

# Further Excavations At Langtoft, Lincolnshire

The Glebe Land 2007/8



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Figure 1. Location map

## **Introduction**

In response to a standing condition on planning permission for mineral extraction an archaeological excavation was undertaken on the Glebe Land at Hanson Aggregates Plc. Baston Quarry No. 2, Langtoft, Lincolnshire (NGR TF 154 144) in line with a WSI approved by Lincolnshire County Council Archaeology Office (Dickens 2008). The work took place in two phases: The first phase (undertaken between October 2007 and January 2008, on a 5.06ha area) has already been reported upon (Hutton 2008b); The current phase took place between 20<sup>th</sup> October 2008 and 10<sup>th</sup> January 2009, on a 1.89ha area; forming a combined area of 6.95ha.

In the approximate centre of the overall area excavated is the site of the 1994 excavation of a Middle Iron Age saltern extending over approximately 0.34ha. This work has not been formally analysed or published, but a summary of what was found has been presented in Tom Lane's book on Fenland salterns (Heritage Lincolnshire 1992b, Lane 2001: 250-262). In addition to removal of topsoil across the main site, a small part of the saltern area was machine cleaned to assess the condition of the features as well as verifying their location. It was apparent that, after the 1994 excavation was completed, the area had not been backfilled and was left for vegetation to grow. The previously excavated features uncovered were surveyed into the GPS grid, and their relationship with the rest of the features on the site could be assessed and spatially compared. A small number of saltern related features were observed outside the 1994 excavation limit together with three previously unexcavated features in the small re-cleaned area.

Archaeological evidence from the second phase at Glebe consisted of segmented linears, pit/wells, postholes, small pits, a watering hole with timber revetment and three posthole structures. In addition features pertaining to the Middle Iron saltern site included pits, postholes and a gully associated with structures.

## **Topography, Geology and Archaeological Background**

The site lies on First Terrace river gravel which overlies Oxford Clay, and is situated approximately 1.6km west of Older Marine Alluvium and Nordelph peats at the former fen edge. The geology of the area is characterised by the River Welland (the site is approximately 3km due north of the Welland) and associated interconnected alluvial belts within which are numerous palaeochannels. The site was capped by a ploughed topsoil horizon between 0.23m and 0.45m in depth; the height of the truncated natural after the topsoil horizon was removed was between 2.00m and 2.60m OD. The height towards the western part of the combined excavation area was at a higher level (2.40m OD) than that towards the east (2.00m OD), highlighting the gradual sloping elevation of the area down to the fen edge towards the east. There was no indication of subsoil and there was evidence of plough-marks through the western area of the excavation. The geology was mainly gravel and sand with patches of clayey silts that became more prominent towards the eastern area of the site.

### *The Quarry Environs*

Abundant archaeology is known both within the quarry environs and surrounding landscape of the fen-edge gravel in Langtoft parish. An impressive cropmark



complex extending for several kilometres across the quarry environs appears to span several periods of activity. Four probable Bronze Age barrows have been identified from aerial survey northeast of the site, close to the contemporary fen edge (Hayes *et al* 1992) and further attest to the extent of the later prehistoric activity within the Langtoft landscape. Extensive cropmarks attributed to the Romano-British period are also evidenced, including a northeast-southwest orientated trackway, (presumably connected to King Street, a Romano-British road), with enclosures running off at right angles from its northern side.

Successive excavations by the CAU within the wider quarry have provided evidence for settlement spanning later prehistory through to the Romano-British period (Hall 1998; Webley 2007; Hutton 2007a and b). The first phase of work on the Glebe Land itself revealed part of the Bronze Age fieldsystem together with a droveway and enclosed settlement. Within the fieldsystem were large pit/wells and watering holes (Hutton 2008b).

An excavation carried out on the Whitfield Land too the south of Glebe revealed linear ditches that formed part of an extensive Middle Bronze Age field system with complimentary pits with domestic debris that included a large quantity of pottery, perforated sea shells and a log ladder (Hutton 2008a). Three watching briefs carried out immediately south of the Whitfield Land in 1998 and 1999 revealed sparse archaeological remains that consisted of a small number of pits, postholes and linear ditches. None contained any dateable artefacts, with the exception of one pit which contained a sherd of prehistoric shell-tempered pottery (Higbee 1998; 1999). However, in 2001, an area adjacent to Whitfield to the south had three pits and two linear ditches. One of the pits (F.2) contained a complete ash palstave haft, and a C14 date was obtained from the lower layer that produced a date of 1900-1510 CAL BC. Meanwhile extensive excavations on the Meadow Lands 2.5km southwest of the Glebe Land (in Areas A to D) have revealed Middle Bronze Age and Middle to Late Iron Age features (Hall 1998). A cluster of discrete features in the northern part of the Meadow Lands consisted of three posthole structures, eighteen large pit/wells and several small pits, all containing Deverel-Rimbury pottery. There was no evidence of lining or revetment (indicating a relatively short span of use), after the well went out of use it was left to infill gradually with episodes of silting and edge erosion with occasional deliberate dumping episodes. Finds occurred in the upper tertiary layers and represented midden redeposition. It was unclear whether these represented a single small settlement or separate episodic visitations to the area, a settlement pattern involving a certain degree of residential mobility.

As referred to above a Middle Iron Age saltern was excavated in the centre of the Glebe Land in 1994. As reported it comprised sub-circular and sub-square structures along with considerable quantities of briquetage including pedestals and fragments of troughs (Lane 2001). For a fuller summary of the archaeological features and associated artefact assemblage, see below.

Further Iron Age activity was revealed by a watching brief 475m to the west of Glebe, on the north side of Outgang Road (Heritage Lincolnshire 1992). A Middle to Late Iron Age site with salt production activities was recorded at Baston No. 2 Quarry, and it was suggested that this site could be linked with the one on Glebe land; although the site at Baston 2 indicates a long term habitation site (Webley 2007).

Occupation of the area was well attested in the Romano-British period. Cropmarks highlighting field systems and enclosures are recorded to the southwest of Areas A to H and immediately adjacent to the excavation on the Freeman Land. Two Roman settlements and field system were uncovered in the excavations at Baston No. 2 Quarry (Hutton 2007), and Roman pottery had been recovered during quarrying on the north side of Outgang Road, c.1.5km northwest of the site (Petch 1961; Phillips 1970). During the Early Medieval period the site lay beyond the eastern edge of civilisation, and formed part of the pasturelands of the Langtoft Common (Hallam 1965). Three early maps at 1 inch to 1 mile scale, (Armstrong's Map of Lincolnshire of 1778, Bryant's Map of the County of Lincoln of 1828 and C. and J. Greenwood's Map of the County of Lincoln of 1890-91) show a layout of field boundaries similar to that existing today.

### *The Wider Landscape*

Excavations by the CAU at West Deeping, 7km to the southwest, revealed a Bronze Age landscape with a field system and associated settlement. The pottery assemblage suggested activity spanning from the Late Neolithic through to Romano-British, with Middle Bronze Age being the dominant period of activity. The Middle Bronze Age features comprised of linear ditches forming a field system, a trackway and part of an associated enclosure, with interspersed pit/wells, cremations and inhumations. There was also a posthole alignment on the same orientation as the trackway with possible associated structures, although the structures were slight and possibly represent temporary animal pens, (Murrell forthcoming). The features recorded from West Deeping bear similarities to the features recorded at Glebe regarding the layout, structure and morphologies of the features although the linear features were on a different orientation; West Deeping was on a northeast-southwest alignment whilst Glebe was northwest-southeast aligned.

Eight kilometres to the south of Glebe a Bronze Age settlement was found at Nine Bridges that consisted of ring ditches, field system and pit groups (Knight 1998). Two large pits (F.72 and F.78) had structural/revetment components in their bases in the form of wooden stakes and planks, thus enabling the centre of the pit to remain clear of gravel and clay erosions from the side. Ring ditches appeared to have influenced the location, extent and alignment of the field systems. Large pits were superimposed by droveways and located within and across the fields. The pattern of enclosure followed by settlements suggests co-ordination in the laying out of the fields with the settlements fitting in.

At Eye Quarry, Peterborough, excavations carried out by the CAU from 1996 to 1998, highlighted an extensive palimpsest of archaeological occupation. On one area a Bronze Age landscape consisted of a staggered linear field system, four 4-poster structures, one round house and evidence of droveways (indicating the management of livestock), as well as pits and ovens/hearths. There was also evidence of large ramped watering holes; one example had wattle linings to aid stability, as well as part of a barrel. This feature was later cut by small 'bucket' wells, (Gibson et al 1998; McFadyen 2000). Subsequent investigations (Phases 1-3) revealed evidence of droveway and field/paddocks that super-imposed a prior ephemeral land division with complimentary pits. Several of the linear ditches were segmented which were

interpreted as entrance ways into the fields suggesting a different function (Patten 2009).

Excavations at Pote Hole Farm, also at Peterborough, conducted by Birmingham University Field Archaeology Unit, and later by Network Archaeology, uncovered a systematic and organised system of fields laid in a brickwork pattern with similar features and layouts to that recorded at Langtoft, as well as Early Bronze Age barrows that attest to some of the early activity within the area (Cutter et al 2000; Network 2002, Daniel 2009).

## **Methodology**

The area was stripped to an archaeological level with a 360° tracked excavator with a toothless ditching bucket under careful supervision of an experienced archaeologist. The unit modified version of the MoLAS recording system was used; features were planned at 1:50, with sections drawn at 1:10. All small pits and postholes were half sectioned, and linear features were sampled at appropriate intervals. Postholes pertaining to structures were excavated 100%. Pit/wells and watering holes were primarily quarter-sectioned, with opposing quadrants excavated and recorded. If worked wood or a revetment feature was uncovered, the feature therefore merited a full 100% excavation. Archaeological features were assigned a unique number (e.g. **F.001**; bolded upon introduction within the text) and each stratigraphically distinct episode (e.g. a cut, a fill) was recorded with a unique context number (e.g. [001]). The numbering sequence was continued from the first phase of work. All exposed features were metal detected using a Laser Rapier metal detector.

A programme of bucket sampling was carried out during the process of topsoil removal that comprised of examining 100 litres every 25m adjacent to the saltern site and covered an area of approximately 30m x 60m east by north. No artefactual evidence was recovered from this exercise. In addition, samples were taken for phosphate analysis from a series of eight transects; two across the enclosure, five across the trackway and field system and one across Structure V.

All work was carried out with strict accordance with Statutory Health and Safety legislation and with recommendations with SCAUM. Hanson Quarry Safety Regulations were also followed. The site was surveyed into the Ordnance Survey Grid and Ordnance Datum by means of a RTK GPS unit in addition to a topographical survey.

In total, 69 features were identified during this phase of excavation, with 347 contexts. The artefacts and accompanying documentation have been compiled into a stable, cross-referenced and indexed archive. The archive is currently stored at the offices of the Cambridge Archaeological Unit under the approved project code BLGL08. The Lincolnshire Accession Number is 2009.181.

## **Results**

A range of features were sampled and recorded that included the continuation of the field system linears with associated pit/wells that were previously recorded on the Whitfield Land (to the south) and continued into the Glebe Land on the same



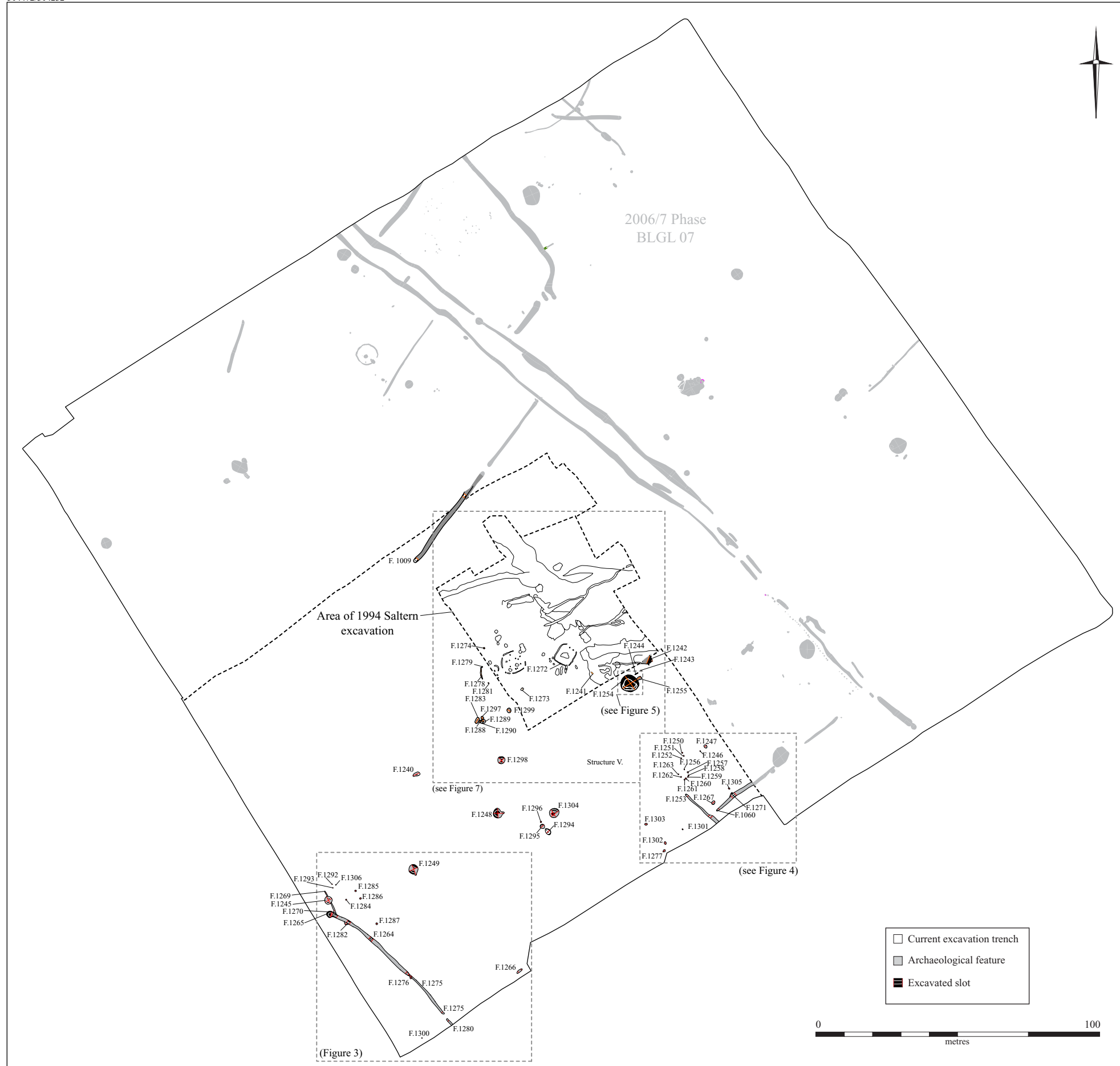


Figure 2. Open Area Plan.



orientation and alignment (Hutton 2008a, 2008b). Other features included a watering hole, a small 'horse-shoe' shaped posthole-structure, isolated pits and pit/wells and structural features in the form of postholes, as well as a gully and pits that were associated with the previously excavated saltern site.

