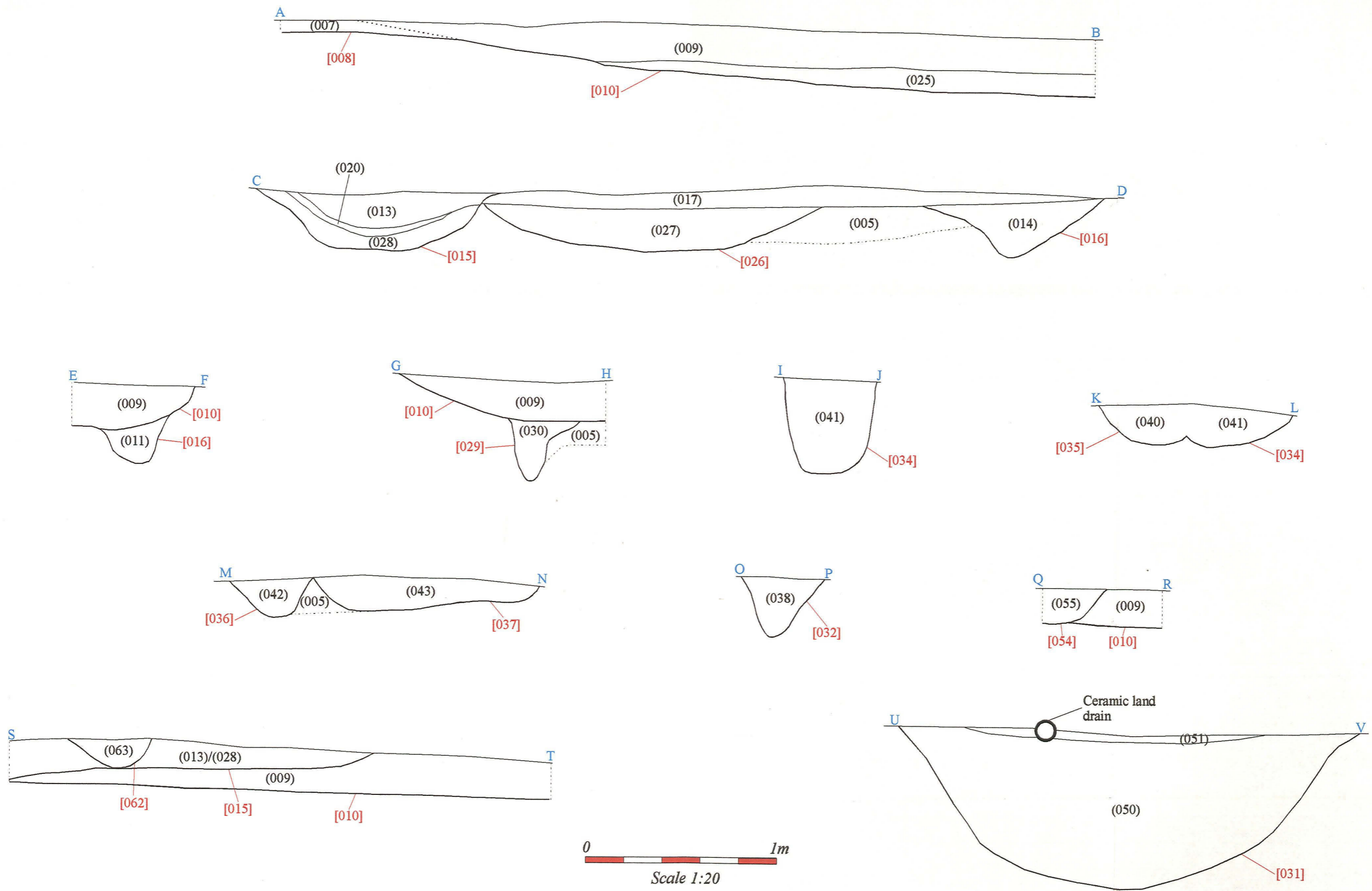


Fig. 10: Sections through features excavated in Field 13. Located on fig. 9 (Scale 1:20)

APPENDIX 1: Colour plates



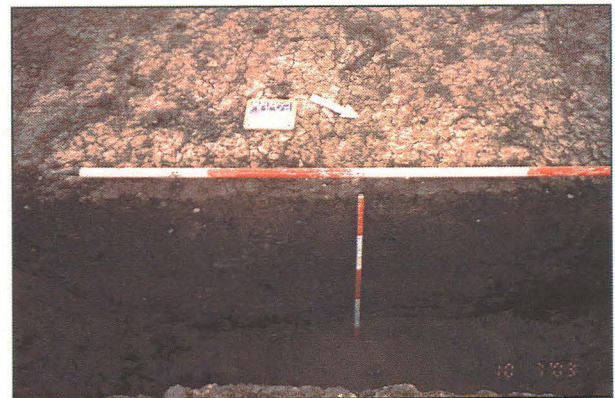
Pl. 1: Brick structure [023]/[024], Field 5, looking south-south-east



Pl. 2: View of stripped area in Field 6, looking north-west



Pl. 3: Section through ditch [100], cut by furrows [102], [104]. Looking south



Pl. 4: Section through enclosure ditch [113], looking south



**Pl. 5:** Section through ditches [113] and [106], looking west-south-west



**Pl. 6:** Section through ditch [120], looking north-east.



**Pl. 7:** Features exposed in the stripped area in Field 13. Looking north



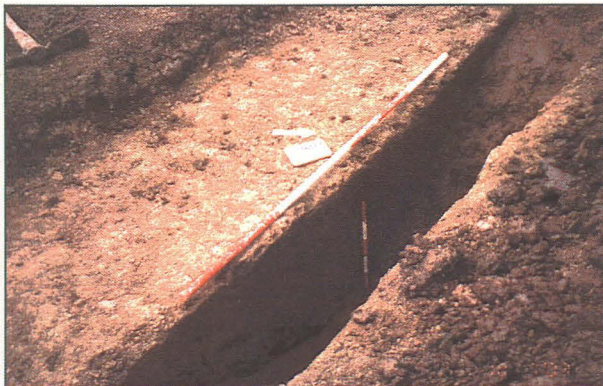
**Pl. 8:** Slot through pond [010]. Gully [008] runs into the pond in the bottom right of the picture. Looking east-south-east



**Pl. 9:** Slot through pit [015] and ditches [016] and [026]. A portion of pond [010] is in the foreground, cut by gully [062] in the bottom right of the picture. Looking west-south-west



**Pl. 10:** Slot through pond [010], showing curvilinear gully [016]. The much deeper [029] can clearly be seen terminating in the middle foreground. Looking south



**Pl. 11:** Section through ditch [056], south-east end of Field 13. Looking south-east



**Pl. 12:** General view of topsoil stripping in Field 23. The 360° is stripping the easement, which is then bladed flat by the bulldozer and the spoil mounded up. Note the extensive rutting. Looking north

## APPENDIX 2: Lithic Materials: Catalogue

**Manby – Maltby Pipeline, Lincolnshire.  
MMF 03**

Report by Jim Rylatt – October, 2003

**1.0 Catalogue**

Five pieces of worked flint was recovered during the watching brief:

Context No.		Description
131	Secondary flake	Thick, irregular flake, with small cortical platform, diffuse bulb and feathered termination. Dorsal surface has scars indicating the removal of similar irregular flakes from a single platform. Approximately 15% of the dorsal surface is cortical; cortex is very thin and very abraded. Flake surfaces have a 'greasy lustre' and there are a multitude of small 'bubbles' within the flint; this indicates that it has been thermally altered, either by fire, or frost. Mid grey opaque flint. 26 x 33mm.
<i>U/S Field 3</i>	Broken secondary flake	Medial fragment. Dorsal scars suggest flake removals from a single platform. Small area of very thin very abraded cortex. Additionally, there is evidence of a thermal fracture, with one flake surface being irregular and granular. Greyish-brown semi-translucent flint.
<i>U/S Field 8</i>	Side & end scraper	Relatively thick flake, with flat platform, pronounced bulb, having erailure flake detached, and (probably) feathered termination. Dorsal surface has scars indicating the removal of flakes from a single platform. Approximately 30% of the dorsal surface is cortical; cortex is very thin, very abraded and has rounded profile. The thicker lateral edge and narrow distal end have been retouched by the removal of very small abrupt flakes and smaller spalls; retouch is fairly irregular. Mottled caramel brown and mid grey opaque flint, with some chalky inclusions. 33 x 29mm.
<i>U/S Field 11</i>	Broken tertiary flake	Distal fragment, with feathered termination. Dorsal scars suggest flake removals from multiple platforms – possibly a discoidal core. Some post-depositional damage to flake margins. Pale yellowish-brown opaque flint, with small chalky inclusions.
<i>U/S Field 11</i>	Side & end scraper	Small, relatively thick flake, with cortical platform, diffuse bulb and (probably) feathered termination. Dorsal surface has scars indicating the removal of flakes from a single platform. Approximately 20% of the dorsal surface is cortical; cortex is very thin and represents recortication of the faces of two much older fractures. The thinner lateral edge has been retouched by the removal of a series of very small acute flakes. Retouch along the distal end is through the removal of small abrupt flakes and smaller spalls; retouch is fairly irregular. Brownish-grey translucent flint, with some dark inclusions. 16 x 17mm.

*NB:* 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.

