on behalf of
Mr Brian Cowie

Land east of Milbank Close
Hart
Hartlepool

archaeological evaluation

report 3851
July 2015
1. **Summary**

1.1 This report presents the results of an archaeological evaluation conducted in advance of a proposed residential development at land east of Milbank Close, Hart, Hartlepool. The works comprised the excavation of six evaluation trenches.

1.2 The works were commissioned by Mr Brian Cowie and conducted by Archaeological Services Durham University.

1.3 In the southern area of the site a series of ditches and gullies were identified in trenches 1, 2 and 5. The faunal assemblage and the data from the palaeoenvironmental assessment, in particular the presence of charred seaweed and cereal grains, indicate that the features are likely to date from the early medieval period and are indicative of settlement of this period in the very near vicinity.

1.4 A total of five non-adult inhumations were identified in Trench 3. Several of the graves were co-mingled with the remains of further individuals, and additional charnel was recovered from the spoil associated with the trench. Iron nails within the grave fills indicate that some of the individuals were buried in coffins, or boxes repurposed as coffins. The east/west orientations of one grave, the lack of recovered artefacts, and the presence of quartz pebbles within the grave fills are indicative of an early-medieval date. It is probable that further graves and inhumations are located in the north-eastern area of the site, to the south of the large ditch identified in Trench 6.

1.5 The large ditch in Trench 6 may either be a large cut drainage feature or natural watercourse that has been diverted in antiquity to the present course of the stream that bounds the northern edge of the development area. The palaeoenvironmental data recovered from the basal deposits indicate that feature was permanently waterlogged resulting in marsh-like conditions. These conditions have resulted in the anoxic preservation of faunal and palaeoenvironmental remains of probable early-medieval date. Of particular interest is the identification of hemp seeds within the samples likely to be indicative of retting, the processing of the hemp fibres, prior to the feature being backfilled and sealed with clay.

1.6 The proposed development has the potential to impact on a significant archaeological resource. A programme of archaeological excavation in advance of development is recommended in order to mitigate this impact.
2. **Project background**
   
   **Location** (Figure 1)
   
   2.1 The site is located on land to the east of Milbank Close, Hart, Hartlepool (NGR centre: NZ 47352 35030). The development site is rectangular in plan, and covers an area of approximately 0.85ha. A housing estate is located to the west of the site, whilst to the north and east is agricultural land. To south is the former Front Street, with the A179 road beyond.

   **Development proposal**
   
   2.2 The proposal is for the construction of residential properties, with associated services and an access road.

   **Objective**
   
   2.3 The objective of the scheme of works was to assess the nature, extent and potential significance of any archaeological resource within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in relation to the development.

   **Specification**
   
   2.4 The works have been undertaken in accordance with a Written Scheme of Investigation provided by Archaeological Services Durham University (reference DS15.272) and approved by the planning authority.

   **Dates**
   
   2.5 Fieldwork was undertaken between 30th June and 3rd July 2015. This report was prepared for July 2015.

   **Personnel**
   
   2.6 Fieldwork was conducted by Beverley Still and Benjamin Westwood (supervisor). This report was prepared by Benjamin Westwood, with illustrations by David Graham. Specialist reporting was conducted by Louisa Gidney (animal bone), Jennifer Jones (artefacts), Dr Anwen Caffell (human remains), and Lorne Elliott (palaeoenvironmental). Sample processing was undertaken by Dr Magdolna Szilágyi and Beverley Still. The Project Manager was Daniel Still.

   **Archive/OASIS**
   
   2.7 The site code is **HMC15**, for Hart Millbank Close 2015. The archive is currently held by Archaeological Services Durham University and will be transferred to Tees Archaeology in due course. Archaeological Services Durham University is registered with the **Online AccessS** to the Index of archaeological investigationS project (**OASIS**). The OASIS ID number for this project is **archaeol3-218100**.

3. **Landuse, topography and geology**

   3.1 At the time of the archaeological works, the development area comprised a single field of rough grassland with vegetation along the northern boundary and occasional mature trees.
3.2 The proposed development area was undulating, sloping very gently down to a stream at the northern edge, with a mean elevation of approximately 66m OD. No earthworks could be discerned.

3.3 The underlying solid geology of the area comprises Roker Formation (dolostone) sedimentary rocks, which are overlain by Devensian glaciolacustrine and glaciofluvial deposits and alluvium (ww.bgs.ac.uk).

4. Historical and archaeological background

4.1 Prior to this phase of works an archaeological desk-based assessment was undertaken in conjunction with a geophysical survey of the development area (Archaeological Services 2015). No previous archaeological works have been identified within the development area. Building work at several properties in the historic core of the village has been subject to archaeological monitoring. Archaeological investigations at Burn’s Close (Historic Environment Record - HERs 964 & 992), on the western edge of the village, identified remains of wooden structures and boundary features (Archaeological Services 1995 & 1996). The presence of flint artefacts and the absence of medieval pottery indicated a prehistoric or Anglo-Saxon date for these features. Geophysical survey of Kirkfield (Archaeological Services 2012), to the south of the proposed development area, identified ditches and evidence of ploughing, land drains and recent services (HERs 889 & 890). Geophysical surveys have also been conducted around St Mary Magdalene Church in the village (Archaeological Services 2014); the majority of anomalies detected there corresponded to known or recent features within and around the churchyard.

4.2 Mesolithic flint tools have been found near Crimdon Dene, along the coast to the north (Durham HERs 116, 117 & 118). Flint tools have also been found in the fields to the west and south of Hart (HERs 1682-85 & 2868) and in the field immediately to the east of the proposed development site (HER 1686). A Neolithic axe (HER 5533) was found in fields to the north-east of Hart. Bronze Age pottery (HER 1486) was found during excavations to the north-west of the site, together with later remains.

4.3 An Iron Age beehive quern (HER 680) has been built into the wall of White Cottage and may indicate Iron Age occupation in the area. A further indication of late prehistoric settlement in the wider area has come from the analysis of peat deposits at Thorpe Bulmer (HER 676). This site located some 2km to the north-west of Hart, contained cultivated hemp seeds from pre-Roman layers.