Artefacts included a large assemblage of pottery, faunal remains including worked bone, flint artefacts and debitage material, timber revetments and other worked wood. The majority of the features were attributed to the Middle Bronze Age, with a small amount of Early Bronze Age occupational evidence and later activity pertaining to the Middle Iron Age saltern site. The results are dealt with below in chronological order.

### *Middle Bronze Age*

The feature types that were observed in the first phase on the Glebe land (for example linears, pit/wells and watering holes) were also prevalent in the current phase. The pottery recovered was predominantly Deverel-Rimbury, although the quantity was rather less than seen in the previous excavations in the area. Very little material was recovered from the linear features to the southwest of the area, with only a small amount recovered from the pit/wells.

#### *Linear Features*

The linear features associated with the field system were generally segmented (particularly towards the southeast of the excavation) and produced little artefactual evidence. **F.1254** was a re-cut of an earlier smaller linear **F.1275** that continued the northwest-southeast orientation previously observed. The northern terminal of **F.1254** was cut by a pit/well (**F.1265**), which differs from previous examples on Whitfield, Freeman and the earlier phase of Glebe where the linear had always cut the pit. There was also slight evidence of an earlier pit (**F.1270**). Both of these features cut a narrow gully **F.1269** that was on a north-south orientation. This was cut by pit **F.1245**.

To the east of the area **F.1060** from the previous phase continued and terminated in the current area. An additional two ditches on the same orientation (northwest-southeast) **F.1253** and **F.1060**; the latter feature possibly cut **F.1253**, but appears to terminate just east of it. Also, to the north of the area, **F.1009** continued on a northeast-southwest orientation from the previous excavation and terminated about 32m inside the current area. These linear features form part of the same field system that extends from the Whitfield land to the south and Freeman land to the north.

#### *Pit/wells and watering holes*

The pit/wells recorded during excavations at Glebe display similar general characteristics to those previously recorded elsewhere in the quarry environs. There are however, some slight distinctions in this group. As highlighted in previous excavations on Whitfield and Freeman, some of the pit/wells had log ladders abandoned in the bottom of them (Hutton 2007, 2008a). No log ladders were found during this current phase on Glebe, however here some of the pit/wells had a small 'step' cut into the side, which would have made access to the water relatively easy, and there would be no need for a ladder. Those pits that did produce log ladders in the previous investigations had far steeper sides and access would have been difficult without such an aid.

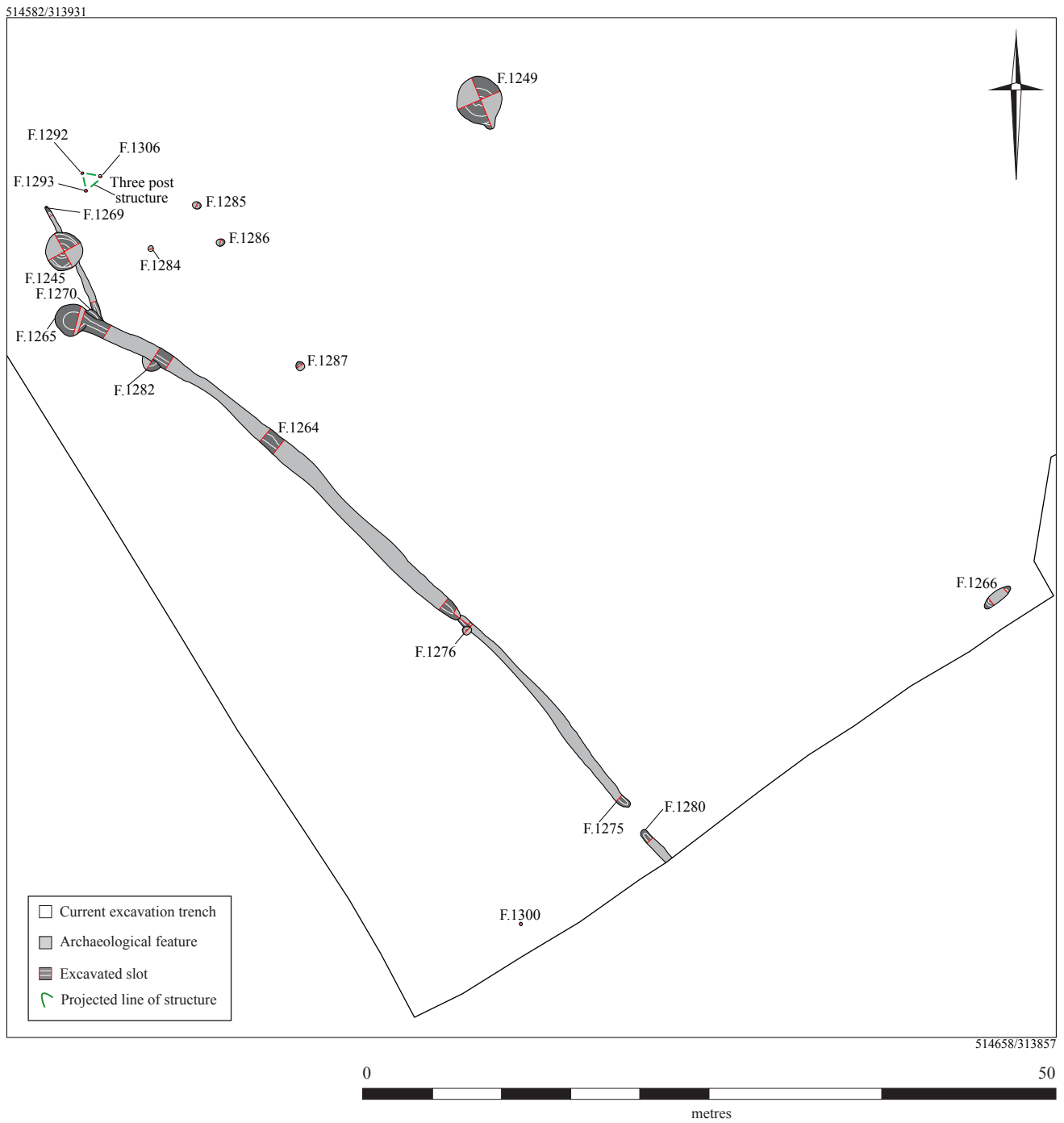


Figure 3. South-West corner Bronze Age features.



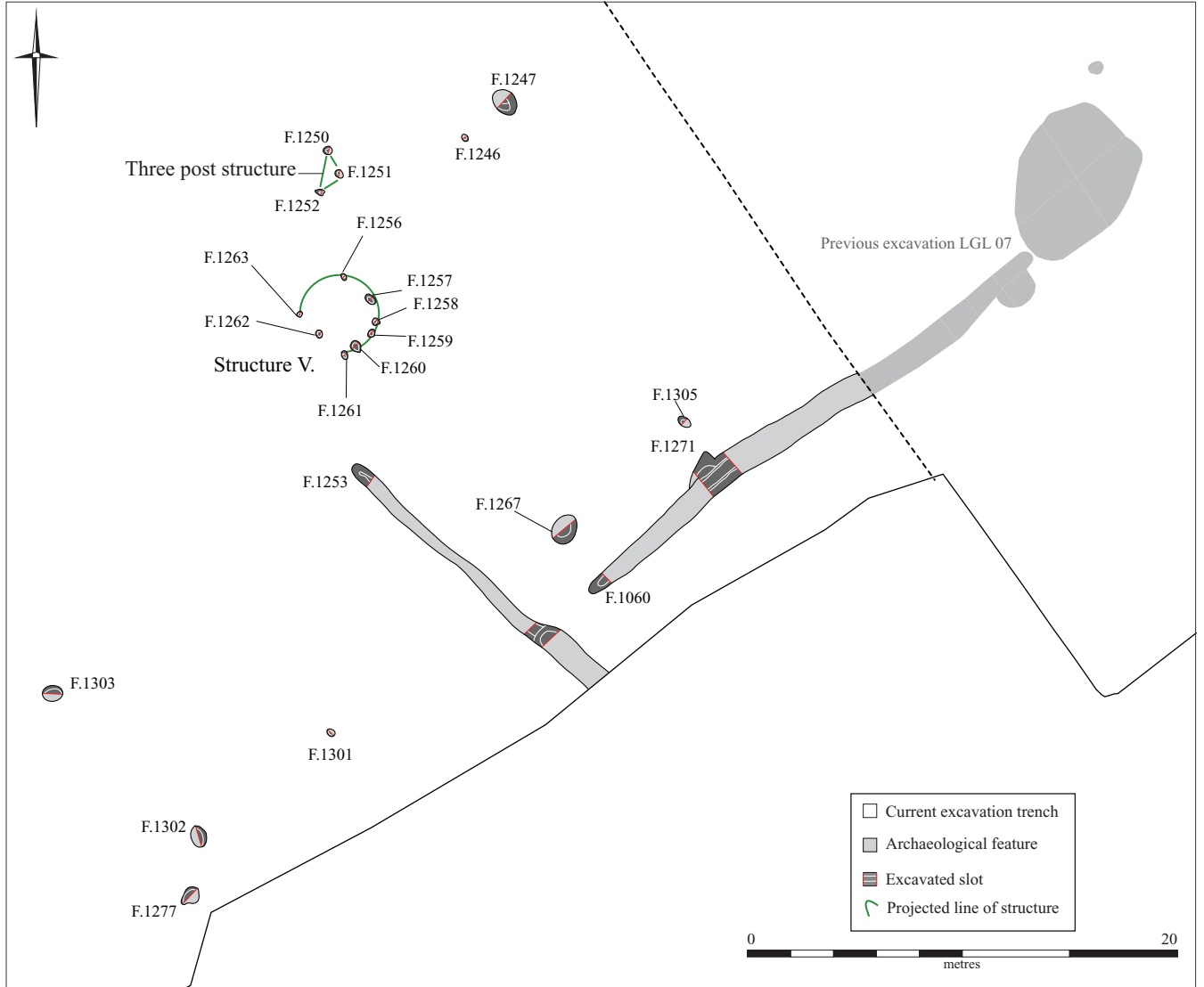


Figure 4. South-East corner Bronze Age features.

Six additional pit/wells were found on the current phase of work. One, **F.1248**, which had a step cut onto it, also had a different profile to the rest. The upper cut was similar to the others, however iron pan formed part of the natural geology half way down the well, which resulted in the tapering of the profile with a small oval hole cut through this deposit. The natural geology below this was sandy and easily eroded, causing under-cutting of the well beneath the iron pan. This formed an hourglass shaped profile. Silting of the well, after it went out of use, sealed the lower organic layers, [2155] which allowed good preservation of hazelnut shells in the base. This pit formed part of an alignment of pits across the area on a northeast-southwest orientation, the same orientation as the wider field system. An example of one of the alignment includes pit/well **F.1265** and **F.1245** to the west, and incorporates **F.1249**, **F.1248**, watering hole **F.1254** and ends with the large pit/well from the previous excavation **F.1209** to the east. Similar alignments can be seen on the Whitfield and Freeman lands (Hutton 2007, Hutton forthcoming).

More typical pit/wells included **F.1245** (2.48m x 2.78m wide and 0.97m deep) that had a possible step on the north side of the cut, which would have aided access and so reduced the need for a log ladder. It was initially silted with fine sands and gravel before developing a wet muddy fill with evidence of plant growth. Further silting occurred above this deposit with material eroding from the sides. These primary deposits were re-cut, presumably to re-access the water table. Fine sands then silt developed within the re-cut before a darker organic muddy waterlogged deposit was formed followed by final silted deposits of eroded sand and gravel but more predominantly washed and slumped topsoil. Bone, pottery and burnt stone were recovered. **F.1249** was another pit/well (3.90m x 3.40m wide and 1.30m deep) with a possible step on the south side of the pit. Initial periods of silting and slumping from the edge formed the primary fills, which resulted in plant growth after the well went out of use. There were three main phases of organic deposition and later backfilled with silt, which contained the majority of artefacts. **F.1265** was a large pit/well, cut by ditch **F.1264** and pit **F.1265**. Only the lower primary fill remained. **F.1267** was a pit (1.40m x 1.38m wide and 0.48m deep) situated to the north of linear **F.1060** adjacent to its western terminal. It contained an array of fills, the topmost of which contained the most evidence of human activity. The pit was aligned with another two pits on the same alignment on the north side of the linear on an east-west orientation. **F.1294** was a large circular pit (1.65m x 1.62m wide and 1.17m deep) where the upper cut was concave becoming vertical down to a flat base. There was abundant wood at the base, which appeared to have been a random dumping episode with no signs of working. The base had been gently eroded and the natural sides subsided. This pit appeared to have been associated with **F.1295** and **F.1296** and pit/well **F.1304**.