### **Modified stone**

Two fragments of rounded pebbles were recovered from (014), the fill of curvilinear gully [016]. The larger chunk was a piece of sandstone of Millstone Grit type. The other was a pale grey, medium grained sandstone, with largish quartz inclusions. They are likely to be derived from fluvio-glacial sands and gravels.

Both had been burnt and this had caused the pebbles to shatter, leaving characteristic angular fractures. It is probable that they were used as potboilers, which were used throughout prehistory to heat water for cooking; this process also continued to be utilised in none Romanised rural settlements during the earlier 1<sup>st</sup> millennium AD.

## APPENDIX 3: Romano-British pottery report

**REPORT 142 ON POTTERY FROM THE MALTBY-LE-MARSH TO MANBY  
PIPELINE, MMP03  
for PRE-CONSTRUCT ARCHAEOLOGY**

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

5 November 2003

The Roman pottery amounted to 353 sherds, weighing 7.360kg from 24 contexts, and four unstratified groups produced 13 sherds, 254g. The pottery came from two different areas, field 13 being stratified contexts below 100 producing 204 Roman sherds, 4.385kg, and from field 6, contexts over 100, 149 sherds, 2.975kg. Unstratified finds & post-Roman sherds, 13 sherds, 0.254kg, came from various fields, noted below. Fired clay, tile and brick amounted to 131 fragments, 2.957kg.

The condition is above average, with groups of fairly freshly fractured pottery, although some abrasion is also evident. The average sherd weight is relatively high at over 20g per sherd, split between areas as Field 13 with 21.5g/sherd, Field 6 having a slightly lower 20g/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 codes are in Appendix 1. The archive record (below, Appendix 2) will be curated for future study.

## INTRODUCTION

The quantities and dating by context are on Table 1.

**Table 1** Quantities and dating by deposit

Cut	Feature	Cxt	Sherds	Weight	Date	Comments
<b>FIELD 13</b>						
-	Finds Field 13	004	5	51	L2-3?	
-	Mixed deposit Field 13	012	77	1965	L3-4	Joins 011; Lots BWMs; f. fresh shs
008	Linear feature	007	1	37	POST-RO	
010	Lge shallow ?pond	009	67	1309	L3	F.fresh;some earlier; frag s'stone
010	Lge shallow ?pond primary	025	2	22	ROM	
015	Subcircular pit upper	013	3	20	ROM	
016	Curvilinear gully	011	12	109	L3-4	Joins 012
016	Curvilinear gully	014	8	127	3C?	Not much dating
016	Curvilinear gully primary	021	3	33	L2-3	
-	Sealing layer [015];[016];[026]	017	1	10	ROM	Abraded
031	Lge NE-SW linear drainage	050	7	74	M3	
033	Circular pit much pot	039	8	534	M3	
037	Linear feature irregular	043	7	101	2-3C?	Some abraded;no strong dating
058	Linear feature	059	4	30	M3	
<b>FIELD 6</b>						
100	Lge E-W linear	101	14	338	2-3C	Some abrasion
106	N-S linear feature	107	2	19	2C	Date on Samian

113	Lge enclosure ditch	131	94	1531	4C?	Some abrasion; frag burnt bone & ?slate; joins 132
113	Lge enclosure ditch primary	132	4	93	3-4C	Joins 131
114	Curvilinear ditch	133	6	483	3-4C	
115	E-W linear feature	128	9	141	M3	Some abrasion
116	N-S linear feature	123	1	44	2-3C	
118	E-W linear feature	119	2	14	ROM	
120	E-W linear feature	121	2	20	ROM	
120	E-W linear feature secondary	122	19	321	L3+	Some abraded
-	Unstratified	US F13	8	194	L3-?4	
-	Unstratified	US FLD8	1	2	ROM	
-	Unstratified	US FLD10	1	6	POST-RO	
-	Unstratified	US FLD11	2	15	POST-RO	
			370	7643		
<b>TOTAL</b>			<b>370</b>	<b>7643</b>		

Sherd links were noted between the mixed deposit context 012 and the curvilinear gully 016 (cxt 011), and between the two deposits contexts 131-2 in the large enclosure ditch 113.

## OVERVIEW OF FABRICS

A summary of the fabrics represented from all contexts is on Table 2. Fabrics are defined below.

**Table 2 Fabrics**

Fabric	Code	Sherds	%	Weight	%
Dales ware shell-gritted	DWSH	9	2.43	164	2.15
Dales ware shell-gritted?	DWSH?	2	0.54	42	0.55
Grey quartz-gritted	GREY	252	68.11	5827	76.24
Grog tempered	GROG	1	0.27	94	1.23
Late coarse pebbly grey	LCOA?	2	0.54	42	0.55
Mortaria	MORT	2	0.54	26	0.34
Nene Valley colour-coated	NVCC	1	0.27	2	0.03
Nene Valley Parchment ware	NVPA	2	0.54	2	0.03
Oxidized	OX	10	2.70	137	1.79
Oxidized?	OX?	2	0.54	12	0.16
Oxidized white-slipped	OXWS	1	0.27	56	0.73
Parisian ware	PART?	1	0.27	15	0.20
Post-Roman	PRO	3	0.81	52	0.68
Samian Central Gaulish	SAMCG	3	0.81	13	0.17
Samian Central Gaulish?	SAMCG?	1	0.27	3	0.04
Samian East Gaulish?	SAMEG?	4	1.08	88	1.15
Shell-gritted	SHEL	70	18.92	1039	13.59
<b>POTTERY</b>		<b>366</b>	<b>98.91</b>	<b>7614</b>	<b>99.63</b>
Fired clay	FCLAY	126		1977	
Tile	TILE	2		102	
Brick	BRICK	3		878	
<b>Total</b>		<b>497</b>	<b>100</b>	<b>10571</b>	<b>100</b>

Since the pottery covers finds from two different sites, the fabrics can be split between the two main fields, as Table 3, which also shows the average sherd weight by area and fabric.



Table 3 Fabrics by site

	Field 13				Field 6				Field 13	Field 6
	Shs	%	grams	%	Shs	%	grams	%	g/sh	g/sh
DWSH	7	3.4	140	3.2	2	1.3	24	0.8	20.0	12.0
GREY	166	81.4	3862	88.1	80	53.7	1840	61.8	23.3	23.0
GROG	0	0.0	0	0.0	1	0.7	94	3.2	-	94.0
LCOA?	0	0.0	0	0.0	2	1.3	42	1.4	-	21.0
MORT	1	0.5	14	0.3	1	0.7	12	0.4	14.0	12.0
NVCC	1	0.5	2	0.0	0	0.0	0	0.0	2.0	-
NVPA	2	1.0	2	0.0	0	0.0	0	0.0	1.0	-
OX	5	2.5	30	0.7	6	4.0	92	3.1	6.0	15.3
OXWS	0	0.0	0	0.0	1	0.7	56	1.9	-	56.0
PART?	0	0.0	0	0.0	1	0.7	15	0.5	-	15.0
SAMCG	2	1.0	9	0.2	2	1.3	7	0.2	4.5	3.5
SAMEG	3	1.5	80	1.8	0	0.0	0	0.0	26.7	-
?										
SHEL	17	8.3	246	5.6	53	35.6	793	26.7	14.5	15.0
<b>Total</b>	<b>204</b>	<b>100.0</b>	<b>4385</b>	<b>100.0</b>	<b>149</b>	<b>100.0</b>	<b>2975</b>	<b>100.0</b>	<b>21.5</b>	<b>20.0</b>
BRICK	2		454		1		424		227	424
TILE	0		0		2		102		-	51
FCLAY	122		1948		4		29		16.0	7.3
<b>Totals</b>	<b>328</b>		<b>6787</b>		<b>156</b>		<b>3530</b>			

This makes clear the differing composition of the two spatially separated groups of pottery, that from field 13 having 81-88% quartz-gritted grey wares, and only 6-8% shell-gritted coarse wares, while in field 6 the shell-gritted wares are more common at 27-36% of the assemblage, with correspondingly lower 54-62% grey wares. Apart from samian, the only fine wares came from field 13. Samian occurred in both groups, that from field 13 including probable East Gaulish vessels of later 2nd to 3rd century date.

The samples from both groups are too small to enable any conclusions to be drawn about the nature of the occupation, although the paucity of fine wares suggests they derive from relatively low status rural occupation. The absence of amphorae does not necessarily reflect on the quality of the occupation as these containers are comparatively rare from the mid 3rd century onwards.

### Field 13

The largest group is the mixed deposit context 012, with fragments of several wide-mouthed bowls, typical of the mid- to late-3rd century. Other 3rd century vessels include the shell-gritted dales ware jars (No 1), grooved rim dishes derived from BB2 types (from 004 and 009), a fragment of a mortarium with a thumbled spout (from 009), flanged bowls as Nos 4-5 (from 011 and 012) and wide-mouthed bowls as No6, this latter vessel probably running later 3rd century and possibly into the 4th century (from 012). The Nene Valley colour-coated ware consists of a single tiny sherd from a rouletted beaker, the fabric suggesting the mid to later 3rd century, from 009, the large shallow ?pond 010. Two tiny fragments from a single

closed form in Nene Valley Parchment ware also came from this feature, and are datable to the later 2nd century at the earliest, but are commoner in the 3rd century.