4.4 Aerial photographs of the area around Hart are indicative of sites of possible prehistoric date. A large circular feature (ring-ditch) has been recorded near Hart Bypass (HER 1086), and at Elwick, to the south-west, a sub-rectangular earthwork was noted. Similar rectangular cropmarks have also been recorded at Whelly Hill (HERs 863 & 3283), to the south-west of Hart.

4.5 There is no direct evidence of prehistoric activity in the proposed development area. However, there is evidence that the surrounding area was exploited in prehistory. A
resource relating to this exploitation may therefore survive within the proposed development site.

**The Roman period** (AD 70 to 5th century)

4.6 There is no evidence of Roman activity in the vicinity of Hart but there is evidence that native settlement in the area continued into the Roman period. A Romano-British brooch (HER 5246) was found to the east of Hart and settlements were found during excavations at Catcote, on the western edge of Hartlepool, and at Greatham Creek, just over 7km to the south. A couple of Romano-British burials were found at Lancaster Road, Hartlepool, and a Roman coin has also been recorded in the town.

**The medieval period** (5th century to 1540)

4.7 Hart was the administrative centre of a large estate extending from Castle Eden Dene in the north to the River Tees in the south (HER 666). The estate probably belonged to the Northumbrian royal family and in the mid-7th century part of it was used to establish the Anglo-Saxon monastery of Hilde at Heruteu (Daniels 2012). The first reference to Hart occurred in a charter of AD 830-845 that refers to ‘Heorternesse’ – a name derived from heorot (Old English for hart, i.e. a deer) and gehernes meaning an administrative area. The name of nearby Hartlepool was given to the town developing around the harbour that served Hart, thus indicating the significance of Hart in the early medieval period.

4.8 Secondary settlements grew up around Hart manor (HER 668) including Nelson (HER 672), North Hart, High and Low Throston, Naisberry, Tunstall and Thorpe Bulmer (HER 675). The development site is within an area of fields recorded as Kirkfield, suggesting that it was close to either the location of an early church or was land owned by the church. Fragments of three badly damaged Anglo-Saxon brooches (HERs 6211) have been found in fields immediately to the east of the development area. Two silver coins (one of mid-8th-century (HER 6997) and one of mid-9th-century date (HER 6998)) and a pin of 7-11th-century date have also been found in the same area, together with a medieval strap end (HER 6519), brooch (HER 6973), pin (HER 6999) and architectural fragments (HER 6995). A 10th-century crosshead (HER 3479) was found in Kirkfield, to the south of the development area, together with medieval pottery (HER 1777).

4.9 St Mary Magdalene Church (HER 667) is believed to date back to the late 7th century and contains fragments of Anglo-Saxon sculpture (HER 1265) together with early medieval grave slabs (HERs 4464 & 4465). Other fragments have also been found nearby (HER 2846). The de Brus Wall (HER 960), so named because the de Brus (or Bruce) family occupied the estate in the early 12th century (Page 1928a), and the wall to the west of the church (HER 6439), also date to the early medieval period. Saxon remains have also been found in excavations to the west of the village (HER 992).

4.10 To the north of the church are two medieval fish ponds (HER 677, SAM 32745) and an earthwork (HER 4678) that was part of the manorial complex (HER 668, SAM 32743). The churchyard (HER 4462), grave slab (HER 4463) and a cross fragment (HER 1499) show continued use of the church throughout the medieval period.

4.11 A medieval lime kiln has been identified in the village (HER 1483). Other medieval remains found in the vicinity include a coin (HER 1224), a ring (HER 1484) and a
spindle whorl (HER 1475). A number of other finds and features of similar date have been found in fields around Hart.

4.12 From the 14th century the land at Hart was held by the Clifford family. Fields around the village formed part of the medieval agricultural system of common fields (HERs 978, 979, 1053, 1534, 3411 & 3629) and it is likely that the development area was part of a larger open field to the east of the village. A medieval earthwork (HER 1487) was noted to the west of the development site and excavations revealed medieval remains (HER 1485). A windmill was recorded at Hart in 1314 (Page 1928b) but the present mill (HER 623) dates from the 19th century.

**The post-medieval period (1541 to 1899)**

4.13 Saxton’s map of County Durham in 1576 shows the church at ‘Harte’ and the much larger settlement of Hartlepool on the coast to the east. The smithy (HER 684) in Hart and Home Farm (HER 4961) date from the 17th century when the village was no longer such a significant settlement. A 17th-century sword (HER 683) has been found to the west of the village. The population would have been engaged in agriculture and the development site was probably pasture or agricultural land at this time. On the alarm of a Dutch invasion in 1666 a beacon (HER 678) was erected on the hill to the south of Hart (Page 1928b).

4.14 Armstrong’s map of County Durham in 1768 shows the topography of the area with the village of Hart stretching along the road leading to Hartlepool and around the junction with the road leading south to Dalton Piercy.

4.15 A plan of the manor of Harte, drawn up in 1770, shows the proposed development site within an area to be sold as Lot 4, when the manor was broken up. It formed part of a piece of land of 5 acres and 2 rods marked Garth, to the east of the medieval village. To the east of the beck were Fenns [sic] and to the north New Closes. A number of properties in and around Hart date to the 18th century (HERs 4954, 4962, 5196, 5213, 6441, 6442, 6443 and 8134) and indicate that it continued to be a thriving settlement.

4.16 By the early 19th century the settlement had grown. Greenwood’s map of County Durham in 1820 shows the village clustered around the crossroads with the church to the north of the beck. Many of the houses in the village date from the 19th century. This map also shows the windmill (HER 623) on a hill to the south of the village. The development site appears to be agricultural land at this date. Increasing industrialisation in the surrounding area included mineral extraction with limestone quarries, sand, gravel and clay pits (HERs 4503, 4504, 804, 4502 & 4594). In 1832 a mineral railway was constructed which passed through the parish of Hart, to the north-east of the village, leading from mines in the north to Hartlepool on the coast.

4.17 The Tithe plan of Hart in 1841 shows the development site as part of Brewery Farm land (HER 8261) which was farmed by Robert and William Stephenson. There was little development within the village in the later part of the 19th century and the 1st and 2nd edition Ordnance Survey (OS) maps of Hart show a similar layout of houses along the road with the development site remaining as agricultural land.
The modern period (1900 to present)

4.18 The village of Hart and the surrounding area remained largely unchanged through the first half of the 20th century, although Hartlepool was expanding rapidly at this time. During the latter part of the century a number of housing estates were built in and around the historic core of Hart (Horsley 2009). The proposed development was pasture during the late 20th century and into the early 21st century.