Interspersed throughout the entire area of the Glebe land were six large isolated watering holes and three inter-cutting watering holes with smaller pit/wells cut into them. **F.1043**, **F.1065**, **F.1071**, **F.1073** and **F.1209** were isolated watering holes dispersed throughout the Phase 1 area, having similar morphological profiles and stratigraphic sequences. In the Phase 2 area watering hole **F.1254** was similar to the previously recorded watering holes specifically in having a timber revetment. Some of the timbers were clearly not uncovered in their original positions, rather it appeared that the watering hole was abandoned and the revetment was disassembled with the upper pieces dislodged. The lower portion of revetment appeared to have remained in

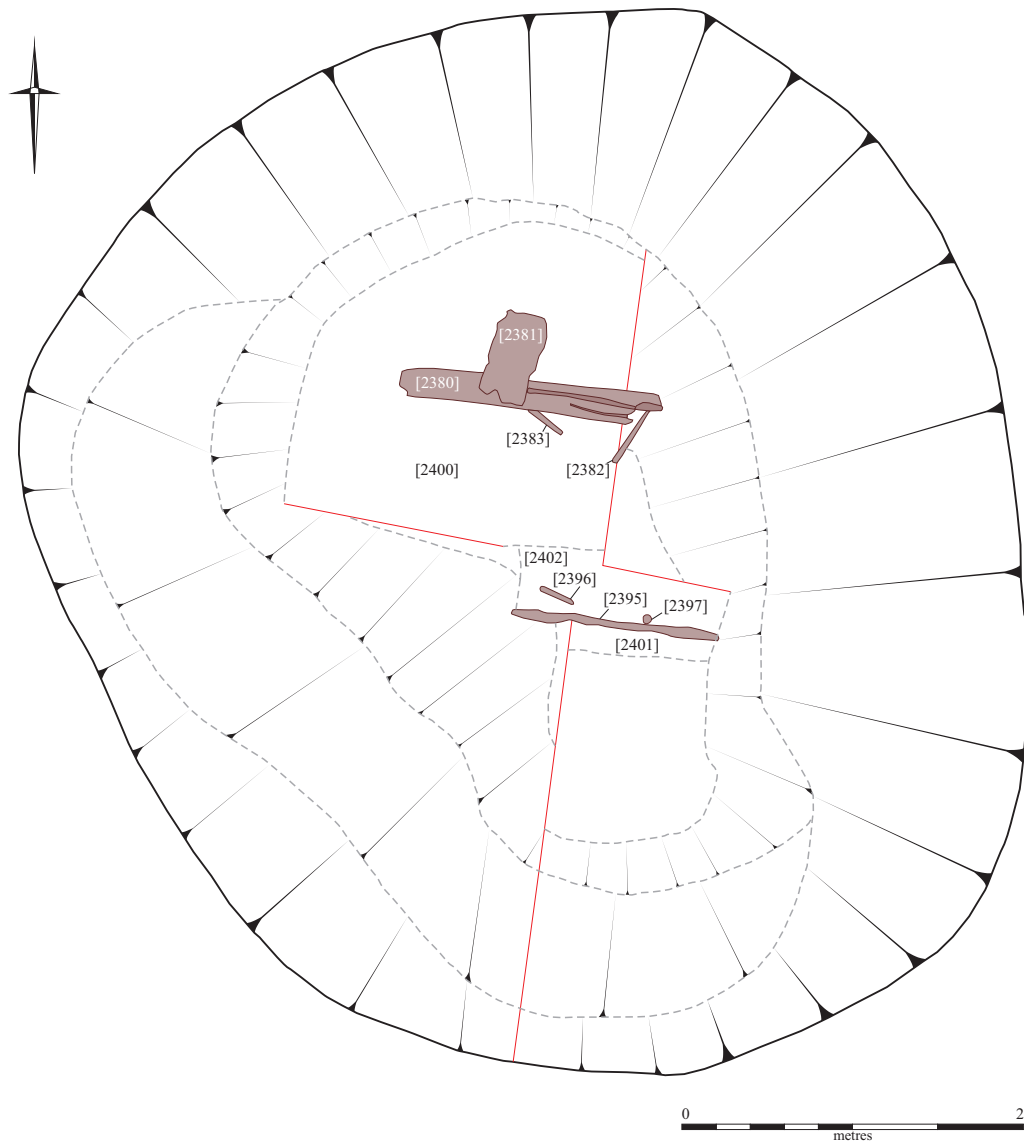


Figure 5. Plan of watering hole F. 1254.



Figure 6. Photographs of watering hole F. 1254.

situ; the stakes were embedded into the natural gravel and the split timber plank remaining upright. Timber that has been re-used as revetment pieces in the watering holes is not an uncommon event. Previous excavations at Bradley Fen have uncovered both pit/wells and watering holes with timber revetments, including part of a dug out boat (Gibson & Knight 2006).

**F.1304** was a large pit (3.10m x 3.45m wide and 1.10m deep) that had similarities with both the pit/wells and a watering hole. It contained layers of silting with fragments of wood towards the base; on could possibly have been a degraded log ladder, although the northeastern side had a slight convex step.

### *Middle Iron Age*

The majority of the small number of Middle Iron Age features found during this phase of excavation were located to the west and south of the 1994 saltern site (Figure 7). A small part of the 1994 area was re-cleaned by machine for the purpose of surveying any surviving features to accurately plan the layout of the site with the associated features uncovered in the current area, the published plans not permitting this to be accurately done.

The 1994 excavation was preceded by an evaluation phase consisting of aerial photography, geophysical survey, field walking and trench evaluation (Heritage Lincolnshire 1992b). Based on the results from this, and on the presumption that destruction of this field by extraction was far more imminent than it actually proved to be, an area roughly 0.4 ha was fully excavated in 1994. This work revealed features and material culture evidencing a salt production site. As well as the salt related briquetage there was also a small domestic assemblage indicating occupation. The pottery was dated to the Middle Iron Age, between 4-5<sup>th</sup> and 1<sup>st</sup> century BC (Knight in Lane 2001: 261-262). In the description below the 1994 features are prefixed by 'HL' to distinguish them from the current findings.

Within the 1994 area were two structures in the form of segmented gullies and associated postholes (**HL019** – sub square, **HL009** – sub-circular) with a potential further structure to the west (**HL208**). There were no hearth remains, probably due to truncation by modern ploughing (although a possible hearth was suggested within structure HL009 from a magnetometer survey). To the north of the structures there were features interpreted as settling tanks and pits with linear features that possibly represented natural gullies and small streams. Feature **HL076** was interpreted as an area dug into the stream to allow the water to 'pool' and collect before being added to the adjacent elongated pit. The majority of the briquetage artefacts were recovered from the vicinity of the structures indicating that the processing of the salt-water took place in that locale (Lane 2001).

The 1994 briquetage assemblage consisted of three classes of artefacts; containers, supports and miscellaneous debris. The containers were sub-rectangular gutter shaped troughs which were abraded on the interior with salt stains on the exterior; salt crystals would have been scraped off the inner wall. The troughs had a flat ended convex profile. The manufacturing techniques of the troughs consisted of a cylindrical vessel was made and when leather hard it was split down the centre to form two troughs. The supports were horned pyramidal pedestals and sub-square base

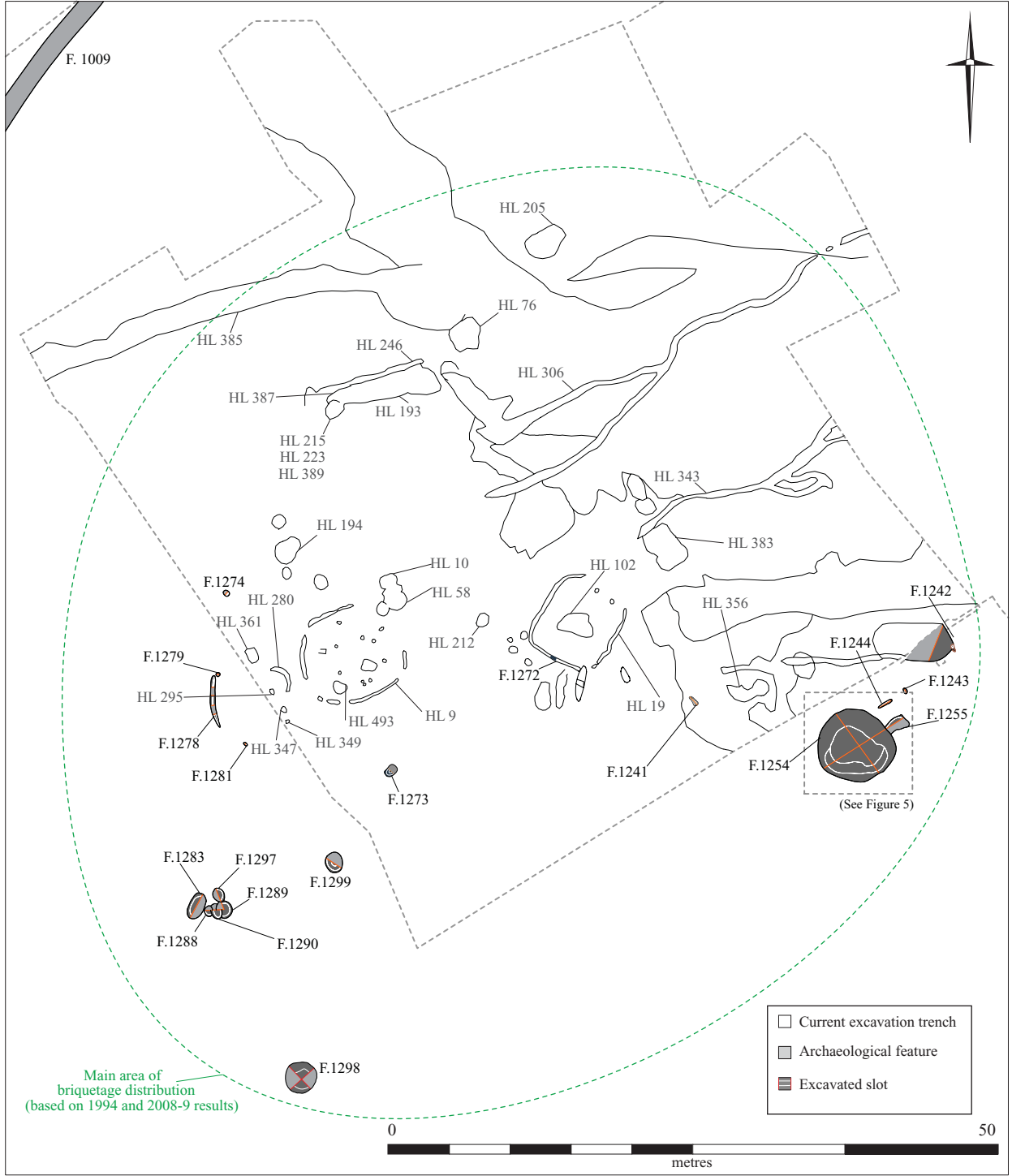


Figure 7. The Saltern area, showing features excavated by Heritage Lincs in 1994.

pedestals. There were no examples of spacer-clips or stabilisers (Morris in Lane 2001: 252-261).

The fabrics of the Langtoft briquetage match those recorded at Market Deeping, although the troughs at Langtoft had thinner walls than those found at Market Deeping. There are advantages and disadvantages to the thickness of the troughs; thicker walls are good for repeated use whilst thinner walls had better heat conductivity. The troughs were often broken and discarded, whereas the pedestals were repeatedly used (*ibid*).

The structure on Glebe appeared to have been the main focus of salt production, probably over a hearth or fire; although it appears that there was no specialised area, only a direct heating system for evaporation. None of the features recorded appeared to be furnaces, which would indicate a permanent production site, or at least one that was returned to regularly. The troughs at this site could just have been placed over an open fire which would have lain on top of the ground surface and would leave no evidence in the archaeological record.

The few features that were re-sampled within the 1994 area produced further sherds of pottery and briquetage. In addition, three previously unidentified features (**F.1241** and **F.1274** and pit **F.1273**) were excavated, also producing a briquetage assemblage. A single slot in structure HL019 (recorded as **F.1272**) recovered further fragments of briquetage.

A partial structure recorded in 1994 (Feature [**HL280**]) was completed in the present area by gully (**F.1278**) with associated postholes (**F.1279** & **F.1281**). To the southwest of these features, a pit cluster (**F.1283**, **F.1288**, **F.1289**, **F.1290** & **F.1297**) was sampled and produced a large amount of briquetage material consisting of trough fragments and production furniture such as pedestals.

The saltern site appeared to have been restricted to a discrete area, with only a few features located to the west of the original investigation, and none to the south, north or east. It would appear that the saltern site was limited to the immediate vicinity and was probably a temporary site for the primary production of salt. This is supported by the slight nature of the structures, perhaps workshops, with evidence in the small domestic assemblage of occupation rather than more permanent settlement. There may be a link between this and the secondary production site recorded in an earlier phase of investigation on the Meadow Lands (Webley 2007).

The faunal assemblage from the recent excavations added little additional information on species identification and other artefactual elements. The low number of animal bone recovered from both investigations also suggests that this was not a long term settled site. Additionally, the pottery evidence was limited to a few sherds that were associated with briquetage.

## *Undated Features*

### *Structure V*

In the southeastern part of the area, there was a semi-circular arrangement of eight postholes (**F.1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263**) that formed a three-sided structure with the open end towards the north. No datable artefacts were recovered although animal bone and fragments of un-diagnostic fired clay were present. The size of this structure (2.90m x 3.11m) was fairly small (significantly smaller than the structures in the saltern area for example) and the function of the structure is uncertain. Suggestions might include that of a small pen, or, a temporary shelter of some kind. This structure is just to the north of the two perpendicular linears (**F.1060** and **F.1253**).

To the north of Structure V was a three-post structure (**F.1250, F.1251, F.1252**), a form observed in other of the investigations in the quarry. A second three-post structure (**F.1292, F.1293, F.1306**) lies immediately northeast of the terminal of ditch **F.1269** towards the southeastern corner of the area. Whilst it is possible that in isolation these may represent the more familiar four-poster structures with the fourth post missing for whatever reason, this does seem to indicate a genuine feature type. Function is unclear, what are the practicalities of the stability of a three-post structure, unless they were tied together, forming a tee-pee like structure? The cuts of these postholes, however, had vertical sides with no evidence of the timbers being set at an angle.

## **Discussion**

This final phase of excavation on the Glebe land has provided further evidence of the Middle Bronze Age landscape characterised by an axial or co-axial field system with interspersed pit/wells and watering holes. These were common features of Bronze Age landscapes in the region and provide evidence of mixed economy practices and occupation. In addition, work around the Middle Iron Age saltern centre in the Glebe land had provided evidence that although the complex was slightly larger than thought, the salt production site was limited in its locale, and was an isolated site.

### *Pre-Bronze Age*

Early prehistoric occupation in the landscape of Langtoft was open in nature lacking cut features and leaving only ephemeral remains in the form of pottery sherds that became incorporated into later features such as the wells. There was activity here, however it appears transient.

### *Middle Bronze Age*

The principal characteristic of this period is the rectilinear field system, formed from numerous ditches, which extends beyond the immediate area of the site and indeed forms part of a much larger enclosed landscape seen across tracts of the Fen edge area. This small area of excavation produced only a few fragments of the field



system, but Phase 1 in 2007/8 had a section of droveway with and enclosed settlement area to one side of it (Hutton 2008b). The known monuments in the immediate landscape contemporary with this (five ring ditches and a cremation cemetery) are 1.7km to the northwest on the Freeman Land (Hutton 2008a, Hutton forthcoming), although it should be noted that much of the area in between was subject to extraction without archaeological observation and more may have been lost.