The five sherds of samian include two tiny fragments of Central Gaulish ware, the rest being from two East Gaulish vessels, a bowl and a mortarium, giving a range from the 2nd into the 3rd century. Types datable to the later 2nd to 3rd century include the dish with a drooping flange No 3 (from 014), the triangular rimmed bowl No 2 (from 012), while a fragment of an unusual dish type (known in Lincoln as type B321, as Webster 1949, fig 14, 72) is normally datable to the earlier 2nd century (from 009, the ?pond 010). There is also a body sherd from a jar or beaker with a carinated profile from the ?pond 010, probably a 2nd century type. Apart from the dales ware jars, the small quantity of shell-gritted sherds (SHEL) are all body sherds from closed forms, most probably hand-made. These are likely to belong to the earlier Roman period. The date range for the assemblage from Field 13 appears to be the early to mid 2nd century through to the later 3rd century, possibly into the 4th century.

## FIELD 6

Most of the pottery came from upper layer in the large enclosure ditch 113, with only four sherds from the primary deposit, not closely datable, including the cheese-press No 14, of which a joining sherd occurred in the upper layer context 131. This upper layer is dated by the dales ware jar rims, a shell-gritted lid-seated jar fragment, the shell-gritted flanged dish No 15, and the bowl No 16 in what appears to be a late pebbly fabric (LCOA) known from 4th century contexts in the city of Lincoln and elsewhere. There is also a fragment from a mortarium in an oxidised fabric with traces of a cream slip and slag trituration which is possibly from the late kilns at Swanpool, Lincoln. This pottery suggests a 4th century date, possibly late in the century, but the evidence is not abundant. Other vessels from context 131 include the grey flask neck No 9, which appears to be a type of the fine Parisian fabric, the necked bowl No 11, the triangular-rimmed bowl No 12, and the dish No 13 which is reminiscent of the samian form 36 although more upright. These vessels would all fit into mid to late 2nd century date. Two standard quartz-gritted oxidized red-brown footring bases came from 131, the forms being unknown but more likely to be of later Roman date. The fill of this ditch is clearly of mixed dates, ranging from 2nd to late 3rd/4th century. The grey wares are in more varied fabrics than seen in field 13.

None of the other deposits in this field produced sufficient pottery for reliable comment. The curvilinear ditch 114 produced a large jar, No 10, of the dolia type, a comparatively unusual form. The two tiny fragments of samian are both from the 2nd century Central Gaulish industry, and a footring base from a closed form, possibly a flagon, in white-slipped oxidized ware (from 131) was probably also of 2nd century date. The shell-gritted vessels, more common in this group, appear to be mostly wheel-thrown, consistent with a later Roman date. Notably the shell-gritted dales ware jars, four represented by rim fragments, are not hand-made as shown by the string mark on a base sherd, left by cutting the vessel from the wheel. This is unusual, and the shell inclusions are sparser than normally seen on jars nearer to the Humber estuary. The mode of manufacture with dales ware is difficult to determine since the rims appear to have been formed using a template and a slow-wheel or turntable, but the string-mark on the base is positive evidence for wheel-throwing. The date-range for the assemblage as a whole appears to be mid to late 2nd century through to the 4th century, possibly relatively late 4th century.

## OTHER FINDS

The brick and tile fragments from both areas appear to be post-Roman in date. The concentration of fired clay lies in field 13, but the fragments provide no evidence of their function, most being very fragmentary with variable levels of abrasion.

**CATALOGUE****Field 13**

- 1 DWSH. Dales ware jar, hand-made, dark grey fabric, with sparse shell inclusions. D16. 039.
- 2 GREY. Bowl with triangular rim, burnish lines interior and exterior. D12. 012.
- 3 GREY. Bowl with drooping flange, slight groove on rim, near a grooved flange type. D15. 014.
- 4 GREY. Bowl with low bead and flange, burnished surfaces. D10. 011 joining 012.
- 5 GREY. Bowl with bead and flange, light grey cortex, dark fabric and surfaces. D11. 011 joining 012.
- 6 GREY. Wide-mouthed bowl with tall neck, heavy rim, cf Swanpool, Webster & Booth 1947, type 37-43. D13. 012.
- 7 GREY. Plain-rimmed dish, string-marked base, occasional flint in fabric. D14. 039.
- 8 GREY. Plain-rimmed dish. D9. 009

**Field 6**

- 9 PART. Flask neck, spiral turning marks internally. Fine light grey fabric, darker surfaces. D1. 131.
- 10 GREY. Large jar of dolia type, grey fabric and surfaces with red-brown cortex; some mica in fabric. D7. 133.
- 11 GREY. Necked bowl, light grey fabric, red-brown cortex, and dark grey surfaces. D4. 131.
- 12 GREY. Bowl with triangular rim, dark grey fabric, lighter surfaces. D3. 131.
- 13 GREY. Dish, dark grey fabric; lighter cortex. D8. 133.
- 14 GREY. Cheese-press, dark grey fabric, light grey surfaces, burnished exterior and base; no holes on surviving fragment. D5. 131 joining with 132.
- 15 SHEL. Flanged dish, apparently wheel-made, burnished surfaces, dark grey fabric, sparse shell inclusions visible in fractures. D6. 131.
- 16 LCOA?. Bowl or large jar rim, harsh pebbly dark grey fabric. D2. 131.

**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.

- DWSH Shell-gritted dales ware jars, hand-made and wheel-finished from sources in north Lincolnshire around the Humber area. The sherds from the field 6 are unusual in being clearly wheel-made, and with sparser shell inclusions than normally seen on these jars. **NRFRC: DAL SH**
- GREY Grey, undifferentiated quartz-gritted grey fabrics, hard wares with sparse to common quartz inclusions.
- GROG Grog-tempered. A single grog-tempered rim fragment from a probable storage jar from field 6, context 131.
- LCOA A late coarse grey fabric with pebbly inclusions, common in the latest Roman deposits in Lincoln, and used for lid-seated and double lid-seated jars.
- MORT Two sherds from mortaria, neither definitely sourced: that from field 6 (context 131) is possibly an atypical product of the late Swanpool kilns in Lincoln with an oxidized fabric, grey cored, with a cream slip and slag trituration grits; the body sherd is notably thin walled, 4-8mm. The other sherd is a rim fragment in a light brown fabric, small and very abraded, with a thumbbed spout, indicating a date from the mid 3rd century (from field 13, context 009).
- NVCC Nene Valley colour-coat **NRFRC: LNVCC**
- NVPA Nene Valley parchment ware **NRFRC: LNVPA**
- 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. Both open and closed forms occur.
- OXWS Oxidized white slipped. Oxidized quartz-gritted red-brown fabric with exterior white slip, used most for flagons, unknown source.
- PART Parisian type, a very fine silty grey fabric, often with a sandwich fracture, usually with a fine black or grey polished external surface. Parisian ware is decorated with stamps or rouletting, and can be dated to the 2nd century (Elsdon 1982), although the fabric continues to be used in the later Roman period for different vessel forms (Darling 1984, 77-80). Parisian ware is known to have been made at the Market Rasen, Lincs. kilns (Darling forthcoming; **NRFRC: LMR FR**), and also at Doncaster (Buckland et al, 2001; **NRFRC: ROS FR**). Body sherds can be confused with London Ware, a very similar fabric, but used for different forms with differing decoration. This ware is common in London, but is also made in the Nene Valley (Perrin 1990). The single sherd is the flask No 9, and while the fabric is lighter than normally seen, the fineness and style of potting suggest it is a variety of Parisian ware.
- PRO Post-Roman sherds
- SAMCG Samian Central Gaul, from Lezoux. **NRFRC : LEZ SA**
- SAMEG Samian East Gaulish, mostly from Rheinzabern or Argonne. **NRFRC: RHZ SA; ARG SA**
- SHEL Shell-gritted, miscellaneous shell-gritted ware, not certainly of local origin.

**BIBLIOGRAPHY**

- Buckland, P., et al., 2001 P.C. Buckland, K.F. Hartley and V. Rigby, The Roman Pottery Kilns at Rossington Bridge Excavations 1956-1961, *Journ Roman Pottery Studies* 9.
- Darling, M.J., 1984 Roman Pottery from the Upper Defences, *Archaeology of Lincoln*, 16/2.
- Darling, M.J., forthcoming The Roman pottery kilns at Market Rasen
- Elsdon, S.M., 1982 *Parisian ware: a study of stamped wares of the Roman period in Lincolnshire, Humberside and South Yorkshire*, Vorda research series, 4, Vorda, Highworth.
- Perrin, J.R., 1990(a) Pottery of "London Ware" type from the Nene Valley, *Durobrivae*, 8, 1990, 8-10.
- Tomber, R. & Dore, J., 1998 *The National Roman Fabric Reference Collection: A Handbook*, MoLAS Monograph 2.
- Webster, G., 1949 'The Legionary Fortress at Lincoln', *Journ. Roman Stud.*, 39, 57-80.
- Webster, G. & Booth, N., 1947 The excavation of a Romano-British pottery kiln at Swanpool, Lincoln, *Antiq J*, 27, 61-79.