5. The evaluation trenches

Introduction

5.1 Six evaluation trenches were excavated across the area of the proposed development (Figure 2), positioned in order to provide a sample of the site, and to target anomalies identified during the geophysical survey. The trenches were 1.6m wide and were sealed by grey-brown sandy-silt topsoil [1: up to 0.5m thick].

Trench 1 (Figures 3 and 5)

5.2 Trench 1 was 10m long and up to 0.7m deep. Natural subsoil, a yellow-brown clay [3], was identified at a depth of 0.6m, and was cut by a north-east/south-west orientated ditch [F6: 1.2m wide, 0.35m deep]. This shallow, flat-based ditch was filled by dark brown clayey-silt [5] from which cattle, pig, goose and fish bones were recovered. Palaeoenvironmental analysis of the samples taken from this deposit yielded fragments of charred seaweed and cereal grains. A gully [F14: 0.5m wide, 0.3m deep] was identified, located 1.5m to the south-east of the ditch. Extending across the trench from the north-west, the gully curved slightly toward the south-east, and was filled by a deposit of dark brown clayey-silt [13]. Faunal remains from this fill included cattle, sheep/goat, pig and fish bones, whilst bread wheat, oat and two pieces of undiagnostic worked flint were recovered from the palaeoenvironmental samples. Both features were overlain by a layer of grey-brown clayey-silt subsoil [2: 0.3m thick].

Trench 2 (Figure 3)

5.3 Trench 2 was 10m long and up to 1.2m deep. Natural subsoil, a grey-brown sandy-clay [3], was identified at a depth of between 0.8m and 1.1m, and was cut by a north/south orientated gully [F11: 0.1m wide, 0.15m deep] (Figure 6). The steep sided and flat based gully was filled by a deposit of dark grey clay-silt [12], palaeoenvironmental analysis of which yielded charred cereal grains and fragments of seaweed. The gully was sealed by a layer of grey-brown clayey-silt subsoil [2: up to 0.7m thick], which extended throughout the trench.

Trench 3 (Figure 3)

5.4 Trench 3 was 10m long and up to 0.6m deep. Natural subsoil, a brown sandy-clay and gravel [3], was identified at a depth of 0.4m. Due to the identification of human remains the trench was extended to the east by 3m. An east/west orientated grave [F27: 1.15m+ long, 0.6m wide and 0.2m+ deep] was located at the eastern end of the trench and contained a partial non-adult skeleton [SK2], and the partial co-mingled remains of at least one additional individual (Figure 7). The grave was filled by a deposit of brown sandy-silt [21] from which small amounts of cattle and sheep/goat bones, and two small hand wrought iron nails, were recovered. With the exception of the fragmentary remains of the skull, disturbed during excavation of the trench, [SK2] was left in situ and not excavated.
5.5 Toward the centre of the trench, a linear feature was identified [F17: 2.1m wide]. It was filled by a deposit of grey-brown sandy-silt [18] within which a discrete deposit of disarticulated non-adult human remains [SK5] was identified. The centre of the feature [F17] was cut by a circular grave [F19: 0.45m diameter, 0.1m deep] containing non-adult skeletal upper-body remains [SK1]. The grave was filled by a deposit of dark-brown sandy-silt [20] from which two small white quartz pebbles were recovered. The western edge of feature [F17] was cut by two further graves (Figure 8): [F25: 0.45m diameter, 0.1m deep] contained the upper-body and part of the pelvis/legs of a non-adult skeleton [SK4]; [F23: 0.55m diameter, 0.1m deep] contained the upper-body and part of the pelvis/legs of a non-adult skeleton [SK3], and the co-mingled skeletal remains of at least one further individual. These two graves were filled by deposits of dark-brown sandy-silt and pea gravel [26; 24], from which small amounts of cattle and sheep/goat bones, fish bones, and several incomplete iron nails and nail fragments were recovered. In addition, three small white quartz pebbles were identified within the fill [26]. Palaeoenvironmental analysis of the fills from the graves cut over feature [F17] yielded an abundance of charred cereal grains, in particular bread wheat grains.

5.6 All of the grave fills within the trench were overlain by a deposit of grey-brown sandy silt subsoil [28: 0.2m thick]. A total of 50 unstratified human bones were recovered from the spoil heap following the removal of this subsoil during the excavation of the trench. Accordingly, this spoil was designated as deposit [28]. Whilst many of these human remains probably originated from the shallow graves detailed above, it is likely that the remains of further individuals are represented.

Trench 4 (Figure 4)

5.7 Trench 4 was 10m long and up to 0.45m deep. Natural subsoil, a sandy limestone gravel [3], was identified at a depth of between 0.3m and 0.45m overlain by grey-brown clayey-silt subsoil [2: 0.2m thick] which extended throughout the trench. No archaeological features were identified and no artefacts recovered.

Trench 5 (Figure 4)

5.8 Trench 5 was 10m long and up to 0.6m deep. Natural subsoil, a sandy limestone gravel [3], was identified at a depth of between 0.3m and 0.45m, cut by a north/south orientated ditch [F15: 0.8m wide, 0.4m deep] (Figure 9). The ditch was filled by a deposit of dark brown-grey clay-silt [16] containing large chalk and smaller limestone pebbles, and from which cereal grains and fragments of animal bone were recovered. The ditch fill [16] was overlain by a deposit of grey-brown sandy silt subsoil [28: 0.2m thick] which extended throughout the trench.