Here the main axis of this system is orientated northwest - southeast, similar to that at Pode Hole and Tower's Fen (Daniel 2009, Mudd & Pears 2008) but in contrast with that at Fengate, Thorney and West Deeping, where the main orientation is northeast – southwest, (Evans 2009, Murrell forthcoming). The Langtoft system is closer in orientation to that at Welland bank and Newborough (Pryor 2002, Evans 2009) although rather different in its form, Welland bank being what Evans describes as “an ‘organic’ or disjointed patchwork; and neither droveways or monuments are apparent amid its irregular axes.” (Evans 2009: 57) At Langtoft, similar to West Deeping, the fields appear structured “according to a series of dominant-axis/parallel, ‘reave-like’ droveway boundaries” (*ibid*). Form is more important here than orientation, the Langtoft system looks much more like the Fengate/Pode Hole/Thorney/Deeping systems than it does the Welland Bank one. It is likely that orientation in any given locality is a product of local conditions such as topography and the position of the fen edge. Evans' figure 6.9 in the Fengate volume (2009: 258) shows how a single system extends over 700sq km of Dartmoor. Whilst a direct comparison between the two is not appropriate it does indicate that what might in the fens be considered a ‘system’ in its own right, is probably just be a small fragment of something much larger. The Langtoft ‘system’ may actually be part of the same much larger entity seen at Fengate/Pode Hole/Thorney/Deeping.

### *Middle Iron Age Saltern*

Although within the earlier field system the Middle Iron Age saltern appears to be located away from the Bronze Age features, but this is probably coincidental. Access to the primary archive of this excavation has not yet been possible, and it is unclear from the summary in Lane's volume, concentrating quite rightly on the subject in hand, whether there is material or features of an earlier date. In considering the saltern Lane reports that no major stream channel was seen in the 1994 excavations (2001: 250) and that remains true within the much wider zone now observed around the saltern focus. However there must have been a suitable water source somewhere nearby for the saltern to have been located where it was, not only a channel, but one within reach of the tides. Some suggestion has been made that the source of the brackish water for this primary processing could have come from digging down into the gravels however, although there are several large features on the site which might have fulfilled such a purpose, they appear to be much earlier in date than the period of saltern activity and so cannot be considered. Another possibility is very shallow creeks, there were patches of silt observed in both phases of work, but these were very ephemeral. Even if it was the case and such creeks were present from where were they being fed? This remains an open question, the answers for which may lie to the east.

## *Conclusions*

The results from the 2008/9 excavations have added to those from the earlier phase and, importantly, allowed the 1994 excavation area to be accurately located in the broader landscape. There is a wealth of material and environmental data, which would permit closer analysis of this part of the field system, particularly as it also has settlement evidence within the field system (as revealed in 2007/8).

Given the question of water supply for salt making it would be immensely useful to run a series of C14 dates from the large water holes and pit/wells. Form and location would suggest that they are Middle Bronze Age in date, however briquetage was noted in two of them. This is in small quantities and most likely to be intrusive, however the features warrant closer examination.

Further study is required of both the prehistoric pottery and the briquetage. The fabric of some of the briquetage is very similar to that of the earlier pottery and much closer examination is required to ensure that the two groups of material have been accurately separated.

Although a relatively small portion of a much larger landscape the Glebe results are important in that they include settlement as well as field system and have provided a wealth of material, both artefacts and environmental, which warrants more detailed study. Full analysis and publication is recommended.

## Appendix 1 Specialist Reports

### Flint *Alison Dickens*

Eight pieces of worked flint (120g) were recovered from seven different features. Only one was burnt. Other than as a background indication of activity from the Neolithic to Bronze Age periods this assemblage in isolation does not add to the conclusions of the 71 pieces found in Phase 1. The full assemblage requires a small amount of additional analysis.

### Early Prehistoric Pottery *Mark Knight*

The excavation produced a small assemblage of 18 sherds of earlier prehistoric pottery weighing 703g. The bulk of the assemblage was made up of a single large rim fragment that weighed 200g; the rest of the assemblage comprised medium sized fragments with a mean sherd weight of 29.6g. The condition of the material was good and most of the sherds were made of a hard, durable fabric constructed out of fossil-rich clay. Feature sherds included seven rim and three decorated fragments and all of the pieces belonged to very large diameter thick-walled vessels.

The assemblage came from three large pit features and, with the exception of a single rim/upper collar fragment from a Collared Urn, consisted of Deverel-Rimbury type sherds.

| Feature        | Context  | Number    | Weight      | Fabric   |
|----------------|----------|-----------|-------------|----------|
| 1242           | 2069     | 2         | 33          | 1        |
| 1245           | 2106     | 7         | 286         | 1        |
| 1248           | 2146     | 1         | 200         | 1        |
| 1254           | 2158     | 2         | 24          | 1, 2     |
| 1254           | 2168     | 2         | 6           | 1        |
| 1254           | 2170     | 1         | 16          | 1        |
| 1254           | 2171     | 1         | 44          | 1        |
| 1254           | 2171     | 2         | 76          | 1        |
| <i>Totals:</i> | <i>7</i> | <i>18</i> | <i>703g</i> | <i>2</i> |

**Table 1:** Assemblage Composition

Pit F.1242 produced two sherds, one of which appeared to have been burnt. The burnt sherd had a slight curvature and a flattened rim-like edge. The material from pit F.1245 included lumps of pottery and briquetage that were very difficult to tell apart. Its seven identifiable pieces (including a squared rim) differed only in that they had internal as well as external surfaces. Pit F.1254 produced four definite rim fragments including one that had been perforated post-firing. Three of the rims were typical Deverel-Rimbury types (x 2 flattened expanded and x1 rounded internally expanded). The fourth rim fragment belonged to a Collared Urn and was by comparison with the rest of the assemblage recognisably abraded. One of the flattened rims was decorated with a deep vertical groove which was incised so deeply that the sherd had snapped along its line. A body sherd from the same context also had this attribute. The biggest sherd, another rim (internally bevelled), came from pit F.1248 and it also had a deeply incised vertical groove along one of its broken edges.

All of the Deverel-Rimbury rims were from large diameter vessels (c. 34cm internal diameter) and all were made from the same hard fabric replete with fossil shell inclusions. The quantity of crushed shell was such that the sherds appeared to be more shell than clay. The Collared Urn sherd was made of the same shell-rich clay only its shell had subsequently dissolved and small lumps of rounded grog had been added as an opening material.

### *Discussion*

The BLGL 07 assemblage (Hutton 2008b) was also dominated by its Deverel-Rimbury component. The BLGL 08 assemblage represents a straightforward continuation of the adjacent excavation and at the same time adds to the ever expanding and ever impressive Deverel-Rimbury domestic assemblages generated specifically by the Langtoft quarries.

### **Iron Age Pottery** *Matt Brudenell*

Four sherds (28g) of Middle/Later Iron Age pottery were recovered from the excavations. The sherds derived from two features: F.1283 (3 sherds, 16g) and F.1297 (1 sherd, 12g). The former were shoulder sherds deriving from the same vessel; two of which refitted. These had moderate to common finely crushed shell inclusions, most under 1mm in size. The body sherds from F.1297 were in a harder fabric with well-sorted moderate to common shell flecking throughout. The character of these sherds is consistent with that previously recovered from the site (Knight 2001: 261-2).

### **Briquetage** *Jacqui Hutton*

The previously excavated site in the centre of Glebe field (known as Outgang Road) in 1994 revealed features of a salt production site dated to the Middle Iron Age in the form of pits, gullies and postholes. During the current phase complimentary features were recorded and sampled to the west and south of the area; two further features were uncovered when the Outgang Road site was partially re-machined.

A large amount of briquetage material was recovered from features relating to the Middle Iron Age in the current excavation area, as well as residual finds from features within the immediate vicinity. The briquetage assemblage consisted mainly of trough fragments, some with residue still attached, and several fragments of pedestals that were similar in size and profile to those recorded in the 1994 excavation. There may also be examples of spacer-clips and stabilisers. A number of the rim sherds were cut straight and show evidence of ‘smoothing’ which is an indicator that the trough were cut after the clay had dried ‘leather-hard’. Some of the sherds had score lines adjacent and running parallel to the rims indicating the production method previously hypothesised in the original report by Elaine Morris (Morris in Lane 2001: 252-261).

Some of the trough sherds appeared to have evidence of salt staining on the exterior surface, however there was no evidence of scraping marks or extensive crusting of salt on them. This would suggest that the brine was being reduced to a paste in preparation for the second stage of the manufacturing technique. All of the artefact assemblage appeared to have been related to the first stage of the manufacture of salt. No physical evidence was found of containers used for the transportation of the

product away from the site. However, for the ease of transportation and being more lightweight, it makes more sense that organic containers such as leather bags would have been used, which would be unlikely to survive. Alternatively, smaller vessels that may have contained the ‘paste’ would have been transported away from to the point of secondary processing. Again reducing the likelihood that they would survive here.

| Feature No. | Feature Type | Context No. | No. | Weight (g) | Description   |
|-------------|--------------|-------------|-----|------------|---|
| 1241        | Posthole     | 2064        | 3   | 2          | Briquetage trough fragments   |
| 1245        | Pit/well     | 2106        | 19  |            | Briquetage trough fragments   |
| 1249        | Pit/well     | 2122        | 6   | 14         | Possible pedestal fragments   |
| 1254        | Water Hole   | 2159        | 15  | 120        | Possible pedestal/loomweight fragment   |
| 1272        | Gully        | 2264        | 7   | 46         | Briquetage trough fragments including 2 rims  |
| 1273        | Saltern Pit  | 2266        | 17  | 62         | Briquetage trough fragments   |
| 1273        | Saltern Pit  | 2267        | 29  | 126        | Briquetage trough sherds including 1 rim with score line  |
| 1274        | Posthole     | 2269        | 3   | 14         | Briquetage trough fragments   |
| 1274        | Posthole     | 2270        | 25  |            | Briquetage trough fragments   |
| 1278        | Gully        | 2273        | 1   | 1          | Briquetage trough fragment  |
| 1278        | Gully        | 2275        | 2   | 4          | Briquetage trough fragments   |
| 1278        | Gully        | 2277        | 1   | 78         | Briquetage pedestal fragment  |
| 1281        | Gully        | 2284        | 1   | 1          | Briquetage trough fragment  |
| 1283        | Pit cluster  | 2304        | 252 | 774        | Briquetage trough sherds including 7 rims (1 with deep score line), 2 body with score lines, 2 with white staining, pedestal fragment |
| 1283        | Pit cluster  | 2305        | 8   | 102        | Briquetage trough sherds including 4 rims (2 join) and 1 pedestal fragment  |
| 1283        | Pit cluster  | 2306        | 11  | 142        | Briquetage trough fragments including possible pinched out base, 1 rim, pedestal fragment   |
| 1288        | Pit cluster  | 2317        | 1   | 8          | Briquetage trough sherd   |
| 1289        | Pit cluster  | 2319        | 14  | 144        | Briquetage trough sherds including 3 possible rims, pedestal fragments  |
| 1297        | Pit cluster  | 2332        | 10  | 74         | Briquetage trough sherds, pedestal fragments  |
| 1297        | Pit cluster  | 2336        | 25  | 154        | Briquetage trough fragments including 1 rim, pedestal fragments   |
| 1298        | Pit          | 2351        | 47  | 130        | Briquetage trough sherds including 2 rims, 1 with score line  |

Table 2: Briquetage fragments from features

The majority of the briquetage was recovered from pits or the structural features and there appeared to be no features directly associated with the manufacturing of the salt, such as fired areas, ‘settling tanks’, or gullies to collect the water as previously reported in the original excavation (Lane 2001). The limit of the site was extended slightly to the southwest but remains located in a small locale. The pit cluster to the

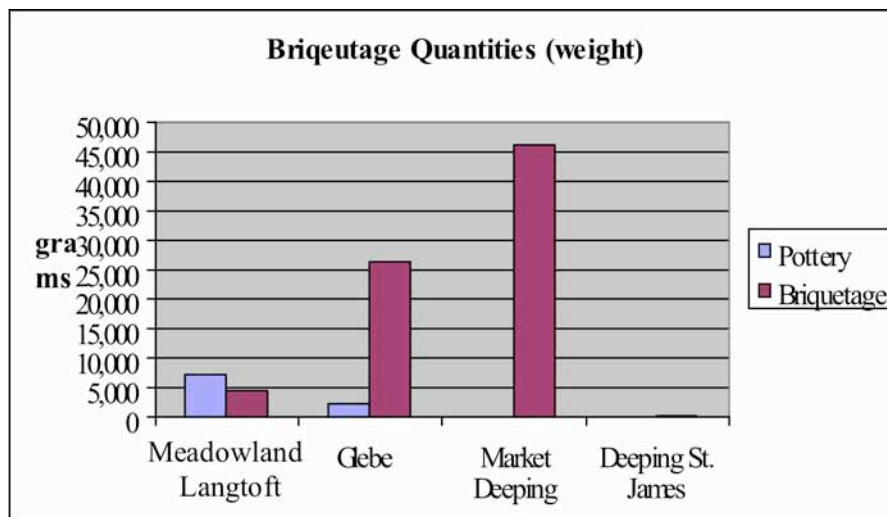
southwest of the saltern site contained a large amount of briquetage that included all feature elements; trough fragment including rims, pedestal fragments and possible spacer clips. The total number recovered from these pits was 321 pieces weighing 1,398g. F.1283 contained the majority; 271 pieces, 1,018g.

There appears to be no evidence of the second stage salt moulds, which tend to be smaller, indicating that this site was a primary production site. Similar saltern sites in the area have also produced a higher number of briquetage fragments such as at Market Deeping.

| Site              | Pottery     | Animal Bone    | Briquetage      |
|-------------------|-------------|----------------|-----------------|
| Meadowlands       | 442 (7364g) | 2718 (27,307g) | 113 (4408g)     |
| Outgang Road      | 163 (2080g) | 41             | 4,426 (24,948g) |
| Glebe (CAU)       | 37 (177g)   | 44 (795g)      | 374 (1510g)     |
| Market Deeping    | -           | -              | 4,031 (46,296g) |
| Deeping St. James | -           | -              | 59 (240g)       |

Table 3: The number and weight of artefacts from the sites

The quantity of bone and pottery from this site was small compared with the sites at Meadowlands Langtoft, whereas the quantity of briquetage differs greatly. There was considerably more briquetage at Glebe and Outgang Road combined (see Graph 1 below) than at Baston, whereas there was a larger domestic assemblage at Baston. The briquetage from the Glebe land and from the Iron Age features from Baston have similar characteristics and fabric matrix indicating that they could possibly be either contemporary of that the same techniques were used for a certain length of time. However, it is not implausible to suggest that the two sites could be linked; the permanent habitation at Baston with the ‘manufacturing’ site at Glebe



The archaeological evidence of features and artefacts recorded on Glebe provided further information to the nature of the site as a discrete locale for the making of salt for the use and possibly trade of the people who occupied that landscape at that time.