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## RECORDING CODES

### FORMS

Code	Expansion
B	Bowl
B321?	Bowl with inturned reeded flange as Lincoln type series
BCAR	Bowl carinated
BD	Bowl or dish
BDFL	Bowl or dish with flange
BDRR	Bowl or dish with rounded rim
BDTR	Bowl or dish with triangular rim
BEV	Bowl with everted rim
BFB	Bowl with bead and flange
BFBL	Bowl with low bead and flange
BKROU	Beaker body sherd with rouletting
BNK	Bowl necked
BTR	Bowl triangular rim
BWM	Bowl wide-mouthed
CHP	Cheese-press
CLSD	Closed form
D	Dish
DFL	Dish with flange
DG320?	Dish with groove of BB2 type as Gillam 320
DGR	Dish with grooved rim
DPR	Dish with plain rim/wall
F	Flagon
FS	Flask
J	Jar
JB	Jar or bowl
JBK	Jar or beaker
JBKEV	Jar or beaker with everted rim
JCAR	Jar carinated
JCUR	Jar curved rim
JDW	Jar of dales ware type
JL	Jar large
JLS	Jar with lid-seated rim
M	Mortarium

### MANUF/DECORATION

Code	Expansion
BHL	Burnished horizontal lines
BVL	Burnished vertical lines
HM	Hand-made
NOTC	Notched with a tool
PS	Painted stripes
ROU	Rouletted unknown extent
ROUZ	Rouletted zone
WM	Wheel-made

## ARCHIVE DATABASE

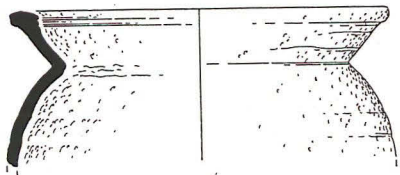
Field	Cxt	Fabric	Form	Manuf+	Ves	D?	DNo	Details	Link	Sherds	Weight
13	004	GREY	-	-	-	-	-	BSS	-	2	33
13	004	GREY	CLSD	-	-	1	-	BSS	-	2	9
13	004	GREY	DG320?	-	-	D?	-	RIM/PT WALL ONLY;BB2 TYPE W GROOVE	-	1	9
13	004	ZDATE	-	-	-	-	-	L2-3?	-	-	-
13	007	PRO	-	-	-	-	-	RIM;RB W GREEN/YELLOW GLAZE	-	1	37
13	007	ZDATE	-	-	-	-	-	POST-RO	-	-	-
13	009	GREY	-	-	-	-	-	BSS;MOSTLY FRESH	-	22	350
13	009	GREY	B?	-	-	-	-	BASE FRAG	-	1	34
13	009	GREY	BD	-	-	-	-	BASE FRAG	-	1	28
13	009	GREY	BD	-	-	-	-	BSS	-	2	39
13	009	GREY	BWM	-	-	-	-	RIM ONLY;SQ RIM;?LATE	-	1	60
13	009	GREY	BWM	-	1?	D?	-	RIM NON J SHLDR;DIAM 24	-	2	75
13	009	GREY	BWM?	-	1	-	-	BSS;TWIN GROOVES	-	2	82
13	009	GREY	D	-	1	-	-	BASE SHS	-	2	147
13	009	GREY	DGR	-	-	D?	-	RIM/PT WALL;AS BB2 TYPE;DIAM18	-	1	11
13	009	GREY	DPR	-	-	D	09	RIMS;DIAM22	-	5	74
13	009	GREY	JB	-	1	-	-	BSS J LGE J OR BOWL	-	3	119
13	009	GREY	JCAR?	-	-	D?	-	BS UNUSUAL W CARINATION;WALL SLOPING OUT	-	1	17
13	009	GREY	JCUR	-	-	D?	-	RIM>SHLDR;DIAM 14	-	2	16
13	009	MORT	M	-	-	-	-	RIM/FLANGE FR ONLY;LTBN FB;THUMBED SPOUT;VABR	-	1	14
13	009	NVCC	BKROU	ROUZ	-	-	-	BS CR-BN FAB	-	1	2
13	009	NVPA	CLSD	PS	1?	-	-	BSS PAINTED HORIZ STRIPE	-	2	2
13	009	OX?	B321?	-	-	D?	-	BS PART RIM;VABR;RB/GREY BURNT	-	1	8
13	009	OX?	B321?	-	-	-	-	BS POSS SAME BOWL;GREY CORE;RB SURFS	-	1	4
13	009	SAMCG	-	-	-	-	-	BS	-	1	8
13	009	SAMCG	-	-	-	-	-	FLAKE	-	1	1
13	009	SAMEG?	44?	-	-	-	-	BS W CORDON;ORANGE FAB	-	1	23
13	009	SAMEG?	45?	-	1	-	-	FTRG J BSS;INT SURF LOST;ABR	-	2	57
13	009	SHEL	-	-	-	-	-	BSS SOME RB EXT;MOST ABR	-	10	109
13	009	SHEL	J	HM	-	-	-	BS SHLDR PT NECK;VISIBLE MODERATE SHELL	-	1	29
13	009	ZDATE	-	-	-	-	-	L3	-	-	-
13	009	ZZZ	-	-	-	-	-	F.FRESH;SOME EARLIER;FRAG S'STONE	-	-	-
13	011	GREY	-	-	-	-	-	BSS	-	8	61
13	011	GREY	BD	-	-	-	-	BASE FRAG;DKGRY	-	1	11
13	011	GREY	BFB	-	-	D	11	FLANGE FRAG;JOINS	012	1	3
13	011	GREY	BFBL	-	-	D	10	RIM/WALL;JOINS	012	1	26
13	011	SHEL	-	HM	-	-	-	BS;?BURNT INT;RB EXT;VESIC	-	1	8
13	011	ZDATE	-	-	-	-	-	L3-4	-	-	-
13	011	ZZZ	-	-	-	-	-	JOINS 012	-	-	-
13	012	GREY	-	-	-	-	-	BSS;MANY FRESH & PROB X BWM'S	-	22	453
13	012	GREY	BDFL	-	-	-	-	RIM/PT WALL;STUBBY FLANGE	-	1	9
13	012	GREY	BFB	-	1	D	11	RIMS/WALL;JOINS;DIAM 21	011	4	77
13	012	GREY	BFBL	-	1	D	10	COMP PROF;DIAM18;JOINS	011	3	135
13	012	GREY	BTR	-	-	D	12	RIM/PT WALL;DIAM 15	-	1	28
13	012	GREY	BWM	-	1	D	13	RIM/NECK;DIAM 40;LATE HIGH NECK	-	2	159
13	012	GREY	BWM	-	-	-	-	RIM/NECK;SIMILAR TYPE	-	1	38
13	012	GREY	BWM	-	-	-	-	RIM/NECK;UCUT	-	1	23
13	012	GREY	BWM	-	-	-	-	RIM ONLY;CURVED	-	1	27
13	012	GREY	BWM	-	1	-	-	NECK/SHLDR	-	3	69
13	012	GREY	BWM	-	2	-	-	NECKS;PT SHLDERS	-	2	23
13	012	GREY	BWM	-	1	-	-	BSS;GROOVES X2	-	2	58
13	012	GREY	BWM	-	-	-	-	BS;GROOVES X 2	-	1	43
13	012	GREY	BWM	-	-	-	-	NECK	-	1	11
13	012	GREY	BWM?	-	1	-	-	BASE FRAGS;LGE VESS;STRING	-	2	165
13	012	GREY	BWM?	-	-	-	-	BASE FRAG;STRING	-	1	164
13	012	GREY	BWM?	-	-	-	-	BASE FRAG	-	1	66
13	012	GREY	BWM?	-	-	-	-	BASE LGE;VABR	-	1	36
13	012	GREY	CLSD	BVL;BH L	-	-	-	BS TWIN BVL CROSSED BY WIDE BHL	-	1	15
13	012	GREY	DPR	-	1?	D?	-	RIMS/WALL;DKGRY SURFS	-	2	76
13	012	GREY	DPR	-	-	-	-	RIM/WALL	-	1	27
13	012	GREY	J	-	1?	-	-	BSS	-	13	80