Trench 6 (Figure 4)

5.9 Trench 6 was 16m long and 1.6m deep. Natural subsoil, varying from sandy limestone gravel to clayey-sand [3], was identified at a depth of between 0.3m and 0.45m, cut by a very large east/west orientated ditch or trench [F4: 12m+ wide, 1.3m+ deep] which extended beyond the northern edge of the trench (Figure 10). The lowest fill encountered within this feature was a deposit of very dark grey sandy-silt [7: 1m+ thick]. The waterlogged nature of this deposit has resulted in the anoxic preservation of many faunal remains, including cattle, horse and pig bones. In addition palaeoenvironmental analysis of the deposit yielded an abundance of common nettle achenes, whilst species such as crowfoots, sedges, hemp, hemlock, docks, fool’s parsley, hazel nutshells, and fruitstones of elderberry and bramble
were well represented, as were many cultivated cereal grains (oat, barley and bread wheat). This basal deposit was overlain to the south by a deposit of dark grey-brown clay-silt [9: 9m long, 0.5m thick], and to the north by a deposit of greenish-grey silty-sand [8: 2m+ long, 0.3m thick]. Sealing the northern part of the ditch [F4] was a deposit of brown silty clay [10: 4.5m+ long, 0.5m thick], which extended beyond the northern edge of the trench.

6. The artefacts

Pottery assessment

Results

6.1 A single, wheel-thrown base sherd (40g wt) was found in topsoil context [1]. The orange/pink fabric has a reduced core and sand temper, and there are traces of splash glazing on the outside wall and base. This is medieval. A further minute flake of oxidised pot with external sooting was found in sample <7> from context [24], the grave fill of Sk3. This is too small to be dateable.

Recommendation

6.2 No further work is recommended.

Human remains assessment

Material

6.3 Four articulated skeletons were identified during excavation (Skeletons 1-4). One of these (Skeleton 2) was only partially recovered, with the rest of the skeleton photographed and remaining in situ. Assessment indicated that the remains of at least one other individual were co-mingled with Skeleton 2, and the appearance of the remains in the photograph suggested Skeleton 2 may have been partially disarticulated. The graves of Skeletons 1 and 3 were shallow, and consequently had been disturbed during the initial machining of the topsoil. Disarticulated unstratified human remains recovered from the spoilheap were thought during excavation most likely to derive from Skeletons 1 and/or 3. As with Skeleton 2, assessment indicated that the remains of at least one other individual were co-mingled with Skeleton 3. Therefore disarticulated human remains were present with Skeletons 2 and 3, and as unstratified material. Finally, human remains were recovered from context 18, the fill of a linear feature 17. These were not assigned a skeleton number during excavation, but assessment indicated they almost certainly represent the remains of a single individual. These remains have been referred to as ‘Skeleton 5’ in this assessment report. One small fragment of burnt bone was present with Skeleton 2, which was probably residual in the grave fill.

Methods

6.4 The articulated and disarticulated remains were assessed following English Heritage guidelines (Mays et al. 2002). The condition and preservation of the articulated skeletons was noted, providing an indication the surface preservation of the bones (following McKinley 2004), the amount of fragmentation, and completeness of the skeletons. The general age category of each skeleton was recorded (i.e. adult or non-adult), and the presence of obvious pathological conditions was noted. The potential to obtain information upon further analysis on age, sex, stature and pathological conditions was assessed.
For the disarticulated remains, a rough count was made of the number of fragments present. The surface preservation of the remains was noted, along with the amount of fragmentation. A general observation was made on the potential of the remains to provide more information on age or sex, or pathological conditions.

**Assessment of Condition: Articulated Skeletons**

6.6 All skeletons were incomplete (Appendix 1, Table 1.2). The two least complete skeletons were Skeletons 2 (skull) and 5 (legs). Skeleton 1 was 25-50% complete (upper body), while Skeletons 3 and 4 were 50-75% complete (upper body & part of pelvis/legs). Most of the skeletons had moderately fragmented bones, but the bones of Skeleton 1 had only minimal fragmentation while those of Skeleton 2 were severely fragmented. Surface preservation tended to be good/moderate to poor with consequent loss of surface detail. All five skeletons were non-adults, and obvious pathological conditions were observed in three of them.

**Assessment of Condition: Disarticulated Remains**

6.7 In total there were around 110 fragments of disarticulated bone, including ~50 unstratified bones from the spoil heap, ~50 bones with Skeleton 2, and ~10 bones with Skeleton 3. However, it was difficult to determine more precise quantities as the bone with Skeletons 2 and 3 was co-mingled with those skeletons and it was not immediately apparent which bones belonged to the identified skeletons and which were from additional individuals. Likewise with the bone from the spoil heap, it is likely that some of it (if not all of it) derives from the archaeologically identified inhumation burials. The surface preservation and level of fragmentation among the disarticulated bone was similar to that of the articulated skeletons. Evidence for pathological conditions (metabolic disease) was observed in the disarticulated bone.

6.8 It was not possible to determine whether the fragment of calcined bone with Skeleton 2 was human or animal.

**Potential and recommendations**

6.9 Articulated skeletons are usually capable of providing more useful data upon full analysis than are disarticulated remains. However, this potential will be compromised by poor preservation and small sample sizes. The small number of skeletons recovered from Hart, their incompleteness, and the tendency for the bones to be moderately fragmented with moderate preservation of surface detail will impact on the potential data that could be gained. Nevertheless, full analysis would still provide some useful data regarding the individuals buried at this site, which would be important in interpreting the funerary practices observed.

6.10 All five of the articulated skeletons were non-adults, and it should be possible to provide more precise age estimates for all of these individuals. However, it will not be possible to determine their sex or stature as their skeletons had not reached maturity. Concerning pathological conditions, it should be possible to record evidence for dental disease (which can inform on health, diet and oral hygiene) in at least one individual, and three skeletons had evidence for pathological conditions (most likely related to metabolic disease) which would merit detailed recording.

6.11 The co-mingling of multiple individuals with Skeletons 2 and 3 will need to be addressed. The bones belonging to the numbered skeletons will need to be identified, and an attempt should be made to determine whether any other discrete
individuals can be identified with confidence among the disarticulated remains. If so, these individuals would increase the sample size. Likewise, an attempt should be made to determine whether any of the remains recovered from the spoil heap can be returned to the skeletons to which they belong. However, it is inevitable that at least some of the remains will need to be recorded as disarticulated.

6.12 Disarticulated remains have more limited potential for further analysis, but data from the disarticulated remains can enhance that from the articulated burials and so they ought to be analysed in conjunction with the articulated burials. Data from analysis of the articulated and disarticulated remains would be used to calculate the minimum number of individuals represented by the remains, and both would contribute to an understanding of the demography of this sample. The single fragment of calcined bone present is likely to be residual and as such there is no value in conducting a full analysis of this material.