## Environmental Remains *Anne de Vareilles*

A further eight samples were processed to add to the information gained in 2007. The flots were all rich in modern rootlets and some untransformed seeds of uncertain date. F.1288 for example, contained many seeds of knotgrass and redshank which had been perforated on one side, suggesting they were probably brought in by insects that may have moved and/or destroyed small archaeological finds. The samples were not waterlogged but F.1265 and F.1264 had some dried waterlogged seeds and wood fragments indicative of an anaerobic past, reflecting the higher prehistoric water-table. Charred plant remains are scarce and unlikely to be in situ. They most likely originate from charring events that occurred further away from the features sampled, and have probably lain scattered on the ground before being randomly buried. Only one cereal remain was found: a wheat glume base (chaff) in F.1264.

| Sample number   | 1185                      | 1187 | 1207 | 1209 | 1190          | 1214          | 1219               | 1196     |
|---|---------------------------|------|------|------|---------------|---------------|--------------------|----------|
| Context   | 2199                      | 2217 | 2298 | 2294 | 2250          | 2317          | 2185               | 2284     |
| Feature   | 1009                      | 1060 | 1275 | 1264 | 1265          | 1288          | 1254               | 1277     |
| Feature type  | Middle Bronze Age Ditches |      |      |      | B.A. pit/well | I.A? pit/well | B.A. watering hole | B.A. pit |
| Sample volume - Litres                                | 4                         | 10   | 14   | 6    | 7             | 8             | 14                 | 10       |
| Flot volume - millilitres                             | 1                         | 5    | 1    | 4    | 16            | 5             | 52                 | 5        |
| Flot fraction examined -%                             | 100                       | 100  | 100  | 100  | 100           | 100           | 100                | 100      |
| <b>Charcoal</b>                                       |                           |      |      |      |               |               |                    |          |
| >4mm  | -                         | -    | -    | -    | -             | -             | -                  | -        |
| 2-4mm   | +                         | +    | -    | -    | -             | +             | -                  | +        |
| <2mm  | ++                        | ++   | ++   | ++   | +             | ++            | ++                 | +++      |
| <b>Cereal Chaff</b>                                   |                           |      |      |      |               |               |                    |          |
| <i>Triticum</i> sp. Glume Wheat glume base            |                           |      |      | 1    |               |               |                    |          |
| <b>Non Cereal Plants</b>                              |                           |      |      |      |               |               |                    |          |
| <i>Chenopodium</i> sp. Goosefoot                      |                           |      |      |      |               | 1             |                    |          |
| <i>Juncus</i> sp. Rushes                              | 1                         | 4    |      |      |               |               |                    |          |
| Indeterminate wild plant stem fragment                |                           | 2    |      |      |               |               |                    |          |
| Untransformed seeds - probably dried waterlogged      |                           |      |      | +    | +             | +++           | +++                | +        |
| Modern intrusive roots                                | P                         | P    | P    | P    | P             | P             | P                  | P        |
| <b>Mollusca</b>                                       |                           |      |      |      |               |               |                    |          |
| Fresh Water / Marshes <i>Bithynia tentaculata</i> L.  |                           | -    |      |      |               |               |                    | -        |
| <i>Lymnaea truncatula</i> Müller                      |                           | -    |      |      | -             | ++            | +                  | -        |
| <i>Physa fontinalis</i> L.                            |                           |      |      |      |               | -             |                    |          |
| <i>Planorbis planorbis</i> L.                         |                           |      |      |      |               |               |                    | -        |
| <i>Gyraulus albus</i> Müller                          |                           |      |      |      |               |               |                    | -        |
| <i>Anisus leucostama</i> Millet                       |                           |      |      |      | -             | ++            | +                  |          |
| <i>Bathymphalus contortus</i> L.                      |                           |      |      | ++   |               | -             |                    |          |
| <i>Hippeutis complanatus</i> L.                       |                           |      |      | +    |               | -             |                    |          |
| <i>Carychium minimum</i> Müller                       |                           |      | -    | +    | -             | ++            |                    | -        |
| Damp / shady areas <i>Succinea</i> sp.                |                           |      |      |      |               | +             |                    |          |
| <i>Cochlicopa lubrica/lubricella</i>                  |                           |      |      |      |               |               |                    |          |
| <i>Oxyxhilus / Aegopinella</i> sp.                    |                           | -    |      |      |               |               | -                  |          |
| Salt marsh/Marine silts <i>Hydrobia ulvae</i> Pennant |                           |      |      |      |               | ++            |                    |          |
| Sea Mussel <i>Mytilus edulis</i> L. frags             | +++                       | +++  |      |      |               |               |                    |          |
| Dry, open grassland <i>Vallonia costata</i> Müller    |                           | -    |      | -    |               | -             | -                  |          |
| Catholic Species <i>Trichia</i> sp.                   |                           |      |      | +    |               |               | +                  |          |
| Undefined habitats <i>Vertigo</i> sp.                 |                           |      |      |      |               | -             | -                  |          |
| <i>Vallonia excentrica/pulchella</i>                  |                           |      |      |      |               | +             | -                  |          |
| <i>Ceciloides acicula</i> Müller                      |                           | -    |      |      | -             |               |                    |          |
| Indeterminate juveniles                               |                           |      | -    | +    | -             |               |                    | -        |
| Burnt bone  | -                         |      |      |      |               |               |                    |          |

Key: '-' 1 or 2, '+' <10, '++' 10-50, '+++>50. P = present

Table 4: Bronze Age Macro Remains from the Bulk Soil Samples

As was seen in 2006/7 the preservation potential for snail shells is good. Relatively rich assemblages were found in F.1264 and F.1288 and show wet – damp

environments not dissimilar to those observed in F.1038 from the 2007 excavations. The samples should be analysed by a malacologist for more detailed interpretations. Interestingly, fragments of sea mussels were found in the heavy residues of both F.1009 and F.1060. They, along with the marine silt snail *Hydrobia ulvae* found in F.1288, can be added to those found in 2007 showing the use of marine resources. The latter snails were grey, either from burning or from their habitat in marine silts. Their abundance in the Middle Bronze Age pits F.1038 and F.1203 suggests that F.1288 is of the same period.

## **Faunal Remains** *Vida Rajkovača*

### **Introduction**

A small assemblage of animal bone was recovered from the Langtoft Glebe site during the excavations carried out in 2008. The assemblage elicited 78 fragments recovered from 15 features scattered across the site. The bones have been hand collected and does not include sieved remains.

The assemblage is predominantly made up of livestock species, but also includes some remains of the wild species (Red deer) typical of sites of this period in this type of the environment (Higbee 1998b). The assemblage represented a continuation of archaeological investigation in the area (Higbee 1998, 1999; Hall 1998; Patten 2003; Webley 2004 a, b; Hutton 2007) and builds on zooarchaeological research executed by Higbee (1998b), Swaysland (2004a, b); Seetah (2007) and Rajkovaca (2008).

The majority of material has been recovered from the features dated to Middle Bronze Age with very little material coming from the features dated to Iron Age. Based on the chronology of the material, two sub sets were created and quantified in separate tables in order to study the site: Middle Bronze Age and Iron Age. Of 78 bones recorded, 76 (97%) were assigned to element and only 27 (34%) to species. This report provides a brief outline of the results following zooarchaeological analyses of the material.

### **Method**

The zooarchaeological investigation followed the system implemented by Bournemouth University with all identifiable elements recorded (NISP: Number of Identifiable Specimens) and diagnostic zoning (amended from Dobney & Reilly 1988) used to calculate MNE (Minimum Number of Elements) from which MNI (Minimum Number of Individuals) was derived. Identification of the assemblage was undertaken with the aid of Schmid (1972) and reference material from the Cambridge Archaeological Unit. Where possible, the measurements have been taken (Von den Driesch 1976). Taphonomic criteria including indications of butchery, pathology, gnawing activity and surface modifications as a result of weathering were also recorded when evident.

### **Preservation details**

The assemblage exhibited quite poor overall preservation. Of 33 contexts studied 28 showed 'quite poor' to 'poor' preservation with signs of extensive weathering and bone surface exfoliation. Only five contexts were of 'moderate' preservation. Bones



were very often vertically split possibly for marrow extraction creating a number of bones which could only be assigned to a size category (Large and Medium Mammal). If a number of fragments were discovered to refit from the same bone, they were recorded as one specimen. Some bones displayed canine gnawing marks, indicating the presence of dogs on the site and dogs have been recorded osteologically.

## Results

### *Middle Bronze Age contexts*

The composition of this sub set is in common with most archaeologically recovered assemblages in Britain. It is dominated by the remains of the livestock species such as cattle, sheep/goat, horse and dog (Table 1). Wild fauna seems to be of very little importance on this site, as only one red deer antler fragment has been found. It has a slight palmate shape to it and it was hard to determine which part of the antler this actually represents, but with the aid of Hillson (1999:7), it would appear that the fragment most likely represents the top end/crown of a mature red deer stag.

Of 66 fragments recorded within this sub set, 27 (40%) were recovered from a large watering hole (F. 1254) where one measurable cattle metatarsal was found. Withers estimates based on this specimen were at the lower end of the range at 113 cm and they followed the conversion factors of Fock (see Von den Driesch and Boessneck 1974).

| SPECIES                                      | BLGL08-Middle Bronze Age |                    |     |
|--|--------------------------|--------------------|-----|
|  | NISP                     | %NISP              | MNI |
| Cow ( <i>Bos taurus</i> )                    | 9                        | 43                 | 2   |
| Horse ( <i>Equus ferus caballus</i> )        | 5                        | 24                 | 1   |
| Dog ( <i>Canis familiaris</i> )              | 4                        | 20                 | 1   |
| Ovicaprid ( <i>Ovis aries/Capra hircus</i> ) | 2                        | 9                  | 1   |
| Red deer ( <i>Cervus elaphus</i> )           | 1                        | 4                  | 1   |
| ULM  | 20                       | 19 ( $\Sigma=76$ ) | -   |
| UMM  | 17                       | 17 ( $\Sigma=76$ ) | -   |
| UUM  | 8                        | 7 ( $\Sigma=78$ )  | -   |

Table 1: NISP and MNI counts for Middle Bronze Age contexts

Key: UMM & ULM = Unid. Medium and Large Mammal / UUM = Unid. Fragment. NB: Species percentages are out of 21. These differ from the unidentified counts as these are calculated on the basis of element identification (for UMM & ULM) and total fragments (for UUM) (corresponding to  $\Sigma$  in brackets).

### *Iron Age contexts*

Small amount of bone material was found in four features dated to Iron Age, three of which were pits (F. 1283, F. 1288; F. 1298), all within the same cluster, and one was a gully (F. 1278). This sub set has an impoverished representation of species (Table 2) and did not produce any measurable or ageable specimens.

## Conclusions

The results obtained from this assemblage have proved to be in keeping with the results from the previous year's work (Rajkovaca 2008). Middle Bronze Age sub set has for its main component cattle, followed by horse, dog and ovicaprids, reflecting the importance of livestock species and especially cattle in the Bronze Age economy. Red deer is represented with only one antler fragment which could have been collected. Kill-off profile based on dental eruption and wear is needed for further studies of Bronze Age subsistence bases and also to provide the important information about the uses to which cattle in this region were put.

| SPECIES                                      | BLGL08-Iron Age |       |     |
|--|-----------------|-------|-----|
|  | NISP            | %NISP | MNI |
| Cow ( <i>Bos taurus</i> )                    | 4               | 80    | 1   |
| Horse ( <i>Equus ferus caballus</i> )        | 1               | 10    | 1   |
| Ovicaprid ( <i>Ovis aries/Capra hircus</i> ) | 1               | 10    | 1   |
| ULM  | 4               | -     | -   |
| UMM  | 1               | -     | -   |
| UUM  | 1               | -     | -   |

Table 2: NISP and MNI counts for Iron Age contexts

Key: UMM & ULM = Unid. Medium and Large Mammal / UUM = Unid. Fragment. NB: Species percentages are out of 6.

## Conclusions

The results obtained from this assemblage have proved to be in keeping with the results from the previous year's work (Rajkovaca 2008). Middle Bronze Age sub set has for its main component cattle, followed by horse, dog and ovicaprids, reflecting the importance of livestock species and especially cattle in the Bronze Age economy. Red deer is represented with only one antler fragment which could have been collected. Kill-off profile based on dental eruption and wear is needed for further studies of Bronze Age subsistence bases and also to provide the important information about the uses to which cattle in this region were put.

Small size of the assemblages precludes any conclusions about the site in later periods. However, spatial analysis of the bone would enhance the study of the patterns of deposition on the site. The synthesis of this material and the material available from the other excavations in the area would be important if we were to understand the characteristics of the economies in the area. The study of seasonality could be extremely important and the supporting data could be obtained from the remains of the wild species.

Future research should seek to synthesise the available information not only from the excavations on this site (Higbee 1998b; Swaysland 2004a; b; Seetah 2007; Rajkovaca 2008), but also from the excavation of the other contemporary sites in the area (i.e. Clarke 2000; 2002a; 2002b; Clarke and Dodwell 2000; Higbee 1998b; 1998c; Swaysland 2004c; 2005).

## Waterlogged Wood *Maisie Taylor*

52 fragments of wood were recovered from four features (F.1248, F.1249, F.1254, F.1304). Of this, however, at least 37 were from natural unworked roundwood. Of the rest a further 5 showed no signs of tool marks.

Seven pieces of wood were examined and recorded in detail using pro-forma wood sheets. All the wood examined came from one feature, F.1254, a large pit or waterhole. Five of the seven pieces examined are substantial timbers or debris from substantial timbers. The other two are a length of roundwood and a piece of worked bark.

Using the scoring scale developed by the Humber Wetlands Project (Van de Noort, Ellis, Taylor and Weir 1995 Table 15.1) most of the material scores 2 or 3. This condition scale is based primarily on examination of the surface of the wood and the data which was recorded from that examination. The condition score reflects whether each type of analysis might be profitably applied, it is not intended as a recommendation for various analyses or treatment. A score of 5 would mean that all or any of the processes detailed from museum conservation to species identification might be worth applying to the material. A score of 0, on the other hand would mean that the material was a right-off as far as any of the listed analysis were concerned. A score of 2 - 3 therefore, means that the material may or may not stand up to most forms of analysis but would not be suitable for museum conservation.

|   | MUSEUM<br>CONSERVATION | TECHNLOGY<br>ANALYSIS | WOODLAND<br>MANAGEMENT | DENDRO-<br>CHRONOLOGY | SPECIES<br>IDENTIFICATION |
|---|------------------------|-----------------------|------------------------|-----------------------|---------------------------|
| 5 | +                      | +                     | +                      | +                     | +                         |
| 4 | -                      | +                     | +                      | +                     | +                         |
| 3 | -                      | +/-                   | +                      | +                     | +                         |
| 2 | -                      | +/-                   | +/-                    | +/-                   | +                         |
| 1 | -                      | -                     | -                      | -                     | +/-                       |
| 0 | -                      | -                     | -                      | -                     | -                         |

The quality of preservation of the wood is extremely variable which means that its potential also varies. Problems with the preservation include root damage, drying out and iron pan formation. [2380] is very deteriorated because it is almost entirely sapwood, which it is more vulnerable than the heartwood. This structure is very unusual for a waterhole structure. In particular the timbers are very large. It is possible that some of the timbers are re-used, or that they are left over off-cuts from reducing a large tree.