13	012	GREY	J?	-	-	-	-	BASE FTM	-	1	14
13	012	GREY	J?	-	1	-	-	BASE FLAKED	-	2	55
13	012	OX	CLSD	ROU?	1	-	-	BSS LTBN;TRACE ROU EDGE BS;ABR	-	2	14
13	012	OX	J?	-	-	-	-	RIM FR;LTRB	-	1	4
13	012	SHEL	-	HM	-	-	-	BSS VESIC;GRY/BN;NO VISIBLE SHEL	-	2	63
13	012	SHEL	-	HM?	-	-	-	CHIP W SHELL	-	1	3
13	012	SHEL	J?	HM?	-	-	-	BASE;ABR	-	1	30
13	012	ZDATE	-	-	-	-	-	L3-4	-	-	-
13	012	ZZZ	-	-	-	-	-	JOINS 011;LOTS BWM;F.FRESH	-	-	-
13	013	GREY	-	-	-	-	-	BSS	-	3	20
13	013	ZDATE	-	-	-	-	-	ROM	-	-	-
13	014	GREY	-	-	-	-	-	BSS	-	4	16
13	014	GREY	BDFL	-	1	D	15	RIM/WALL;DIAM20;DROOPING FLANGE	-	2	87
13	014	GREY	DPR	-	-	D?	-	RIM/WALL;STRAIGHT WALL	-	1	17
13	014	GREY	JBK	-	-	-	-	RIM TURNED OVER;PT NECK;DIAM12	-	1	7
13	014	ZDATE	-	-	-	-	-	3C?	-	-	-
13	014	ZZZ	-	-	-	-	-	NOT MUCH DATING	-	-	-
13	017	GREY	-	-	-	-	-	BS ABR	-	1	10
13	017	ZDATE	-	-	-	-	-	ROM	-	-	-
13	017	ZZZ	-	-	-	-	-	ABR	-	-	-
13	021	GREY	BDRR	-	1	-	-	RIM FRAG;NON J BSS	-	2	24
13	021	GREY	CLSD	-	-	-	-	BS DKGRY SURF;RB CORT	-	1	9
13	021	ZDATE	-	-	-	-	-	L2-3	-	-	-
13	025	GREY	-	-	-	-	-	BSS	-	2	22
13	025	ZDATE	-	-	-	-	-	ROM	-	-	-
13	039	DWSH	JDW	HM	1	D	16	RIM/PT WALL;DIAM 20	-	2	92
13	039	GREY	-	-	-	-	-	BS;THIN WALL	-	1	2
13	039	GREY	D	-	-	-	-	BASE 50%;DKGRY;SOOT U'SIDE	-	1	162
13	039	GREY	DPR	-	1	D	14	COMP PROF;50% BASE STRING;DIAM18	-	2	196
13	039	GREY	JB	-	-	-	-	BASE PROB BOWL	-	1	67
13	039	GREY	JCUR	-	-	-	-	RIM/PT SHLDR;GROOVE EXT RIM;F.THIN WALL	-	1	15
13	039	ZDATE	-	-	-	-	-	M3	-	-	-
13	043	GREY	-	-	-	-	-	BSS;ABR	-	3	12
13	043	GREY	JB	-	1?	-	-	BASE NON J BSS;TWIN GROOVES	-	3	85
13	043	SHEL	-	-	-	-	-	BS VABR;VESIC;RB EXT	-	1	4
13	043	ZDATE	-	-	-	-	-	2-3C?	-	-	-
13	043	ZZZ	-	-	-	-	-	SOME ABR;NO STRONG DATING	-	-	-
13	050	DWSH	JDW	HM	-	-	-	RIM SOOTED INT/EXT	-	1	18
13	050	GREY	-	-	-	-	-	BSS	-	3	24
13	050	GREY	BD	-	-	-	-	BASE FRAG	-	1	14
13	050	GREY	BD?	-	-	-	-	BASE FRAG	-	1	9
13	050	GREY	CLSD	NOTC	-	-	-	BS W NOTC CORDON	-	1	9
13	050	ZDATE	-	-	-	-	-	M3	-	-	-
13	059	DWSH	JDW	HM	1	-	-	RIM BSS;RB EXT	-	4	30
13	059	ZDATE	-	-	-	-	-	M3	-	-	-
06	101	FCLAY?	-	-	1?	-	-	FRAGS;DKGRY;RB SURF;?TILE	-	3	20
06	101	GREY	-	-	-	-	-	BSS ABR	-	5	71
06	101	GREY	B?	-	-	-	-	BS NECK/SHLDR	-	1	14
06	101	GREY	B?	-	-	-	-	BS ?SHLDR	-	1	26
06	101	GREY	BEV?	-	-	-	-	RIM ONLY;FCOARSE DKGRY;DIAM20;BURNT RIM	-	1	25
06	101	GREY	JL	-	-	-	-	BS THICK >19MM;ABR	-	1	170
06	101	SHEL	-	HM?	-	-	-	BS;VESIC	-	1	11
06	101	SHEL	-	-	-	-	-	CHIP ONLY;VISIBLE SHELL	-	1	1
06	101	ZDATE	-	-	-	-	-	2-3C	-	-	-
06	101	ZZZ	-	-	-	-	-	SOME ABRASION	-	-	-
06	107	GREY	-	-	-	-	-	BS	-	1	15
06	107	SAMCG	BD	-	-	-	-	BS	-	1	4
06	107	ZDATE	-	-	-	-	-	2C	-	-	-
06	107	ZZZ	-	-	-	-	-	DATE ON SAMIAN	-	-	-
06	119	GREY	-	-	-	-	-	BSS	-	2	14
06	119	ZDATE	-	-	-	-	-	ROM	-	-	-
06	121	GREY	-	-	-	-	-	BS	-	1	4
06	121	SHEL	-	-	-	-	-	BS GRY W BN EXT;WM?	-	1	16
06	121	ZDATE	-	-	-	-	-	ROM	-	-	-
06	122	GREY	-	-	-	-	-	BASE FTM W GROOVE U'SIDE	-	1	38
06	122	GREY	-	-	-	-	-	BSS MOST ABR	-	8	103
06	122	GREY	BD?	-	-	-	-	BASE FRAG;DKGRY	-	1	11

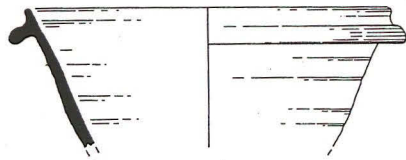


06	122	GREY	BWM	-	-	-	-	RIM ONLY;UCUT	-	1	42
06	122	GREY	BWM	-	-	-	-	RIM ONLY;UCUT	-	1	55
06	122	GREY	J	-	-	-	-	BS NECK/SHLDR;LTGRY;VABR	-	1	8
06	122	GREY	J?	-	-	-	-	BASE STRING;BSS;LTBN CORT;DKGRY F&S	-	2	29
06	122	GREY	JBKEV	-	-	-	-	RIM RB FAB;DKGRY SURFS;ABR	-	1	4
06	122	OX	-	-	-	-	-	BSS GRY W RB SURFS;BURNT	-	2	23
06	122	SHEL	J	-	-	-	-	BS SHLDR;DKGRY;SHELL VISIBLE;WM?	-	1	8
06	122	ZDATE	-	-	-	-	-	L3+	-	-	-
06	122	ZZZ	-	-	-	-	-	SOME ABRADED	-	-	-
06	123	GREY	BD	-	-	-	-	BASE FRAG	-	1	44
06	123	ZDATE	-	-	-	-	-	2-3C	-	-	-
06	128	DWSH	J	-	-	-	-	BS PT NECK/SHLDR;BS;SOOTED INT/EXT;DKGRY;SP.SHELL	-	2	24
06	128	GREY	-	-	-	-	-	BSS;SOME ABR	-	5	83
06	128	GREY	-	-	-	-	-	BS ?SHLDR;VABR;GRITTY GRYBN	-	1	20
06	128	GREY	BWM	-	-	-	-	RIM ONLY;CURVED	-	1	14
06	128	ZDATE	-	-	-	-	-	M3	-	-	-
06	128	ZZZ	-	-	-	-	-	SOME ABRASION	-	-	-
06	131	FCLAY	-	-	-	-	-	LUMP;LTBN/GRY	-	1	9
06	131	PART?	FS	-	-	D	01	RIM/NECKDIAM 4.5	-	1	15
06	131	GREY	-	-	-	-	-	BSS SOME ABR	-	20	181
06	131	GREY	B?	-	-	-	-	BS;NECK/SHLDR >GROOVE	-	1	16
06	131	GREY	BCAR?	-	-	-	-	BS W CARINATION	-	1	9
06	131	GREY	BDFL	-	-	-	-	RIM/PT WALL;RIM STUBBY FLANGE	-	1	8
06	131	GREY	BNK	-	-	D	04	RIM/PT WALL;CURVED RIM;DIAM 18	-	1	19
06	131	GREY	BTR	-	-	D	03	RIM/PT WALL;DIAM 22	-	1	78
06	131	GREY	CHP	-	1	D	05	COMP PROF;DKGRY;LTER SURFS;DIAM 16;JOINS	132	2	31
06	131	GREY	DPR	-	-	-	-	RIM FRAG VABR	-	1	5
06	131	GREY	DPR	-	-	D?	-	COMP PROF;ABR	-	1	23
06	131	GREY	DPR?	-	-	-	-	RIM FRAG ONLY	-	1	6
06	131	GREY	J	-	1	-	-	BASE PLAIN;BSS	-	3	92
06	131	GREY	JB	-	-	-	-	BS GROOVED	-	1	9
06	131	GROG	JS?	-	-	-	-	RIM FRAG ONLY;VABR	-	1	94
06	131	LCOA?	B	-	-	D	02	RIM ONLY;DIAM 24	-	1	29
06	131	LCOA?	CLSD	-	-	-	-	BS DKGRY;COMMON PEBBLY INCLS;HARSH	-	1	13
06	131	MORT	M	-	-	-	-	BS THIN WALL 4-8MM;GRY CORE;LTBN;TRACE CR SLIP;TG SLAG	-	1	12
06	131	OX	-	-	2	-	-	FTRG BASES;ABR;RB FAB;FM U/K	-	2	38
06	131	OX	-	-	-	-	-	BS FLAKED;VABR;RB;THICKISH 10MM+	-	1	27
06	131	OX	CLSD	-	-	-	-	BS LTRB	-	1	4
06	131	OXWS	F?	-	-	-	-	FTRG BASE;?FLASK	-	1	56
06	131	SAMCG?	BD	-	-	-	-	BS;ABR	-	1	3
06	131	SHEL	DFL	WM	1	D	06	COMP PROF;BSS;FLAKES;DKGRY;DIAM20	-	20	357
06	131	SHEL	J	WM	1	D?	-	BASE/BSS;VESIC;STRING;SPARSE SHELL	-	14	244
06	131	SHEL	J	WM	-	-	-	BASE STRING	-	1	19
06	131	SHEL	J	-	-	-	-	BSS VESIC;SPARSE SHELL	-	6	31
06	131	SHEL	JCUR	-	-	-	-	RIM FRAG ONLY;VABR;?WM	-	1	10
06	131	SHEL	JDW	-	1	-	-	RIMS J;SOOT INT RIM;SPARSE SHELL;NOT DEF HM	-	2	34
06	131	SHEL	JDW	-	3	-	-	RIMS;SPARSE SHELL;?HM	-	3	47
06	131	SHEL	JLS	-	-	-	-	RIM FRAG ONLY;VABR	-	1	12
06	131	ZDATE	-	-	-	-	-	4C?	-	-	-
06	131	ZZZ	-	-	-	-	-	SOME ABR;FRAG BURNT BONE & ?SLATE;JOINS 132	-	-	-
06	132	GREY	-	-	-	-	-	BS ABR	-	1	27
06	132	GREY	CHP	-	-	D	05	RIM FRAG;DIAM 16;JOINS	131	1	6
06	132	GREY	JB	-	1	-	-	BSS J	-	2	60
06	132	ZDATE	-	-	-	-	-	3-4C	-	-	-
06	132	ZZZ	-	-	-	-	-	JOINS 131	-	-	-
06	133	GREY	-	-	-	-	-	BS SANDY NR LCOA FAB;SOOTED	-	1	22
06	133	GREY	B?	-	-	-	-	BS THICK >11MM;BASAL ZONE	-	1	56
06	133	GREY	D	-	-	D	08	RIM/PT WALL;CURVED;CF SAMIAN 35/6 TYPE;DIAM 20	-	1	17
06	133	GREY	JL	-	-	D	07	RIM/SHLDR;RIM TURNOVER;DOLIA TYPE?;DIAM28?	-	2	385
06	133	SHEL	-	-	-	-	-	BS/CHIP;VESIC	-	1	3
06	133	ZDATE	-	-	-	-	-	3-4C	-	-	-
13	US F13	DWSH?	JDW	-	1	-	-	RIMS J;VESIC;ABR;NO VISIBLE SHELL	-	2	42
13	US F13	GREY	BDTR	-	-	-	-	RIM/PT WALL	-	1	27