6.13 It is recommended that the skeletons and disarticulated remains are recorded according to current osteological standards (e.g. Buikstra and Ubelaker 1994; Cox and Mays 2000), and the data on the skeletal remains and funerary practices should be integrated. The date of the skeletons ought to be established, ideally by radiocarbon dating, in order to make appropriate comparisons, and to interpret the funerary practices observed.

**Animal bone assessment**

6.14 A small assemblage of faunal remains was recovered. Fragments of cattle, sheep/goat and pig bones were counted as identifiable if they encompassed a ‘zone’, or discrete diagnostic feature. The cattle-size category indicates a vertebra. Unidentifiable fragments were only noted if all fragments in one context were unidentifiable.

6.15 Animal bones were recovered from ditch and gully fills in Trenches 1, 3 and 5. Human remains are also present on the site. The basal fills of a large ditch contained water-logged deposits. Preservation of the faunal remains appears to be mixed, with well-preserved juvenile pig but poorly preserved cattle fragments in the same context. This suggests that soil conditions are favourable to the survival of bone, but that residual, weathered, fragments have been incorporated with freshly deposited fragments. Dog gnawing marks are clearly visible on some cattle bones, indicating a possible mechanism for burial of gnawed bones on site.

6.16 The species present in general contexts are detailed in Table 1.3. The majority of the faunal remains were recovered from contexts [5 and 13], ditch and gully fills in Trench 1. It can be seen that the majority of the identifiable fragments are cattle bones. Context [13] contains one highly fragmented cattle mandible, with the teeth at Grant (1982) wear stages P4 h, M1 m, M2 l, M3 l giving a mandible wear score of 49. This was clearly an aged animal at death. More pig than sheep/goat fragments were recovered, with evidence for juvenile pig. One element from a goose wing and a fish vertebra probably from a large gadid species indicate exploitation of resources other than the three principal farm livestock.
Some fragments of animal bone were recovered from grave fills and probably represent “background” debris in the soils cut though and backfilled for the graves. Table 1.4 shows that a very restricted range of species was encountered. The presence of domestic fowl but absence of goose, pig and fish bones may suggest that these few fragments do not derive from the same source as the finds in contexts [5 and 13].

Table 1.4: Fragment counts for the species present in grave fills

<table>
<thead>
<tr>
<th>Species</th>
<th>SK1</th>
<th>SK2</th>
<th>SK3</th>
<th>SK1/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheep/goat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic fowl</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indeterminate</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 1.5 shows that the samples for contexts [5 and 13] have proved disappointing for the recovery of bones from mammal or bird species, but have enhanced the representation of fish remains, with a further large gadid vertebra from context [13]. Bone from a much smaller fish species is present in context [26]. The only wild animal found is the vole species represented in context [24]. The grassland associated with a cemetery is a good habitat for voles.

Context [7] is outstanding in Table 1.5. This is the waterlogged basal fill of a ditch and the bones are in a very good state of preservation. There are clear dog gnawing marks on a cattle ulna and the horse humerus has been deliberately broken in antiquity. The pig bone is from a juvenile animal and the bird bone is a domestic fowl size vertebra.
Recommendation

6.20 Context [7] is the only context in which the standard of preservation and range of species present indicates that further work may be worthwhile. No further work is recommended on the remaining contexts.

Building materials assessment

Results

6.21 A small piece of fairly hard-fired brick or tile, c21 x 22mm, came from context [21], the grave fill of Sk2. It has no original faces or edges and cannot be easily dated, but is likely to be late medieval or later.

Recommendation

6.22 No further work is recommended.

Flint assessment

Summary

6.23 The lithic assemblage consists of three artefacts, two flakes [13] <4> and [5] <1> and a worked chunk [13]. They demonstrate the presence of prehistoric activity, but are not diagnostic, so cannot provide a more precise date.

Results

6.24 Two artefacts come from gully fill [13]. The first is a flint chunk, with two worked surfaces, manufactured on lightly patinated grey flint. Breaks are present on the proximal and right side (Dimensions: L=16.88mm, W=16.58mm, Th=12.00mm). The second [13] <4> is a flake on brown flint with black inclusions and banding. The butt is dihedral with evidence of preparation on the dorsal surface. The piece has a feather termination and five removals on the dorsal. There is slight use-wear/damage observed on the right ventral edge (Dimensions: L=20.69mm, W=19.61mm, Th=3.97mm). The final artefact comes from ditch fill [5] <1>. This is the distal end of a flake, knapped on a flint pebble, with a worn, natural dorsal surface (Dimensions: L=22.51mm, W=20.99mm, Th=10.41mm).

Discussion

6.25 Whilst the presence of the assemblage indicates that some form of prehistoric activity was conducted in the vicinity of the site, the forms present are undiagnostic, and cannot provide a more refined chronology.

Recommendation

6.26 No further work is recommended.

Iron objects assessment

Results

6.27 Twenty four fragments of iron were hand-recovered or came from the samples from grave fills or spoil heap/charnel layers. All were X-radiographed. Where identifiable, all but one of these are nail fragments.

6.28 A small nail from [21], the grave fill of Sk2, appears complete. It is hand wrought, square in section 5 x 5mm and 33mm long, with a sub-circular c10mm diam head. A further nail from this context also appears on the X-radiograph (XR) to be complete, c.34mm long, with its pointed end bent over where it was driven into the wood.
XR suggests there is mineralised wood present on the shank. Context [21] also has a small, complete screw with a slotted head, which is probably of post-medieval date.

6.29 Further nails/nail fragments were found in samples from contexts [24 and 26], the grave fills of Sk3 and Sk4. Most are fragmentary and incomplete, though two from [24] are quite small (9 & 15mm long) and thin and possibly complete. The longer of these also appears to have mineralised wood.

6.30 The single non-nail object came from [22], the spoil heap/charnel layer. It is moderately corroded and curved or bent, 77mm long, rectangular in section c11-13mm wide x c5mm thick. Both short ends are broken. There is no shaping or decoration on this object, and its date and function are uncertain.