The tree rings should be examined and assessed. It is unlikely that all or many will be suitable for dating but initial examination suggests some unusual patterning in the rings. The function of the structure needs consideration as well as comparanda.

### F.1254

- [2380] Timber, tangentially split, 1 end square/1 end ?joint L.1400+ x 170 x 38mm
- [2381] Bark, trimmed square L.390 x 330 x 33mm
- [2382] Roundwood, trimmed 1 end/1 direction and torn heel L.585 D.20mm
- [2383] Timber debris, radially split L.290 x 33 x 12mm
- [2395] Timber, radially split L.1270 x 150 x 32mm
- [2396] Timber, radially split and trimmed squarish L.1070 x 65 x 42mm
- [2397] Timber debris, radially split, trimmed 1 end/3 directions L.400+ x 55 x 35mm

### **Stone** *Alison Dickens*

Three pieces of worked and 74 pieces of unworked stone were recovered from nine features (5492g). 56 pieces were burnt including 11 of the 19 pieces from F.1254.

The three worked pieces are from features F.1009 and F.1283. From F.1009 is a single fragment (500g), faced on one side, possibly part of a quern. It is badly broken with a smooth face on one side only. The stone is a close-grained, hard possibly metamorphosed sandstone, noticeably heavy for its size. The two fragments from F.1283 join and are more clearly part of a quern stone. This is a rather coarser grained sandstone, burned following discard.

Where identifiable the smaller fragments are of the coarser sandstone, many are eh burnt remnants of larger cobbles, but do not show signs of working. Given the location all stone must have been brought to the site and is therefore of significance.

Further work is required to identify stone type and to attempt to locate sources where possible.

| <b>Feature</b> | <b>Total</b> | <b>Worked</b> | <b>Burnt</b> | <b>Weight (g)</b> |
|----------------|--------------|---------------|--------------|-------------------|
| 1009           | 1            | 1 = quern     |              | 500               |
| 1247           | 6            |               | 6            | 44                |
| 1245           | 16           |               | 9            | 388               |
| 1254           | 19           |               | 11           | 360               |
| 1273           | 1            |               | 1            | 306               |
| 1277           | 3            |               | 3            | 80                |
| 1264           | 1            |               |              | 1046              |
| 1283           | 27           | 2 = quern     | 26           | 2614              |
| 1297           | 1            |               |              | 214               |

## Appendix 2 Feature Descriptions

### *Linear Features*

**F.1009** was a linear on a northeast-southwest orientation and ran in length 34.00m and width ranging between 0.92-1.23m and between 0.41-0.58m deep; two 1.00m slots were sampled including the terminal. The fills consisted of;

- [2195] compact dark grey/black silty clay with occasional gravel inclusions and flecks of charcoal
- [2196] compact mid grey/brown silty clay with occasional gravel inclusions and flecks of charcoal
- [2197] compact mid blue/grey silty clay with occasional gravel and iron pan inclusions and flecks of charcoal
- [2200] cut 1.23m wide and 0.41m deep with steep concave sides with moderate break of slope and concave base
  
- [2210] compact mid yellow/grey silty clay with rare gravel inclusions and frequent flecks of charcoal
- [2211] compact mid yellow/grey silty clay with frequent gravel inclusions and flecks of charcoal
- [2212] compact light blue/grey silty clay with rare gravel inclusions and flecks of charcoal
- [2209] cut terminal round in plan 0.92m wide and 0.58m deep with moderately steep concave sides becoming more convex on the northwest side and sharp concave based; the southeast side was obscured by F.1268

**F.1060** was a linear that continued from the previous area (BLGL 07) on a northeast-southwest orientation and was 16.10m+ in length and the width was between 1.00-1.37m wide and between 0.33-0.61m deep; two 1.00m slots were sampled including the terminal. The depth of the linear was much shallower at the terminal and became much deeper with convex sides towards the east. The eastern slot of the ditch cut an earlier pit, F.1271. The lower fills were fairly similar in both sampled slots; however there was a dumping episode of mussel shells in the eastern slot. The fills consisted of;

- [2091] firm and moist mid grey/brown silty clay with occasional to moderate gravel inclusions and occasional flecks of charcoal
- [2092] firm and moist mid orange sandy clay with occasional gravel inclusions and rare flecks of charcoal
- [2093] cut terminal round in plan 1.37m wide and 0.33m deep with moderate concave sides with moderate break of slope and flat base
  
- [2216] moist mid grey/black silty clay with flecks of charcoal
- [2217] moist mid grey to black silty clay with frequent mussel shell inclusions
- [2218] moist light blue/grey clay
- [2219] re-deposited natural loose moist light grey/orange/brown silty gravel
- [2220] cut 1.00m wide and 0.61m deep with steep convex sides, near vertical on the northern side and moderate on south side with moderate to sharp break of slope and concave base

**F.1253** was a linear on a northwest-southeast orientation that had a northern terminal and continued southwards out of the current investigative area. It was 16.25m+ in length and ranged between 0.90-1.16m wide and between 0.45-0.52m deep; two 1.00m slots were sampled including the terminal. There was evidence of a re-cut in the southern slot which was placed adjacent to the terminal of F.1060, therefore re-affirming the linears, perhaps to form an enclosure to the south outside of the area. The fills consisted of;

- [2094] mid grey sandy clay with occasional gravel inclusions and flecks of charcoal and fired clay

[2095] mid orange/grey sandy clay with sandy patches with moderate gravel inclusions with rare flecks of charcoal

[2096] orange/pale grey sandy clay with moderate gravel inclusions

[2097] cut terminal round in plan 0.90m wide and 0.45m deep with moderate sloping straight/concave sides and sharp concave base

[2259] moist dark grey/black silty clay with moderate flecks of charcoal

[2260] moist mid brown/orange silty gravel

[2261] light grey/blue silty clay with flecks of charcoal

[2262] moist mid brown/orange silty gravel

[2263] cut 1.16m wide and 0.52m deep with moderately steep concave sides with moderately sharp concave base

**F.1264** was a linear on a northwest-southeast orientation and was approximately 36.20m in length, four 1.00m slots were sampled included both terminals. The northern terminal cut into pits F.1265 and F.1270 that appeared had been partly silted which gave the impression that the linear was deeper at the terminal. There was a sequence of fills of fine sands and gravels that had eroded from the sides interspersed with waterlogged organic remains. Periods of silting occurred afterwards before the linear was re-cut which immediately formed a waterlogged organic layer, after which periods of silting continued. This linear appeared to have been re-cut an earlier small and shallow linear on the same orientation that continued southwards. The sample slot that was placed across the linear and a pit (F.1282) provided no stratigraphic evidence on their relationship, and the fills at this point was shared by both features. The fills consisted of;

[2252] firm mid brown/grey silty clay with occasional gravel inclusions and frequent flecks of charcoal

[2253] mixed layers of mid orange/brown silty clay with frequent gravel inclusions and orange/brown silty clay with moderate gravel inclusions and mid grey silty clay with moderate gravel inclusions

[2254] firm bark brown/black silty clay with occasional gravel inclusions and organic inclusions

[2255] re-cut 0.00m wide and 0.00m deep with sloping sides with sharp concave base

[2256] silted deposits and lenses of loose pale yellow/grey silty sand and loose red/brown sand and lenses of firm mid orange fine gravel and dark brown/black clayey silt

[2257] cut 1.30m wide and 0.90m deep with moderately steep concave sides with shallow concave base

[2287] firm mid brown/grey silty clay with occasional gravel inclusions and frequent flecks of charcoal

[2288] mixed re-deposited natural with firm pale brown/grey silty clay and pale orange/grey silty clay with rare gravel inclusions

[2289] lenses of mid grey gravels with silty clay matrix and pale grey/white silty sand and pale orange/white silty sand with frequent gravel inclusions

[2286] cut 1.05m wide and 0.61m deep with gradual concave sides and concave base

[2291] firm mid brown/grey silty clay with occasional gravel inclusions and frequent flecks of charcoal

[2292] firm pale brown/grey silty clay with moderate gravel inclusions

[2293] mixed lenses of mid orange gravel with silty clay matrix and mid orange gravel with sand matrix and pale orange/white silty sand and pale grey/white silty sand

[2272] cut 1.20m wide and 0.62m deep with steep concave sides and concave base

[2294] firm mid brown/grey silty clay with moderate gravel inclusions and frequent flecks of charcoal

[2295] firm pale brown/grey silty clay with occasional gravel inclusions

[2296] firm mid brown/orange silty clay with frequent gravel inclusions

[2297] cut southern terminal round in plan 1.20 m wide and 0.36m deep with steep concave sides and concave base

**F.1266** was an isolate short segmented linear of varying depth located at the southern edge of the investigation area. There were no associated features and no artefacts were recovered; both terminals were sampled and the context numbers were kept the same for both slots and these consisted of;

- [2201] firm brown/grey clayey silt with occasional gravel inclusions and flecks of charcoal
- [2207] orange/brown clayey silt with occasional gravel inclusions
- [2208] orange/grey clayey silt with frequent gravel inclusions
- [2202] cut 0.56-0.68m wide and 0.21-0.36m deep with moderately steep concave sides and concave base

**F.1275** was a narrow gully on a northwest-southeast orientation that was truncated by linear F.1264. It was approximately 18.50m in length and two 1.00m slots were sampled including the southern terminal. The fills were consistent in both sampled slots consisted of;

- [2298] firm mid brown/grey silty clay with moderate gravel inclusions and moderate flecks of charcoal
- [2299] cut 0.56m wide and 0.14m deep with gradual concave sides and concave base

**F.1280** was a narrow linear that was on a northwest-southeast orientation and was 3.00m in length and continued south out of the designated area and was on the same alignment as linears F.1264 and F.1275. The terminal was sampled and the fill consisted of;

- [2302] firm mid brown/grey silty clay with occasional gravel inclusions and flecks of charcoal
- [2303] cut 0.62m wide and 0.14m deep with gradual concave sides and concave base

### ***Pit/wells***

**F.1245** was a pit well that was initially silted with fine sands and gravel [2108] before developing a wet muddy fill [2106] and [2107] with plant growth. More silting occurred over this deposit with material eroding from the sides [2105]. These primary deposits were re-cut [2104] presumably to re-access the water table. Fine sands [2103] then silt into the re-cut before a darker organic muddy waterlogged deposit occurred [2102] after this, final silted deposits of eroded sand and gravel but more predominantly washed and slumped topsoil. Finally backfilled deposits [2098] and [2100] occurred. Bone, pottery and burnt stone were recovered. Possibly all the upper layers were backfilled at the same time but slumped to create a dip which subsequently in-filled. There was a possible step on the north side of the cut which would have aided access and reduced the need for a log ladder.

- [2098] firm mid red/brown silty clay with occasional gravel inclusions and frequent flecks of charcoal
- [2099] firm mid grey/brown silty clay with occasional gravel inclusions and frequent fleck of charcoal
- [2100] firm mid orange/brown silty clay with occasional gravel inclusions and moderate flecks of charcoal
- [2101] various silted lenses predominantly firm brown/grey silty clay with frequent gravel inclusions, mid yellow/brown silty clay with frequent gravel inclusions, pale grey/white gravel with silty sand matrix and orange gravel with silty sand matrix
- [2102] firm dark red/brown silty clay with moderate organic root material and occasional gravel inclusions
- [2103] loose mid brown/orange sand
- [2104] re-cut presumably sub circular in plan 1.06m x 1.15m wide and 0.55m deep with steep concave sides becoming more uneven on the west side with slightly uneven concave base
- [2105] silted lenses comprising pale grey/white and orange ravel with silty sand matrix and pale brown/yellow sand and mid brown/grey silty clay with moderate gravel inclusions and mid grey/brown clay
- [2106] mid orange/brown silty sandy clay with lenses of dark red/brown silty clay and organic material

- [2107] firm dark red/brown silty clay with slight orange sand lensing and with organic material
- [2108] silted lenses of mid brown/yellow sand and pale yellow/grey gravel with sand matrix
- [2109] cut circular in plan 2.48m x 2.78m wide and 0.97m deep with slightly uneven sides; steep concave east-west, steep convex and stepped north-south

**F.1248** was a pit/well with episodes of silting and slumping and dumping of domestic material in the upper layers. The original cut encountered a layer of very compacted iron pan which resulted with the reduction of the size of the well. A small elongated oval hole was cut onto the iron pan to possibly access water. The underlying natural deposits were eroded, especially the sides from the activity of extracting water which caused undercutting beneath the layer of iron pan. The fills consisted of;

- [2138] friable mid brown humic peaty silt with occasional flecks of charcoal
- [2139] firm grey/brown clayey silt with occasional gravel inclusions and flecks of charcoal
- [2140] mixed deposit black/brown clayey silt with frequent flacks of charcoal with mid yellow/white clayey silty sand and brown/grey clayey silt with occasional gravel inclusions
- [2141] light grey/brown clayey silt with occasional gravel inclusions and flecks of charcoal
- [2142] firm dark brown/grey clayey silt with occasional gravel inclusions and flecks of charcoal
- [2143] brown/grey clayey silt with moderate gravel inclusions and flecks of charcoal
- [2144] light brown/grey clayey sandy sit with frequent gravel inclusions and occasional flecks of charcoal
- [2145] mid brown/grey clayey silt with moderate gravel inclusions and flecks of charcoal
- [2146] light orange/grey clayey sandy silt with frequent gravel inclusions and occasional flecks of charcoal and shell
- [2193] light grey clayey silt with frequent gravel inclusions
- [2147] firm grey clay with occasional organic matter
- [2148] firm grey clay with moderate organic matter
- [2149] light grey clayey silt with frequent gravel inclusions and occasional flecks of charcoal
- [2150] brown/grey silty clay with frequent gravel inclusions and organic matter
- [2151] compact dark brown/grey silty clay with frequent gravel inclusions and degraded stone
- [2152] firm brown/grey silty clay with moderate gravel inclusions and organic matter
- [2153] firm grey clay with occasional organic matter
- [2154] light grey clayey silt with frequent gravel inclusions
- [2155] mixed organic layers and lenses consisting of black/grey with organic matter and brown/orange iron pan and grey silty clay and grey/brown silty clay with frequent gravel inclusions
- [2156] cut sub-circular in plan 2.95m x 2.90m wide and approx 0.86m deep, the cut through the iron pan was 0.00m x 0.00m wide. The under-cutting of the feature could not be fully measured, although the north-south axis was approx 0.00m wide