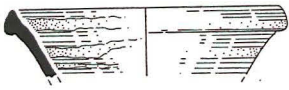
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13	US F13	GREY	BWM	-	-	D?	-	RIM/SHLDR;DIAM 22;CURVED RIM	-	1	36
13	US F13	GREY	BWM?	-	-	-	-	BS NECK/PT SHLDR	-	1	22
13	US F13	OX	-	-	-	-	-	BS THICK>13MM;LTRB SMOOTH EXT;SOME CALC INCLS	-	1	27
13	US F13	SAMEG?	-	-	-	-	-	BS;CALC.INCLS	-	1	8
13	US F13	ZDATE	-	-	-	-	-	L3-?4	-	-	-
-	US F 10	PRO	-	-	-	-	-	BS GREY;RB EXT SKIN	-	1	6
-	US F 10	ZDATE	-	-	-	-	-	POST-RO	-	-	-
-	US F 11	GREY	-	-	-	-	-	BS	-	1	6
-	US F 11	PRO	-	-	-	-	-	BS GRY W GREEN GLAZE EXT	-	1	9
-	US F 11	ZDATE	-	-	-	-	-	POST-RO	-	-	-
-	US F 8	GREY	-	-	-	-	-	BS	-	1	2
-	US F 8	ZDATE	-	-	-	-	-	ROM	-	-	-
										370	7643



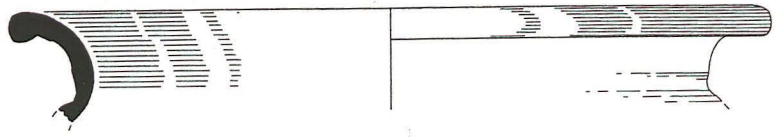
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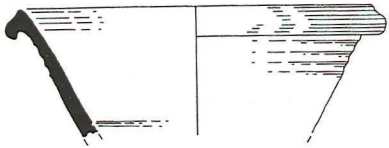
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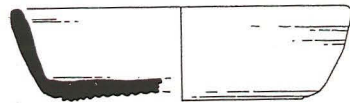
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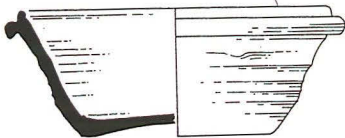
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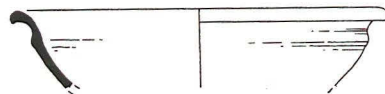
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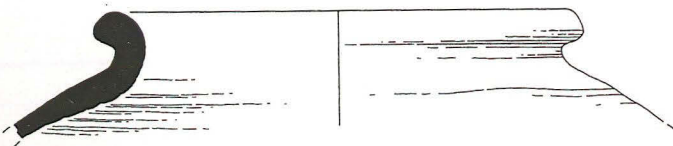
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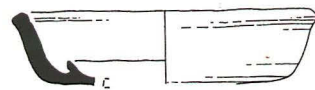
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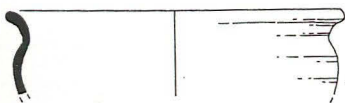
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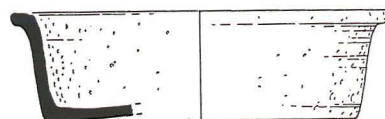
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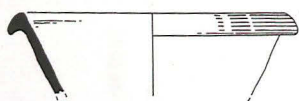
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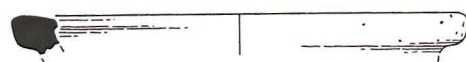
11



15



12



16



## APPENDIX 4: Post-Roman pottery report

Jane Young

trench	context	cname	sub fabric	full name	form type	sherds	weight	part	description	date
	103	TOY	A	Toynton Medieval Ware	jug	1	80	handle	? ID as too much rounded quartz; neat grooved rod handle; abraded lower ext surface	late 13th to 14th
Field 10	u/s	TOY	D	Toynton Medieval Ware	jug/jar	1	8	BS	very abraded	13th to 15th
Field 11	u/s	LMLOC	reduced with oxid surfs; fine sandy; hard	Late Medieval local fabrics	jug/jar	1	14	BS	abraded; ? Toynton	15th to 16th

12 February 2004

## APPENDIX 5: Environmental Archaeology Assessment

### Maltby-le-Marsh to Manby Pipeline – MMP03

#### *Introduction*

Three soil samples (Table 1) and a small assemblage of animal bones were collected from an evaluation excavation conducted by Pre-Construct Archaeology (Lincoln) on the Maltby-le-Marsh to Manby Pipeline. Two samples were apparently associated with what was thought to be a saltmaking site and the third was taken from the fill of an enclosure ditch. All three samples are dated to the Romano-British period. The samples were submitted to the Environmental Archaeology Consultancy for processing and assessment, along with the small collection of animal bones.

**Table 1:** MMP03. Samples taken for environmental assessment

Sample no.	context	context type	date
1	009	fill of possible pond	Romano-British
2	013	upper fill of pit 015	Romano-British
3	131	upper fill of enclosure ditch 113	Romano-British

#### *Methods*

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

The residues were sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheets and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammer scale and prill. The residues were then discarded. The flots were studied using x10 magnifications and the presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones etc) were noted and their abundance and species diversity recorded on the assessment sheet. The flots were then bagged and along with the finds from the sorted residues, constitute the material archive of the samples.

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

#### *Results*

The samples contained a few recent rootlets and one or two uncharred seeds which are presumed to be intrusive. The residues of samples 1 and 2 were composed largely of fired earth, while that of sample 3 was composed of sediment crumb with some stone and flint gravel.

Archaeological finds in the samples include a little pottery, quantities of fired earth and a few grammes of animal bone. In addition sample 3 contained several flakes of flint and some flake and spheroidal hammer scale. A small quantity of fuel ash slag was present in the flot of sample

2 and a single small piece of coal was recovered from the residue of sample 3. The latter might be a contaminant that has moved down through the soil.