Discussion

6.31 The presence of nails and nail fragments in the grave fills suggests that these are coffin nails, a notion supported by the presence of mineralised wood on the shanks. However, several of the nails – the complete example from [21] and the small nails from [24] - are too small for use in conventional coffin construction. They may come from smaller objects, such as boxes, which were re-purposed as coffins, or possibly from other wooden objects placed in the grave.

Recommendation

6.32 No further work is recommended.

Stone objects assessment

Results

6.33 Samples from the grave fills of Sk1 and Sk4 produced two and three small white quartz pebbles respectively. These are irregularly shaped but rounded, c.22-30mm in length and appear water-worn. The placement of white quartz pebbles of varying size has been recorded in burials and at grave sites from the Neolithic period onwards. In the early medieval period, quartz pebbles were sometimes used as grave markers, but have also been found in grave fills and may have been placed on the body (Tinti 2005, 139).

Recommendation

6.34 No further work is recommended.

7. Palaeoenvironmental assessment

Methods

7.1 A palaeoenvironmental assessment was carried out on nine bulk samples, taken from gully, ditch and grave fills of uncertain origin. The samples were manually floated and sieved through a 500μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, flint, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification using a Leica MZ7.5 stereomicroscope for waterlogged and charred botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classifications follow Preston et al. (2002).
7.2 Selected charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990) and Hather (2000), and modern reference material held in the Palaeoenvironmental Laboratory at Archaeological Services Durham University.

7.3 The works were undertaken in accordance with the palaeoenvironmental research aims and objectives outlined in the regional archaeological research framework and resource agendas (Petts & Gerrard 2006; Hall & Huntley 2007; Huntley 2010).

Results

7.4 All of the samples, including the grave fills, contained evidence of domestic waste and occupation of the site. The deposits comprised unburnt animal and fish bone, small fragments of indeterminate calcined bone, charcoal, coal, clinker/cinder and varying quantities of charred plant macrofossils. Other finds included tiny fragments of fired clay, marine shell (mussel) and iron nails. White rounded irregular shaped quartz pebbles noted in grave fills [20] and [24] were absent from other deposits.

7.5 Charred botanical remains included cereal remains (wheat, barley and oats), hazel nutshell fragments, heather twigs, rhizomes/tubers (including false oat-grass) and weed seeds of arable and grassy heathland. Small fragments of charred seaweed were recorded in deposits [5], [12], [13] and [16]. Identified charcoal from the samples comprised oak, ash, hazel and birch. The comparable nature of these assemblages may reflect a contemporary origin. Fragments of hazel and birch charcoal from several of the deposits contained evidence of insect degradation.

7.6 Well preserved faunal remains and abundant uncharred botanical remains present in fill [7] indicate anoxic preservation due to waterlogged conditions. This large assemblage of waterlogged plant macrofossils included arable, cultivated, ruderal and wetland taxa. Common nettle achenes were abundant, and other frequently recorded remains included crowfoots, sedges, hemp, hemlock, docks, fool’s parsley, hazel nutshells, and fruitstones of elderberry and bramble. A moderate number of charred cereal grains recovered from this ditch fill were in a very good state of preservation. Material suitable for radiocarbon dating is present for all of the samples. The results are presented in Appendix 1, Table 1.6.

Discussion

7.7 The small charred plant macrofossil assemblages suggest wheat, barley and oats were used at the site. Many of the wheat grains had the characteristic short and rounded shape of *Triticum aestivo-compactum* (bread wheat), although diagnostic chaff was absent. Bread wheat, oats and barley are common cereal crops from the early medieval period onwards in northern England (Hall & Huntley 2007). Many of the grains were pitted or degraded. This poor preservation is typical of hearth waste material, possibly reflecting intense heat and rapid combustion or exposure to repeated burning (Boardman & Jones 1990). Significantly, charred remains of brown seaweed were noted in several deposits, which is unusual considering the site is presently several kilometres from the coast. Charred seaweed has been recorded at many sites of early medieval origin in northern Britain and Ireland, including deposits from the Anglo-Saxon settlement at Shotton, Northumberland (Archaeological Services 2010).
7.8 Waterlogged conditions in ditch [F4] allowed for the preservation of a diverse range of plant remains. The only aquatic plant remains recorded were crowfoot achenes, which is a group that includes species that grow on both damp mud and in shallow water (Preston et al. 2002). The lack of obligate aquatic plants suggests damp marshy conditions in the ditch, rather than permanently standing water. Sedges and wetland herbs would have favoured these damp ground habitats. The ruderal weeds may reflect trampling of the ditch margins, with the abundance of common nettle possibly indicating nutrient-enrichment as a result of manure. Hemp seeds may be evidence for the local cultivation of this fibre crop, with the ditch possibly having been used for retting. The occurrence of small quantities of charcoal, charred cereals and animal bone indicates that some domestic waste was disposed of in this feature.

**Recommendations**

7.9 Anglo-Scandinavian occupation sites with waterlogged preservation are amongst a list of periods and site types most in need of further archaeobotanical investigation (Hall & Huntley 2007). Therefore, if artefactual evidence or radiocarbon dating confirms an early medieval origin for [F4], then palaeoenvironmental analysis comprising a detailed list of plant macrofossil remains, may be considered for fill [7]. Beetle analysis may also be appropriate for this deposit in order to examine the possibility of retting at the site. Further archaeological works may be considered for this feature, in order to check whether preservation was consistent or patchy and if possible to obtain additional palaeoenvironmental evidence (plant/invertebrate) or faunal remains.

7.10 No further palaeoenvironmental analysis is required for the remaining samples, but the preservation of charred plant remains and the presence of animal bone/teeth, indicates that other features that may be present on the site have the potential to provide further information about the exploitation of fuel resources, diet and crop husbandry practices, which could be supplemented by AMS radiocarbon dating. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

8. **The archaeological resource**

8.1 In the southern area of the site a series of ditches and gullies were identified in trenches 1, 2 and 5. The faunal assemblage and the data from the palaeoenvironmental assessment, in particular the presence of charred seaweed and cereal grains, indicate that the features are likely to date from the early medieval period and are indicative of settlement of this period in the vicinity.