**F.1249** was a pit well with the sides naturally degraded which resulted with the feature being rugged around the cut. These periods of silting and slumping from the edge formed the primary fills which resulted in plant growth after the well went out of use. There were three main phases of organic deposition [2122], [2117] and [2112] and later backfilled with [2111] and [2110]. Fill [2111] contained the majority of artefacts and could represent a dumping episode after the discontinuation of the well. There was also a possible step on the edge of the south side of the pit. The fills consisted of;

- [2110] moist mid grey/brown clayey silt with occasional flecks of charcoal
- [2111] moist mid grey/orange/brown clay silt with occasional gravel inclusions and flacks of charcoal and shell
- [2112] moist dark grey/black organic layer containing a dense amount of organic material towards the base of the fill
- [2113] moist light orange/grey silty gravel with lenses of [2112] mixed in
- [2114] re-deposited natural light grey silt
- [2115] moist mid grey clay silt with mixed organic and moderate gravel inclusions
- [2116] re-deposited natural mid brown/orange silty gravel
- [2117] moist dark grey/black organic fill with frequent charcoal inclusions and organic material
- [2118] re-deposited moist light grey/white silty gravel



[2119] re-deposited natural moist mid brown/orange silty gravel  
 [2120] re-deposited natural moist light grey/white silty gravel  
 [2121] light grey/white sandy silt  
 [2122] moist dark grey/black organic fill with frequent charcoal inclusions and wood  
 [2123] re-deposited natural moist light grey/white silty gravel  
 [2124] re-deposited natural moist light grey/white silty gravel  
 [2125] re-deposited natural moist mid brown/orange silty gravel  
 [2126] moist mid brown/orange silty gravel  
 [2127] dark grey/black sandy silt with frequent root inclusions  
 [2128] re-deposited natural moist light grey/white silty gravel  
 [2129] compact moist mid brown/grey clayey silt with flecks of charcoal  
 [2130] re-deposited natural loose moist mid brown/orange silty gravel  
 [2131] loose moist light grey/white silty gravel  
 [2132] re-deposited natural loose moist mid brown/orange silty gravel  
 [2133] re-deposited natural loose moist mid brown/orange silty gravel  
 [2134] re-deposited natural loose moist mid brown/orange silty gravel  
 [2135] re-deposited natural loose moist light grey/white silty gravel  
 [2136] dark brown/black organic material (roots)  
 [2137] cut sub circular in plan 3.90m x 3.40m wide and 1.30m deep with steep straight/concave sides with moderate break of slope and slightly concave flat base with the south sides slightly convex at the top

**F.1265** was a large pit/well that was cut by a linear (F.1264) and pit (F.1265). It can be suggested that the orientation of the linear F.1264 was altered to incorporate this pit. Only the lower primary fill remained and consisted of;

[2250] mixed pale grey/white sand and brown/orange gravel with silty sand matrix and lenses of mid grey/brown sandy silt and orange fine gravel and dark brown/black organic silty clay  
 [2251] cut 2.20m x 2.17m wide and 1.05 deep with steep concave sides, moderately sharp break of slope and flat base  
 [2203] compact mid grey/black silty clay with occasional flecks of charcoal  
 [2204] re-deposited natural loose mid brown/orange silty gravel  
 [2205] moist plastic light blue/grey silty clay with no inclusions  
 [2206] cut circular in plan 1.40m x 1.38m wide and 0.48m deep with moderately steep concave sides and concave base

**F.1294** was a large pit where the upper cut was concave that became vertical down to a flat base. There was abundant wood at the base which appeared to have been a random dumping episode with no signs of working. The base had been gently eroded and the natural sides subsided. This pit appeared to have been associated with F.1295 and F.1296 and a pit/well F.1304. The fills consisted of;

[2343] moist light grey silty clay with no inclusions  
 [2344] moist mid grey/black silty clay with occasional flecks of charcoal  
 [2345] moist light orange/grey silty clay  
 [2346] moist mid brown/grey silty clay with occasional flecks of charcoal  
 [2347] moist dark brown/black organic material with abundant wood inclusions  
 [2348] moist sticky mid blue/grey clay  
 [2349] moist re-deposited natural light grey/orange silty gravel  
 [2350] cut circular in plan 1.65m x 1.62m wide and 1.17m deep with steep convex sides becoming vertical towards the base with very sharp break of slope and flat base

### ***Watering hole***

**F.1254** was a large watering hole. With multiple fills that represented gradual silting, edge erosions and up-cast from re-cuts and the cleaning out of the base of the central area. Various pieces of worked wood were recovered included worked stakes that held split planks into place. The fills consisted of;

[2157] firm light grey silty clay with occasional gravel inclusions and flecks of charcoal

- [2158] firm dark grey silty clay with occasional gravel inclusions and flecks of charcoal
- [2159] firm mid grey clay with orange mottling with rare gravel inclusions and occasional flecks of charcoal
- [2160] firm mid grey sandy clay with orange mottling with frequent gravel inclusions and occasional flecks of charcoal
- [2161] firm mixed pale grey/orange silty sand with frequent gravel inclusions
- [2162] loose lens of orange/white sand with frequent gravel inclusions
- [2163] compact red/orange sandy gravel and iron pan
- [2164] firm mixed pale grey/orange silty sand with frequent gravel inclusions
- [2165] firm dark grey sandy silt with moderate gravel inclusions and occasional flecks of charcoal
- [2166] compact red/orange gravel and iron pan slump
- [2167] lens of fine orange/white sand
- [2168] firm mixed orange sandy gravelly clay with orange iron pan with frequent gravel inclusions
- [2169] firm mid yellow/brown/orange sandy clay with occasional gravel inclusions
- [2170] firm dark brown/grey sandy clay with moderate gravel inclusions
- [2171] firm mixed mid grey/orange sandy silt with frequent gravel inclusions
- [2176] firm mottled pale grey sandy gravel with orange iron pan mottling with frequent gravel inclusions
- [2221] firm pale grey sandy clay with frequent gravel inclusions
- [2222] firm mid grey sandy clay with frequent gravel inclusions
- [2223] loose white/red sand with moderate gravel inclusions
- [2224] very compacted red/orange sandy gravel iron pan
- [2225] loose grey sand with moderate gravel inclusions
- [2226] loose white sand with occasional gravel inclusions and flecks of charcoal
- [2227] firm mid yellow/grey clay
- [2228] light yellow/grey sandy clay
- [2229] firm mid grey clayey sand with moderate gravel inclusions
- [2230] firm pale grey and mid orange clayey sand with frequent gravel inclusions
- [2231] mid blue/grey clay
- [2232] firm red sandy gravel
- [2233] loose mottled mid grey/orange sandy clay with frequent gravel inclusions
- [2234] firm mid blue/grey sand with frequent gravel inclusions
- [2235] dark grey sandy clay with occasional gravel inclusions and flecks of charcoal
- [2236] firm patchy pale grey and mid orange clayey sand with frequent gravel inclusions
- [2237] firm pale grey sandy clay with frequent gravel inclusions
- [2238] firm red gravelly sand slump
- [2239] mid grey clay with occasional gravel inclusions

**F.1304** was a large pit that had similarities with a pit/well and that of a watering hole. It contained layers of silting with fragments of wood towards the base; one could possibly have been a degraded log ladder, although the northeastern side had a slight convex step. The fills consisted of;

- [2374] compact dark blue/grey sandy clay with rare gravel inclusions and flecks of charcoal
- [2375] firm mid grey/orange silty sand with frequent gravel inclusions
- [2376] firm light orange/grey silty sand with frequent gravel inclusions and flecks of charcoal
- [2377] firm dark orange sand with frequent gravel and iron pan
- [2378] firm dark orange sand with frequent gravel and iron pan
- [2389] loose light grey/white silty sand with frequent gravel inclusions and flecks of charcoal
- [2390] firm dark grey/black silty clay with occasional gravel inclusions and flecks of charcoal
- [2379] cut circular in plan 3.10m x 3.45m wide and 1.10m deep with steep moderate convex sides with moderate break of slope and slightly uneven flat base

### ***Postholes, small pits and other features***

**F.1240** was a tree throw with a shell rich fill.

[2060] soft to moderately firm mid grey silty sand with frequent pea gravel inclusions and frequent land snail shells  
[2060] firm light yellow sand  
[2063] cut 2.70m x 1.48m wide and 0.28m deep with gradual sloping sides and uneven slightly concave base

**F.1241** was a posthole that was located with the saltern area that was previously excavated during 1994. This had evidence of possible animal activity which resulted with the authenticity of the feature unclear. The fill consisted of;

[2064] firm mid grey clayish silt with occasional gravel and chalk inclusions with occasional flecks of charcoal  
[2065] cut oval in plan 0.90m x 0.49m wide and 0.52m deep with the south being much steeper and the edge undercut with a concave base

**F.1242** was a large pit that was partly excavated during the excavation of the saltern site during 1994 by Heritage Lincolnshire. Bushes were growing in the feature that was originally left open and not backfilled; although the feature was not fully excavated which allowed part of the pit to be excavated during this investigation as it lay the CAU's designated area. The fills consisted of;

[2066] firm dark grey/brown clayish silt with occasional small stone inclusions and with rare to occasional flecks of charcoal and fired clay and evidence of modern root system  
[2067] firm dark blue/grey silt with rare gravel inclusions and moderate flecks of charcoal and occasional small fragments of fired clay and evidence of modern root system  
[2068] firm dark blue/grey silt with frequent density of charcoal and fragments of fired clay  
[2069] firm and crumbly light grey clayish silt with occasional orange mottling and frequent gravel inclusions  
[2070] cut sub oval pit c. 1.40m x 3.40m+ wide and at 0.56m+ deep with sloping concave sides and concave base

**F.1243** was a shallow depression adjacent to F.1241 which was probably Post Medieval and associated with F.1244. The fill consisted of;

[2072] firm dark grey silty clay with occasional gravel inclusions  
[2073] cut 0.53m x 0.31m wide and 0.08m deep with sloping concave sides and concave base

**F.1244** was a short shallow linear that was probably Post Medieval and associated with F.1243. The fill consisted of;

[2074] firm dark grey silty clay with occasional gravel inclusions  
[2075] cut 1.28m x 0.22m wide and 0.08m deep with shallow sloping sides and sharp concave base

**F.1246** was an isolated truncated posthole that was situated to the west of F.1247. The fills consisted of;

[2076] soft dark grey silt with rare gravel inclusions, frequent flecks of charcoal and occasional fired clay  
[2077] re-deposited natural mixed white and orange silty clay  
[2078] cut circular in plan and 0.40m x 0.33m and 0.07m deep with sloping concave sides and concave base

**F.1247** was a small pit that was situated to the east of F.1247, a truncated posthole. The fills consisted of;

[2079] soft dark grey silt with rare gravel inclusions, frequent flecks of charcoal and moderate fragments of fired clay  
[2080] re-deposited natural mixed white and orange silty clay and orange gravelly clay  
[2081] cut oval in plan and 1.233m x 0.98m wide and 0.29m deep with moderate concave sides and concave base

**F.1255** was a tree throw located next to the watering hole that probably predates that feature. The fills consisted of;

[2173] dark grey/black silty clay with occasional gravel inclusions and frequent flecks of charcoal

[2174] mottled pale grey/orange sandy clay with occasional gravel inclusions

[2175] cut irregular elongated oval in plan 2.00m in length 0.70m in width and 0.25m deep with irregular concave sides and concave base

**F.1268** was modern disturbance that truncated the terminal of linear F.1009.

**F.1271** was a shallow oval pit than was adjacent to linear F.1060 that may have formed part of the natural erosions of the edge of the linear but more than likely is was an earlier shallower linear that was cut by F.1060. The fills consisted of;

[2242] moist mid grey/black silty clay with flecks of charcoal and was similar to fill [2216]

[2243] loose moist light grey/orange/brown silty gravel

[2244] cut 0.80m wide and 0.31m deep with moderately steep concave sides and concave base

**F.1265** was a large pit that was initially silted with fine sands and gravel presumably from the edges. There were thin bands of silting from topsoil on the southern side with further silted material to the western extent. There was also evidence of plant growth by lenses of organic material in the fill. After this initial stage of silting and organic material it was cut by linear F.1264. The fills consisted of;

[2250] mixed pale grey/white sand with brown/orange gravel with silty sand matrix with thin lenses of mid grey/brown sandy silt with orange fine gravel and dark brown/black organic silty clay

[2251] cut sub-circular in plan 2.20m x 2.17m wide and 1.05m deep with steep concave sides with moderate break of slope and shallow concave base

**F.1269** was a narrow shallow gully that was cut by F.1245, a pit/well, as well as the later linear F.1264 and possibly represents evidence of an earlier field system. Two 1.00m slots were sampled including the terminal and the linear was 7.40m in length. The fills consisted of;

[2245] moderately loose mid brown/orange gravel with silty clay matrix

[2246] firm pale blue/grey silty clay with frequent gravel inclusions

[2247] cut terminal round in plan 0.53m wide and 0.25m deep with sloping sides and gradual break of slope with concave base

**F.1270** was a small shallow pit that truncates gully F.1269 at the junction with linear F.1264 and was still open when this linear was originally dug as both features silted together. There is no clear relationship with pit F.1265. The fill consisted of;

[2248] mixed brown/orange sandy gravel and pale grey/white silty sands with frequent gravel inclusions

[2249] cut 0.60m wide and 0.80m deep with steep concave sides with gradual break of slope and shallow concave base

**F.1273** was a small but relatively steep pit that consisted of two fills with numerous artefacts that consisted of pottery and was situated to the west and south of the structures excavated in 1994. The fills consisted of;

[2266] firm dark grey/black clayey silt with rare gravel inclusions and flecks of charcoal

[2267] firm mid grey/black clayey silt with rare gravel inclusions and flecks of charcoal

[2268] cut 1.01m x 0.74m wide and 0.68m deep steep to vertical concave sides with moderately sharp break of slope and concave base

**F.1274** was a large isolated posthole to the west of the saltern site that contained Briquetage trough fragments. The fills consisted of;

[2269] soft mottled light grey/yellow/white clayey silt with rare gravel inclusions and flecks of charcoal

[2270] firm light blue/grey clayey silt with rare gravel inclusions and flecks of charcoal

[2271] cut 0.59m x 0.62m wide and 0.17m deep with steep to vertical concave sides with slight convex to the east side with moderate break of slope and flat to concave base

**F.1276** was a small pit that truncated gully F.1275. The fill consisted of;

[2300] firm mid brown/grey silty clay with moderate gravel inclusions and occasional flecks of charcoal

[2301] cut circular in plan 0.62 x 0.60m wide and 0.40m deep with steep concave sides and concave base