**Table 2:** MMP03. Archaeological finds from the processed samples

Sam p no.	cont no.	samp vol (l)	residue vol. (ml)	pot no/wt g.	flint no/wt	ham'r scale #	fired earth wt g.	fuel ash slag	coal	bone wt g.
1	009	20	600	2/9		-	57	-	-	1
2	013	20	800	3/15		-	98	+		9
3	131	20	1200	5/28	14/3	9	16		+	19

**Table 3:** MMP03. Environmental finds from the processed samples

Sam p no.	cont no.	samp vol (l)	residue vol. (ml)	flot vol (ml)	char-coal *	charr'd grain *	charr'd chaff *	charr'd seed *	snails *	Preliminary identifications
1	009	20	600	90	3/3	5	5	4	2/2	Wheat, <i>Galium</i> , <i>Punctum pygmaeum</i> , <i>Valvata cristata</i> , <i>V. macrostoma</i> , <i>Lymnaea peregra</i> , <i>Planorbis leucostoma</i> , <i>P. planorbis</i> , <i>Bithynia tentaculata</i> , <i>Vallonia excentrica</i> , <i>Hygromia hispida</i> , <i>Cochlicopa</i> sp.
2	013	20	800	20	2/2	4	4	3	2/2	Wheat, barley?, <i>B. tentaculata</i> , <i>P. planorbis</i> , <i>P. leucostoma</i> , <i>L. peregra</i> , <i>V. macrostoma</i> , <i>H. hispida</i> , <i>Retinella nitidula</i> , <i>V. excentrica</i> , <i>Vertigo</i> sp.
3	131	20	1200	6	3/2	2		2	1/1	Wheat, barley, <i>Vallonia</i> sp., sheep/goat, mole, field vole, small fish

\* = abundance: 1=1-10, 2=11-50, 3=51-150, 4=151-250, 5=250+

# number of items

+ present as small fragments

The flots from samples 1 and 2 are dominated by charred wheat grains and chaff, which occur in large quantities, along with a number of charred weed seeds and a little charcoal. Both these samples would appear to contain the debris from crop processing activities with the quantity of chaff in similar proportions to the charred grains. The fact that fired earth formed the matrix of the residue of both these samples suggests a similar origin for the material and it is possible that it derives from a corn drier, kiln or hearth structure along with the burnt remains of the cereal crop. Rather than reflecting salt making activity these two samples suggest agricultural activity implying a farmstead.

The flot from sample 3 is small and contains a few charred cereal grains and weed seeds. Bone fragments of sheep/goat, small fish, field vole and mole were identified in this sample.

All three samples have produced a small snail assemblage. This is more substantial in samples 1 and 2 and shows a mixture of freshwater taxa, *Planorbis planorbis*, *P. leucostoma*, *Valvata cristata*, *V. macrostoma*, *Bithynia tentaculata* and *Lymnaea peregra*, and terrestrial snails, *Vallonia excentrica*, *Vertigo* sp., *Cochlicopa* sp., *Hygromia hispida*, *Punctum pygmaeum* and *Retinella nitidula*. The aquatic elements may reflect the nature of the contexts, context 009 was interpreted as a pond, or indicate the disposal of material from a freshwater source into the features.

#### **Animal Bone**

The small assemblage of animal bone derives from eleven contexts and comprises 55 bone fragments (Table 4). All the bone is in good condition. The bones have been identified and

recorded following the procedures of the Environmental Archaeology Consultancy (see attached Key) and the catalogue is attached to this report.

**Table 4.** Number of fragments of each taxa in the hand collected bone sample

species	no.
Horse	4
Cattle	26
Cattle size	10
Sheep/goat	10
Sheep	1
Sheep size	1
Pig	2
Goose	1
<b>TOTAL</b>	<b>55</b>

Bones of horse, cattle, sheep, pig and goose have been identified (Table 4). None of the fragments indicate juveniles, although bones of immature animals are present. Five are gnawed by dogs and two show pathologies.

#### *Discussion and Recommendations*

The samples from contexts 009 and 013 suggest crop processing activities at the site which might imply a farmstead. Although both samples include a substantial quantity of fired earth, the bulk of the medium and fine residues being composed of this, there is nothing to suggest this is briquetage, and it could equally derive from a fired clay structure such as a kiln, corn drier or hearth. The charred botanical remains in both these samples warrant detailed archaeobotanical study even if no further archaeological work is undertaken on the site. The presence of an aquatic snail fauna in the samples suggests that damp freshwater conditions prevailed at the site or these snails were introduced with vegetation from such an environment.

The sample from context 131 indicates an occupation context with the hammerscale being evidence for iron smithing in the area, and the animal bone and charred grains probably representing food waste. There is no chaff among the charred remains from this sample.

Little can be made of the small sample of animal bone, although cattle bones dominate the assemblage with sheep/goat next in abundance.

If further fieldwork is undertaken at the site the charred plant remains are likely to have the highest potential and sampling and analysis should be concentrated on the palaeoeconomic aspects of the site. The animal bone is well preserved and if it occurs in any abundance will afford a good sample for understanding the domestic animal economy of the site. There is no evidence in the samples for salt-making at the site and the context of the site should be re-assessed on the basis of the above data. The botanical assemblages from samples 1 and 2 deserve further more detailed study irrespective of whether further fieldwork is undertaken.

***Acknowledgements***

I should like to thank Trude Maynard for the sample washing and processing.

***Bibliography***

Williams, D. 1973 Flotation at Siraf, *Antiquity*, 47, 198-202

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The Environmental Archaeology Consultancy  
11<sup>th</sup> September 2003



# THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

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

### SPECIES:

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

## BONE ELEMENT:

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

**NUMBER:** number of fragments in the entry

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

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

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

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

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

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

Teeth are labelled as follows in the tooth wear column:

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

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

Some measurements have been taken on juveniles. Measurements marked L1 are the greatest length of long bones lacking one unfused epiphysis – the measurement being taken from the epiphyseal junction. Measurements marked L2 are the greatest length of the long bones between epiphyseal junctions when both epiphyses are unfused.

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

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

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

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

**ZONES** - codes used to define the zones on each bone

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

## Archive Catalogue of Animal bone from the Maltby-le-Marsh to Manby Pipeline – MMP03

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preservation
MMP03	009	BOS	FEM	1	R		4						DISTAL SHAFT FRAGMENT WITH FOSSA-2 PIECES	4
MMP03	009	CSZ	RIB	1	F								SHAFT FRAGMENT	4
MMP03	009	OVCA	MTT	1	F								SHAFT-14 PIECES	4
MMP03	009	OVCA	SCP	1	R	DF	123						GLENOID AND NECK	4
MMP03	009	OVCA	SCP	1	R								DISTAL BLADE AND BASE SPINE-DIFFERENT INDIV FROM ABOVE	4
MMP03	009	OVI	MTC	1	L	DF	12345						COMPLETED BUT FRAGMENTED-MODERN BREAKS-10 PIECES	4
MMP03	021	BOS	MAN	1	R		2						DIASTEMA FRAGMENT	4
MMP03	021	CSZ	LBF	1	F								SHAFT FRAGMENT	4
MMP03	039	OVCA	RAD	1	R		3		DG				MIDSHAFT-BOTH ENDS CHEWED- 2 PIECES	4
MMP03	043	OVCA	MTT	1	F								MIDSHAFT-4 PIECES	4
MMP03	043	OVCA	TIB	1	L	DF	567				Bd-30 Dd-22.8		DISTAL END	4
MMP03	050	BOS	UM1	1	L								COMPLETE	4
MMP03	059	OVCA	UM2	1	R					I15 J11			ROOTS BROKEN	4
MMP03	119	BOS	AST	1	L		1				L1-61.2 L2-56.4 Bp-40.7 Bd-36 Dd-27.8		COMPLETE-POROUS-JUV	4
MMP03	121	BOS	TTH	1	F								FRAGMENTED- 4 PIECES	4
MMP03	121	CSZ	UNI	1	F								INDET- 2 PIECES	4
MMP03	121	CSZ	VER	1	F	AF							INDET- 2 PIECES	4
MMP03	121	OVCA	MAN	1	R								POST VENTRAL RAMUS FRAGMENT	4
MMP03	122	BOS	ATL	1	R				DG				RIGHT SIDE CENTRUM-POSS CHOPPED DOWN MIDDLE-EDGES CHEWED	4
MMP03	122	BOS	RAD	1	R	PF	123				Bp-73.4 Dp-36.9		PROXIMAL THIRD	4
MMP03	122	CSZ	RIB	1	F								SHAFT FRAGMENT	4
MMP03	122	CSZ	UNI	1	F								INDET	4
MMP03	122	CSZ	VER	1	F		1						SPINE-PROBABLY HORSE CEV	4
MMP03	122	EQU	CEV	1	F	CFAN	1245						PERIPHERAL DAMAGE	4
MMP03	122	EQU	CEV	1	F	AF	3						FRAGMENT POST CENTRUM	4
MMP03	122	EQU	LM	1	R								COMPLETE-MED WEAR	4
MMP03	128	BOS	HC	1	L		1						BASAL HALF-SHORT-UPWARD CURVING-SL POROUS	4
MMP03	128	BOS	HC	1	R		1						COMPLETE-SHORT-UPWARD AND SL BACKWARD CURVING-SL POROUS	4
MMP03	128	BOS	MAN	1	R		67			J11K7			POST HORI RAMUS- 6 PIECES	4
MMP03	128	BOS	MAN	1	R		23			fgh1411			ANT TOOTH ROW AND DIASTEMA- 5 PIECES	4
MMP03	128	BOS	MTT	1	F							P	FRAG SPLIT PROX END-SLIGHT GROWTH AROUND FACET	4
MMP03	128	BOS	SKL	1	F								FRONTAL- 6 PIECES-POSS PART OF ABOVE	4
MMP03	128	BOS	SKL	1	F		22						OCCIPITAL-4 PIECES	4
MMP03	128	BOS	SKL	1	R		8						TEMPORAL FRAGMENT-POSS PART OF ABOVE	4
MMP03	128	OVCA	MTT	1	R		12						PROXIMAL HALF- 2 PIECES	4
MMP03	131	BOS	FEM	1	R	PFDf	34567						SHAFT AND DISTAL END-DAMAGED- 5 PIECES	4
MMP03	131	BOS	INN	1	L	EF	59						LATERAL ACETAB FRAGMENT-FEMALE?- 2 PIECES	4
MMP03	131	BOS	MAN	1	L								POST FRAGMENT OF VENTRAL ASC RAMUS	4
MMP03	131	BOS	MTC	1	F								SPLIT SHAFT FRAGMENT	4
MMP03	131	BOS	MTT	1	L				DG				SPLIT ANT PROX END-END CHEWED	4
MMP03	131	BOS	MTT	1	R	DF	12345				GL-219 Bp-45.7 Dp-49 SD-22.9 Bd-50.5 Dd-28.7	P	COMPLETE- 2 PIECES-HEAVILY PITTED & GROOVED PROX FACET & EXOSTOSES AROUND JOINT	4
MMP03	131	BOS	SCP	1	L								DISTAL CAUDAL MARGIN OF BLADE- 2 PIECES	4
MMP03	131	BOS	SCP	1	R	DF	1235		DG				GLENOID-NECK AND DISTAL BLADE- 3 PIECES-GLENOID TUB CHEWED	4
MMP03	131	BOS	SKL	1	F		9			g16 H5115,J12K6			FRAGMENTED MAXILLAE- 22 PIECES	4
MMP03	131	BOS	TRV	1	F	CNAJ	1345		ROD				CENTRUM AND ARCH AND PART SPINE-SPINE GNAWED-2 PIECES	4
MMP03	131	BOS	UM3	1	L					K11			ROOTS BROKEN	4
MMP03	131	CSZ	RIB	1	F								SHAFT FRAGMENT	4
MMP03	131	CSZ	UNI	1	F								INDET	4
MMP03	131	CSZ	UNI	1	F				DG				INDET-CHEWED	4