8.2 A total of five non-adult inhumations were identified within Trench 3. Several of the graves were co-mingled with the remains of further individuals, and additional charnel was recovered from the spoil associated to the trench. The iron nails within the grave fills indicate that some of the individuals were buried in coffins, or within boxes repurposed as coffins. The east/west orientations of grave [F27; SK2], the lack of recovered artefacts, and the presence of quartz pebbles within the grave fills are indicative of an early-medieval date. It is highly likely that further graves and inhumations are located in the north-eastern area of the site, to the south of the large ditch identified in Trench 6. The post-medieval finds recovered from grave [F27] and the partial appearance of the skeletal remains of [SK2], are due to
disturbance from later agricultural activity, and demonstrate the relatively shallow nature of the features and graves within Trench 3.

8.3 The large ditch in Trench 6 may either represent a large cut drainage feature or natural watercourse that has been diverted in antiquity to the present course of the stream that bounds the northern edge of the development area. The palaeoenvironmental data recovered from the basal deposits indicate that feature was permanently waterlogged resulting in marsh-like conditions. These conditions have resulted in the anaerobic preservation of faunal and palaeoenvironmental remains of probable early-medieval date. Of particular interest is the identification of hemp seeds within the samples likely to be indicative of retting, the processing of the hemp fibres, prior to the feature being backfilled and sealed with clay.

8.4 The regional research framework (Petts & Gerrard 2006) contains an agenda for archaeological research in the region, which is incorporated into regional planning policy implementation with respect to archaeology. In this instance, the archaeological resource addresses a number of Early Medieval research agenda items, specifically items EMii. Settlement and EMvii. Death and burial. Developments in and around modern rural villages within the region have been highlighted for the high probability of surviving early-medieval occupation and settlements of the type identified during these excavations. Hall & Huntley (2007) have particularly highlighted Anglo-Scandinavian occupation sites with waterlogged preservation amongst a list of periods and site types most in need of further archaeobotanical investigation. The excavation of well-preserved skeletal assemblages of the type identified during these excavations, and the precise dating and analysis of such assemblages, has been stated as a key research aim for the region relating not only to issues of ethnicity and cultural identity, but also to wider debates on migration and population movement in the early medieval period (Petts & Gerrard 2006).

9. Impact assessment
9.1 Groundworks associated with the development are likely to remove or truncate significant archaeological deposits across the southern and northern parts of the site, and will disturb inhumations in the eastern part of the site.

10. Recommendations
10.1 A programme of archaeological excavation is recommended in order to mitigate the impact of the development on the archaeological resource.

11. Sources


Archaeological Services 2014 St Mary Magdalene Church, Hart Village, Teesside: geophysical survey. Unpublished report 3488, Archaeological Services Durham University


McKinley, J.L. 2004. ‘Compiling a skeletal inventory: disarticulated and co-mingled remains’, in M. Brickley and J.L. McKinley (eds) Guidelines to the Standards for Recording Human Remains. IFA Paper No. 7 (Southampton and Reading): 14-17


Schweingruber, F H, 1990 Microscopic wood anatomy. Birmensdorf


Tinti, F, 2005 Pastoral Care in Late Anglo-Saxon England, Woodbridge
## Appendix 1: Data tables

### Table 1.1: Context data

The • symbols in the columns at the right indicate the presence of artefacts of the following types: P pottery, B bone, M metals, F flint, C ceramic building material, O other materials.

<table>
<thead>
<tr>
<th>No</th>
<th>Area</th>
<th>Description</th>
<th>P</th>
<th>B</th>
<th>M</th>
<th>F</th>
<th>C</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All</td>
<td>Topsoil</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>All</td>
<td>Subsoil</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>All</td>
<td>Natural subsoil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tr 6</td>
<td>Large ditch</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Tr 1</td>
<td>Fill of ditch F6</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Tr 1</td>
<td>Ditch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Tr 6</td>
<td>Basal fill of ditch F4</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tr 6</td>
<td>Fill of F4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Tr 6</td>
<td>Fill of F4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Tr 6</td>
<td>Clay fill of F4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Tr 2</td>
<td>Gully</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Tr 2</td>
<td>Fill of F11</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Tr 1</td>
<td>Fill of F14</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Tr 1</td>
<td>Gully</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Tr 5</td>
<td>Ditch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>16</td>
<td>Tr 5</td>
<td>Fill of F15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>17</td>
<td>Tr 5</td>
<td>Linear feature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Tr 3</td>
<td>Fill of F17</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Tr 3</td>
<td>Grave cut SK1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Tr 3</td>
<td>Fill of F19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Tr 3</td>
<td>Fill of F27</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Tr 3</td>
<td>Number allocated to unratified finds from spoil heap</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Tr 3</td>
<td>Grave cut SK3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Tr 3</td>
<td>Fill of F24</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Tr 3</td>
<td>Grave cut SK4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Tr 3</td>
<td>Fill of F25</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Tr 3</td>
<td>Grave cut SK2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Tr 3</td>
<td>subsoil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
</tbody>
</table>
Table 1.2: Catalogue of articulated skeletons

<table>
<thead>
<tr>
<th>Skeleton</th>
<th>Condition*</th>
<th>Broad Age Group</th>
<th>Potential for:</th>
<th>Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>SP</td>
<td>F</td>
<td>Sex</td>
</tr>
<tr>
<td>1</td>
<td>25-50%</td>
<td>2/3</td>
<td>min</td>
<td>Non-adult</td>
</tr>
<tr>
<td>2</td>
<td>&lt;25%</td>
<td>2/3</td>
<td>sev</td>
<td>Non-adult</td>
</tr>
<tr>
<td>3</td>
<td>50-75%</td>
<td>4/5</td>
<td>Mod</td>
<td>Non-adult</td>
</tr>
<tr>
<td>4</td>
<td>50-75%</td>
<td>2/3</td>
<td>mod</td>
<td>Non-adult</td>
</tr>
<tr>
<td>5</td>
<td>&lt;25%</td>
<td>4/5</td>
<td>Mod</td>
<td>Non-adult</td>
</tr>
</tbody>
</table>

* C = Completeness; SP = Surface Preservation: 0/1 (excellent/very good), 2/3 (good/moderate), 4/5 (poor/very poor), adapted from McKinley (2004); F = Fragmentation: min (minimal), sli (slight), mod (moderate), sev (severe), ext (extreme)
Table 1.6: Data from palaeoenvironmental assessment