**F.1277** was a small shallow pit that contained abundant degraded pottery and burnt material and possibly represents the remains of a midden. The top of the feature appeared to be altered by plough marks. The fill consisted of;

[2281] moist dark brown/black sandy silt with frequent flecks of charcoal

[2282] cut sub-oval in plan 1.05m x 0.68m wide and 0.11m deep with moderately steep concave sides and concave base

**F.1279** was a posthole that was adjacent to the northern terminal of gully F.1278 that formed part of a structure. The fill consisted of;

[2279] firm light blue/grey clayey silt with rare gravel inclusions and flecks of charcoal

[2280] cut circular in plan 0.35m x 0.31m wide and 0.03m deep with sloping concave sides with gradual break of slope and flat base

**F.1281** was a posthole that was probably associated with structure F.1278 and F.1279. The fill consisted of;

[2284] firm mid grey/black clayey silt with rare gravel inclusions and flecks of charcoal

[2285] cut sub-oval in plan 0.38m x 0.16m wide and 0.07m deep with gradual concave sides and concave base

**F.1282** was a shallow pit that was truncated by linear F.1264, both features silted simultaneously. The fills consisted of;

[2287] firm mid brown/grey silty clay with occasional gravel inclusions and frequent flecks of charcoal

[2288] mixed re-deposited natural with firm pale brown/grey silty clay and pale orange/grey silty clay with rare gravel inclusions

[2289] lenses of mid grey gravels with silty clay matrix and pale grey/white silty sand and pale orange/white silty sand with frequent gravel inclusions

[2290] cut sub-circular in plan 0.00m x 0.85m wide and 0.48m deep with steep straight sides with convex step on the western side with sharp break of slope and concave base

**F.1283** was a pit that contained a rich assemblage of pottery and fired clay and briquetage and was one feature within a cluster of pits situated to the west of the saltern site and therefore contemporary. The fills consisted of;

[2304] soft black sandy silt with rare gravel inclusions and frequent flecks of charcoal

[2305] firm mottled black/grey/yellow sandy clay with rare gravel inclusions and flecks of charcoal

[2306] compact light yellow/grey clayey sand with rare gravel inclusions, iron pan and flecks of charcoal

[2308] cut oval in plan 1.38m x 2.14m wide and 0.60m wide with steep concave sides with moderate break of slope and flat base

**F.1284** was a posthole that was in the vicinity of other postholes (F.1285 and F.1286). The fill consisted of;

[2309] mottled soft brown/grey sandy silt with lenses of orange sand with frequent gravel inclusions and flecks of charcoal

[2310] cut circular in plan 0.48m x 0.43m wide and 0.09m deep with gentle concave sides and concave base

**F.1285** was a posthole that was in the vicinity of other postholes (F.1284, F.1286 and F.1287). The fill consisted of;

[2311] firm brown/grey clayey sandy silt with lenses of orange sand with occasional gravel inclusions and flecks of charcoal

[2312] cut circular in plan 0.47m x 0.58m wide and 0.17m deep with gentle sloping sides with gentle break of slope and flat base

**F.1286** was a posthole that was in the vicinity of other postholes (F.1284 and F.1285). The fill consisted of;

[2313] soft grey/brown clayey silt with occasional gravel inclusions and flecks of charcoal

[2329] firm brown/grey clayey sandy silt with occasional gravel inclusions and flecks of charcoal

[2330] friable red/brown silty sand with occasional flecks of charcoal

[2314] cut circular in plan 0.42m x 0.45m wide and 0.18m deep with gentle concave sides and concave base

**F.1287** was a posthole with a postpipe evident and was in the vicinity of other postholes (F.1284, F.1285 and F.1286). The fills consisted of;

[2315] soft to firm dark brown/grey sandy silt with occasional gravel inclusions

[2331] firm light brown/grey sandy silt with sandy lenses with frequent gravel inclusions and flecks of charcoal

[2316] cut oval in plan 0.63m x 0.75m wide and 0.18m deep with sloping concave sides with moderate break of slope and flat base

**F.1288** was a shallow pit that forms part of a cluster of pits and truncated the earlier pits F.1289 and F.1290. The fill consisted of;

[2317] firm dark grey/black clayey silt with rare gravel inclusions and flecks of charcoal

[2318] cut circular in plan 1.13m x 1.14m wide and 0.13m deep with sloping to moderate concave sides with moderate break of slope and flat base

**F.1289** was a pit that cuts F.1290 and was truncated by F.1288 and formed part of the cluster of pits associated with the saltern site. The fill consisted of;

[2319] firm mid grey/black clayey silt with rare gravel inclusions and flecks of charcoal

[2320] cut circular in plan 1.46m x 1.07m wide and 0.11m deep with gentle concave sides and flat base

**F.1290** was an oval shaped pit that was cut by F.1288 and F.1289. The fill consisted of;

[2321] firm light yellow/grey silty clay with rare gravel inclusions and flecks of charcoal

[2322] cut elongated oval in plan 1.48m in length and 0.59m wide and 0.14m deep with gradual concave side and concave base

**F.1292** was a small possible stakehole that was associated with F.1293 and F.1306. Possibly a three-post structure. The fill consisted of;

[2323] firm light brown/grey sandy silt with gravel inclusions and flecks of charcoal  
[2324] cut circular in plan 0.17 x 0.16m wide and 0.07m deep with moderately steep sides and concave base

**F.1293** was a small stakehole that was possibly associated with F.1292 and F.1306 which were also stakeholes. Possibly a three-post structure. The fill consisted of;

[2325] loose light brown/grey sandy silt with gravel inclusions and flecks of charcoal  
[2326] cut circular in plan 0.12m x 0.13m wide and 0.07m deep with steep straight to concave sides and sharp concave base

**F.1306** was a stakehole that was associated with F.1293 and F.1292 which were also stakeholes. Possibly a three-post structure. The fill consisted of;

[2327] firm light brown/grey sandy silt with occasional gravel inclusions and flecks of charcoal  
[2328] cut circular in plan 0.25m x 0.22m wide and 0.05m deep with sloping concave sides and concave base

**F.1295** was a large shallow pit which had a familiar fill to F.1296 which could represent that they were both opened and backfilled simultaneously. The fill consisted of;

[2341] moist mid grey silty clay with occasional gravel inclusions  
[2342] cut circular in plan 1.42m x 1.39m wide and 0.23m deep with moderately steep concave sides and flat to concave base

**F.1296** was a small circular pit that contained no dateable artefacts and appears to be connected with two larger pits and a pit/well. The fill consisted of;

[2339] moist mid grey silty clay with occasional flecks of charcoal  
[2340] cut circular in plan 0.46m x 0.46m wide and 0.12m deep with moderately steep concave sides and concave base

**F.1297** was a circular pit that cut shallow pit F.1289 that formed part of a cluster of pits to the west of the saltern site and was probably related to those features. The fills consisted of;

[2332] firm dark grey/black clayey silt with rare gravel inclusions and flecks of charcoal  
[2333] firm light blue/grey silty clay with rare gravel inclusions and flecks of charcoal  
[2334] firm dark grey/black clayey silt with rare gravel inclusions and flecks of charcoal  
[2337] cut circular in plan 1.07m x 1.36m wide and 0.26m deep with vertical to moderate concave sides with moderate break of slope and flat base

**F.1298** was a pit with fills that represented the gradual silting that contained fragments of Iron Age briquetage; primarily trough sherds in the upper layer [2351]. The fills consisted of;

[2351] mid brown/grey sandy silt with gravel inclusions  
[2352] dark brown/grey sandy silt  
[2353] light grey clayey silt with patches of orange gravel and pieces of chalk  
[2354] dark brown/grey sandy silt with patches of orange gravel and pieces of chalk  
[2355] mixed layer of brown/grey sandy silt and orange gravel and yellow sand  
[2356] mid grey/brown sandy silt with frequent gravel inclusions  
[2357] mid grey/brown sandy silt with frequent gravel inclusions  
[2338] cut sub-circular in plan 2.74m x 2.88m wide and 0.78m deep with moderately steep concave and convex sides with moderate break of slope and concave to flat base

**F.1299** was a pit with heavily re-deposited gravel and iron pan layers that was situated between the saltern site and pit cluster but was probably dated to the Bronze Age. The fills consisted of;

[2358] soft mid blue/grey silty clay with rare gravel inclusions and frequent flacks of charcoal

[2359] soft light blue/grey sandy clay with rare gravel inclusions and flecks of charcoal  
[2360] firm light orange/grey clayey sand with rare gravel inclusions  
[2361] firm light orange/grey clayey sand with rare gravel inclusions  
[2362] compact dark orange clayey sand with frequent gravel inclusions and iron pan  
[2363] firm dark brown/orange clayey sand with occasional gravel inclusions and flecks of charcoal  
[2364] cut circular in plan 1.88m x 1.61m wide and 0.65m deep with steep concave sides with moderate break of slope and flat base

**F.1300** was an isolated posthole. The fill consisted of;

[2365] firm dark brown/grey clayey sandy silt with frequent gravel inclusions with occasional flecks of charcoal  
[2366] cut circular in plan 0.28m x 0.28m wide and 0.26m deep with near vertical straight sides with moderate concave base

**F.1301** was a sub-circular posthole. The fill consisted of;

[2367] dark brown/grey sandy silt with occasional gravel inclusions  
[2368] cut sub-circular in plan 0.33m x 0.41m wide and 0.12m deep with gradual concave sides and concave base

**F.1302** was an isolated pit. The fill consisted of;

[2369] dark brown/grey sandy silt with occasional gravel inclusions  
[2370] cut sun-oval in plan 0.61m x 1.07m wide and 0.26m deep with moderately sloping concave sides with moderate break of slope and convex base

**F.1303** was an isolated pit. The fill consisted of;

[2371] dark brown/grey sandy silt with occasional gravel inclusions  
[2372] light grey sandy silt with occasional gravel inclusions  
[2373] cut sub-oval in plan 0.53m x 1.02m wide and 0.37m deep with moderately concave sides and concave base

**F.1305** was an isolated posthole. The fill consisted of;

[2392] soft dark blue/grey clayey silt with rare gravel inclusions and flecks of charcoal  
[2393] soft light blue/yellow silty clay with occasional gravel inclusions  
[2394] cut oval in plan 0.63m x 0.36m wide and 0.09m deep with sloping concave sides and concave base

## ***Structures***

**F.1250** was a posthole that forms part of a possible three-post structure that was adjacent to the northeast from Structure V and associated with F.1251 and F.1252. The fills consisted of;

[2082] firm mid grey silty clay with occasional gravel inclusions flecks of charcoal and fired clay  
[2083] re-deposited mixed orange clayish silt with gravel  
[2084] cut oval in plan 0.45m x 0.35m wide and 0.09m deep with sloping to moderate concave sides and concave base

**F1251** was a posthole that forms part of a possible three-post structure that was adjacent to the northeast from Structure V and associated with F.1250 and F.1252. The fills consisted of;



[2085] firm dark grey silty clay with occasional gravel inclusions and moderate flecks of charcoal and fired clay  
[2086] re-deposited natural orange clayish silt mixed with gravel  
[2087] cut sub-circular in plan 0.44m x 0.38m wide and 0.09m deep with moderate concave sides and concave base

**F.1252** was a posthole that forms part of a possible three-post structure that was adjacent to the northeast from Structure V and associated with F.1250 and F.1251. The fills consisted of;

[2088] firm mid grey silty clay with occasional gravel inclusions flecks of charcoal and fire clay  
[2089] re-deposited orange clayish silt mixed with gravel  
[2090] cut oval in plan 0.50m x 0.34m wide and 0.09m deep with sloping concave sides and concave base

### *Structure V*

A series of eight postholes formed a rough horseshoe shaped structure with the 'open' end to the north.

**F.1256** [2177] loose and moist dark grey/black silty clay with moderate charcoal inclusions  
[2178] cut sub-circular in plan 0.32m x 0.28m wide and 0.10m deep with moderate concave sides and concave base

**F.1257** [2179] loose light grey and black with orange mottling silty clay with occasional flecks of charcoal  
[2180] cut sub-circular in plan 0.44m x 0.35m wide and 0.24m deep with steep straight and slightly convex sides with sharp break of slope and flat base

**F.1258** [2181] loose and moist mid grey and black silty clay with occasional flecks of charcoal  
[2182] cut sub-circular in plan 0.46m x 0.38m wide and 0.12m deep with moderately steep concave and concave sides and sharp concave base

**F.1259** [2183] loose moist mid grey/black silty clay with frequent flecks of charcoal  
[2184] cut sub-circular in plan 0.32m x 0.25m wide ad 0.20m deep with straight vertical sides with slight undercutting to the west side with sharp break of slope and flat base

**F.1260** [2185] loose moist mid grey/black silty clay with moderate flecks of charcoal  
[2186] cut sub-circular in plan 0.34m x 0.30m wide and 0.19m deep with straight vertical sides with moderately sharp break of slope and uneven/flat base

**F.1261** [2187] loose moist light grey and black silty clay with occasional flecks of charcoal  
[2188] cut sub-circular in plan 0.31m x 0.29m wide and 0.21m deep with straight vertical sides and sharp break of slope and flat base

**F.1262** [2189] loose moist light grey and black silty clay with occasional flecks of charcoal  
[2190] cut circular in plan 0.30m x 0.30m wide and 0.24m deep with vertical straight sides with sharp break of slope and flat base

**F.1263** [2191] loose moist mid grey/black silty clay with frequent flecks of charcoal  
[2192] cut sub-circular in plan 0.33m x 0.29m wide and 0.16m deep with moderate concave sides and concave base

**F.1272** was a gully on a northwest-southeast orientation that formed part of a saltern structure in the area previous excavated in 1994 to recover an environmental sample of artefact recovery. The fill consisted of;

[2264] firm light blue/grey clayey silt with occasional gravel inclusions and flecks of charcoal

[2265] cut 0.70m in length, 0.39m wide and 0.06m deep with shallow concave sides and flat base

**F.1278** was a curved linear that formed part of a structure associated with a structure excavated in 1994. This was probably a drip gully circling a structure and contained pottery and briquetage. The fills consisted of;

[2273] firm light blue/grey silty clay with rare gravel inclusions and flecks of charcoal

[2274] cut of southern terminal round in plan 0.00m in length and 0.17m wide and 0.10m deep with steep concave sides with concave base

[2275] firm light blue/grey silty clay with rare gravel inclusions and flecks of charcoal

[2276] cut 0.00m in length and 0.19m wide and 0.07m deep with gradual sloping concave sides and concave base

[2277] firm light blue/grey silty clay with rare gravel inclusions and flecks of charcoal

[2278] cut of northern terminal 0.00m in length and 0.17m wide and 0.06m deep with gradual sloping concave sides and concave base

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