site	context	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preservation
MMP03	131	EQU	MTT	1	L	DN	12						COMPLETE EXCEPT FOR DISTAL EPIPHYSIS LONG AND POROUS-FOAM- 2 PIECES	4
MMP03	131	GOOS	ULN	1	F								MIDSHAFT- 2 PIECES	4
MMP03	131	OVCA	MAN	1	L					h13 I11J6			FRAGMENTED RAMUS FRAG-5 PIECES	4
MMP03	131	SSZ	LBF	1	F								SHAFT FRAGMENT	4
MMP03	131	SUS	MAN	1	L		6		DG				ANGLE-CHEWED	4
MMP03	131	SUS	TIB	1	F								SPLIT DISTAL MIDSHAFT FRAGMENT	4

APPENDIX 6: List of archaeological contexts

<i>Context</i>	<i>Type</i>	<i>Description</i>
001	Layer	Dark brown silty loam - Plough soil
002	Layer	Grey/brown silty clay - subsoil Fields 6, 19-23
003	Layer	Light brownish yellow silt - subsoil Field 14
004	-	Unstratified finds allocation number - Field 13
005	Layer	Mottled grey/brown clay - natural, Field 13
006	Layer	Mottled grey/brown clay - dyke upcast, Field 13
007	Fill	Dark brownish grey silty clay - fill of [008]
008	Cut	Narrow linear feature, cut by [010]
009	Fill	Very dark grey silty clay - upper fill of [010]
010	Cut	Large shallow feature - possible pond, contains (009), (025)
011	Fill	Dark grey silty clay. Fill of [016] - same as (014)
012	Layer	Mixed deposit sealing features in Field 13
013	Fill	Mixed dark brown/grey silty clay - upper fill of [015]
014	Fill	Dark grey silty clay - Fill of [016]
015	Cut	Subcircular pit, contains (013), (020), (028)
016	Cut	Curvilinear gully, contains (011)/(014)
017	Fill	Dark grey silty clay, sealing layer [015]/[016]/[026] - same as (009)?
018	Layer	Brown sandy clay - topsoil, Field 9
019	Layer	Brown clay with grey mottling - natural Fields 10, 11, 12
020	Fill	Grey clay, red/brown mottling - secondary fill of [015]
021	-	Void
022	Layer	Brown sandy clay - subsoil Field 8
023	Structure	Fragmentary remains of L-shaped brick wall, Field 5
024	Structure	Remains of brick wall, e. of [023], Field 5
025	Fill	Grey/brown clay - primary fill of [010]
026	Cut	Linear feature, aligned N-S, contains (027)
027	Fill	Light grey clay - alluvial deposit filling ditch [026]
028	Fill	Pale grey clay - primary fill of [015]
029	Cut	Curvilinear gully abuts [016] - contains (030)
030	Fill	Dark grey clay - fill of (029)
031	Cut	Large NE-SW linear drainage feature/possible palaeochannel - contains (050), (051)
032	Cut	Subcircular post hole - contains (038)
033	Cut	Small circular pit containing large amounts of pottery - contains (039)
034	Cut	Elongated pit, much deeper at SW end. Cuts [035] - contains (041)
035	Cut	Small subcircular pit, cut by [034] - contains (040)
036	Cut	Narrow linear feature, parallel to [038] - contains (042)
037	Cut	Irregular linear feature, parallel to [036] - contains (043)
038	Fill	Very dark grey silty clay - fill of [032]
039	Fill	Very dark grey silty clay - fill of [033]
040	Fill	Dark grey clay - fill of [035]
041	Fill	Dark grey clay, lenses of brown clay - fill of [034]
042	Fill	Dark grey clay - fill of [036]
043	Fill	Dark grey clay - fill of [037]
044	Cut	Irregular subcircular feature in base of [037]. Possible post hole or natural feature - contains (045)
045	Fill	Mixed grey and brown clay - fill of [044]
046	Cut	Small stakehole, exposed in base of [058] - contains (047)
047	Fill	Grey/brown silty clay - fill of [046]
048	Cut	Very small shallow linear feature, merges with [008] and [037] - contains (049)
049	Fill	Grey clay - fill of [048]
050	Fill	Grey clay - primary (alluvial) fill of [031]
051	Fill	Yellow/grey silty clay - secondary fill of [031]

052	Cut	Small subcircular post hole – contains (053)
053	Fill	Grey silty clay – fill of [052]
054	Cut	ENE-WSW linear feature, cuts [009] – contains (055)
055	Fill	Dark grey silty clay – fill of [054]
056	Cut	N-S linear feature, c3m wide. Cut through flood deposit (060) – contains (057)
057	Fill	Grey/brown silty clay – fill of [056]
058	Cut	Heavily truncated linear feature, cuts [046] – contains (059)
059	Fill	Grey silty clay – fill of [058]
060	Layer	Grey clay layer – possible flood deposit at south end of Field 13. Cut by [056]
061	-	Void
062	Cut	NNW-SSE gully, terminates to S of [010]. Cuts [010], [015]. Contains (063)
063	Fill	Very dark grey/black silty clay – fill of [062]
064	Cut	Large linear feature – possible palaeochannel
<b>Field 6</b>		
100	Cut	Large E-W linear feature of probable Romano-British date. Cuts furrows [102], [104], ditch [106] – contains (101)
101	Fill	Brown/grey silty clay – fill of [100]
102	Cut	Shallow N-S linear feature, cuts [100]. Probable medieval furrow – contains (103)
103	Fill	Grey/brown silty clay – fill of (102)
104	Cut	Shallow N-S linear feature, cuts [100]. Probable medieval furrow – contains (105)
105	Fill	Light grey/brown silty clay – fill of [104]
106	Cut	N-S linear, probably Romano-British, cuts [100], cut by [113] – contains (107), (112)
107	Fill	Dark grey silty clay – primary fill of [106]
108	Cut	Subcircular shallow pit. Burning in situ suggests a possible former hearth/fire – contains (109)
109	Fill	Charcoal rich deposit of burnt brownish red and black clay – fill of [108]
110	Cut	Small circular feature. Prob. truncated post hole – contains (111)
111	Fill	Dark brown/grey silty clay – fill of [110]
112	Fill	Very dark grey silt/clay/loam mix. Modern backfill of [106]
113	Cut	Large Romano-British enclosure ditch, cuts [106] – contains (131), (132), (134)
114	Cut	Curvilinear ditch, tapers towards [106] – contains (133)
115	Cut	E-W linear feature, cut by [129] – contains (128)
116	Cut	N-S linear feature, cut by [117], [129] – contains (123)
117	Cut	E-W linear feature, cuts [116] – contains (124)
118	Cut	E-W aligned linear feature – contains (119)
119	Fill	Grey brown silty clay – fill of [118]
120	Cut	E-W linear feature – contains (121), (122)
121	Fill	Grey/brown silty clay – primary fill of [120]
122	Fill	Grey clay – secondary fill of [120]
123	Fill	Grey/brown silty clay – fill of [116]
124	Fill	Grey silty clay – fill of [117]
125	Cut	Circular pit – contains (126)
126	Fill	Brown silty clay – fill of [125]
127	Fill	Grey/brown silty clay - fill of [129]
128	Fill	Dark grey silty clay - fill of [115]
129	Cut	E-W linear feature, cuts [115] – contains (127)
130	Layer	Yellowish brown clay – Natural, Field 6
131	Fill	Grey silty clay - upper fill of [113]
132	Fill	Mid grey/brown silty clay - secondary fill of [113]
133	Fill	Grey silty clay - fill of [114]
134	Fill	Dark grey silty clay – primary fill of [113]