<table>
<thead>
<tr>
<th>Sample</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature number</td>
<td>6</td>
<td>4</td>
<td>11</td>
<td>14</td>
<td>15</td>
<td>19</td>
<td>23</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>Feature</td>
<td>Ditch</td>
<td>Ditch</td>
<td>Gully</td>
<td>Gully</td>
<td>Ditch</td>
<td>Grave</td>
<td>Grave</td>
<td>Grave</td>
<td>Grave</td>
</tr>
<tr>
<td>Material available for radiocarbon dating</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Volume processed (l)</td>
<td>100</td>
<td>500</td>
<td>130</td>
<td>100</td>
<td>150</td>
<td>250</td>
<td>200</td>
<td>50</td>
<td>500</td>
</tr>
<tr>
<td>Volume of flot (ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residue contents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone (calcined) indet. frags</td>
<td>-</td>
<td>(+)</td>
<td>(+)</td>
<td>-</td>
<td>(+)</td>
<td>(+)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bone (unburnt) animal</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bone (unburnt) fish</td>
<td>(+)</td>
<td>-</td>
<td>(+)</td>
<td>(+)</td>
<td>+</td>
<td>(+)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bone (unburnt) human</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flint (number of fragments) small frags</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fired clay / CBM magnetic</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Metal object / nails iron</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Quartz pebbles</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Shell (maritime) mussel</td>
<td>-</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tooth (animal - enamel fragment)</td>
<td>-</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tooth (human)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flat matrix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone (unburnt) indet. frags</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Charcoal</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Clinker / cinder</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Coal</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Heather twigs (charred)</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>(+)</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Insect / beetle</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Puparia</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rhizomes / tubers (charred)</td>
<td>+</td>
<td>-</td>
<td>++</td>
<td>(+)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Roots (modern)</td>
<td>++</td>
<td>-</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Seaweed fragments (charred)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vegetative material (uncharred)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vivianite</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wood</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Charred remains (total count)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Anthemis cotula (Stinking Chamomile) achene</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(c) Avena sp (Oat species) grain</td>
<td>-</td>
<td>&gt;20</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>(c) Cerealia indeterminate grain</td>
<td>5</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>&gt;10</td>
<td>-</td>
<td>&gt;10</td>
<td>1</td>
</tr>
<tr>
<td>(c) Hordeum sp (Barley species) hulled grain</td>
<td>2</td>
<td>&gt;40</td>
<td>2</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>(c) Hordeum sp (Barley species) rachis frag.</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(c) Triticum cf. aestivum (cf. Bread Wheat) grain</td>
<td>1</td>
<td>&gt;10</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>&gt;60</td>
<td>5</td>
<td>&gt;100</td>
<td>3</td>
</tr>
<tr>
<td>(g) Arrhenatherum elatius ssp bulbosum (False Oat-grass) tuber</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(h) Danthonia decumbens (Heath-grass) caryopsis</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t) Corylus avellana (Hazel) nutshell frag.</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(x) Rumex sp (Dock) nutlet</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Waterlogged remains (abundance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Aethusa cynapium (Fool’s Parsley) fruit</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(c) Cannabis sativa (Hemp) seed</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(q) Ranunculus subgenus Botrychium (Crowfoots) achene</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t) Urtica dioica (Common Nettle) achene</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t) Corylus avellana (Hazel) nutshell frag.</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t) Rubus fruticosus agg. (Bramble) frutstone</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(t) Sambucus nigra (Elder) frutstone</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(w) Carex sp (Sedges) biconvex nutlet</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(w) Carex sp (Sedges) trigonous nutlet</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(w) Conium maculatum (Hemlock) fruit</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(x) Poaceaee undiff. (Grass family) caryopsis</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>(x) Ranunculus subgenus Ranunculus (Buttercup) achene</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(x) Rumex sp (Dock) nutlet</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Identified charcoal (+ presence)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betula sp (Birches)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Corylus avellana (Hazel)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Fraxinus excelsior (Ash)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Quercus sp (Oaks)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

[a-arable; c-cultivated; g-grassland; h-heathland; q-aquatic; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche. (+): trace; +: rare; ++: occasional; +++: common; ++++: abundant. Waterlogged remains are scored from 1-5 where 1: 1-2; 2: 3-10; 3: 11-40; 4: 41-200; 5: >200]
Appendix 2: Stratigraphic matrices

Trench 1

```
1

2

5

Ditch

13

F6

F14

Gully

3
```

Trench 2

```
1

2

12

Gully

3
```

Trench 3

```
1

28

22 Unstratified

21

SK2

F27

20

SK5

SK1

F19

Graves

26

SK4

F25

24

SK3

F23

18

Linear feature

3
```

Trench 4

```
1

2

3
```
Trench 5

1
2
16
F15
3

Ditch

Trench 6

1
10
8
9
7
F4
3

Large ditch
Land east of Milbank Close
Hart
Hartlepool
archaeological evaluation
report 3851

Figure 1: Site location

Reproduced from Explorer 306 1:25 000 by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2007. All rights reserved. Licence number AL100002176
Figure 2: Trench locations on behalf of Mr Brian Cowie.
Figure 3: Trenches 1-3, plans and sections

Trench 1, plan

Trench 2, plan

Trench 3, plan

Section 1

Section 2

Section 3

Section 4

Section 5

Section 6

Section 7

Land east of Milbank Close
Hart
Hartlepool
archaeological evaluation report 3851

extent of excavation

on behalf of
Mr Brian Cowie

scale 1:50 for A3 plot

2m
Figure 4: Trenches 4-6, plans and sections

Land east of Milbank Close
Hart
Hartlepool
archaeological evaluation report 3851

on behalf of
Mr Brian Cowie

Section 8
NW
SE
66.90m OD

Section 9
E
W
67m OD

Section 10
NW
SE
65.86m OD

extent of excavation
section
Figure 5: Trench 1, ditch [F6] and gully [F14] before excavation, looking north-west

Figure 6: Trench 2, gully [F11], looking north-west
Figure 7: Trench 3, inhumation [F27; SK2], looking south-east

Figure 8: Trench 3, inhumations [F23; SK3] (left) and [F25; SK4] (upper-right), looking north
Figure 9: Trench 5, ditch [F15], looking north-east

Figure 10: Trench 6, large ditch [F4], looking north-east