APPENDIX A SCHEME OF ARCHAEOLOGICAL MITIGATION

Mike Griffiths and Associates Ltd

PREAMBLE

The site has recently been used as offices. It is the subject of a current planning approval to redevelop it for residential purposes (City of York Council ref. no. 03/00127/FUL) Conditions 2 and 3 of that planning permission relate to a requirement for an archaeological excavation prior to development commencing and an archaeological watching brief of other ground works during development. The site lies within the Area of Archaeological Importance as defined by the Ancient Monuments and Archaeological Areas Act 1979. It is located outside the City Walls in an area known to contain important Roman and later deposits.

The quality, degree of survival, potential and value of the archaeological deposits varies across the site. The most significant feature so far identified by archaeological evaluation is the presence of relatively well preserved Roman inhumation burials. The mitigation strategy has been designed to reflect this variety and ensure that all significant archaeological deposits are either preserved in situ or, where appropriate, by record. Where health and safety considerations permit controlled public access to the excavations will be permitted. The results of the excavation will be published in an appropriate form.

1.0 PLANNING BACKGROUND

It is proposed to develop the site for residential use. Discussions have been held with the planning authority and the following represents a scheme of archaeological mitigation agreed by them in accordance with the current archaeological policies of the City of York Council

2.0 THE ARCHAEOLOGY AND HISTORY OF THE SITE

The site is centered at SE 59448 51025 and has been used as offices until recently.

A series of later 17th century maps appear to show the area to be south of the built - up area extending south west from Micklegate Bar and clear of the area of the Civil War sconce (Figure 1). This is also reflected in the limited archaeological record of the site.

By 1853, when the first OS map was published, the site consisted of a part of the landscaped garden of Mill Mount (Figure 2).

The form of the current building layout and observations made during archaeological evaluation and geotechnical survey suggest that the site has been considerably remodelled since that date.

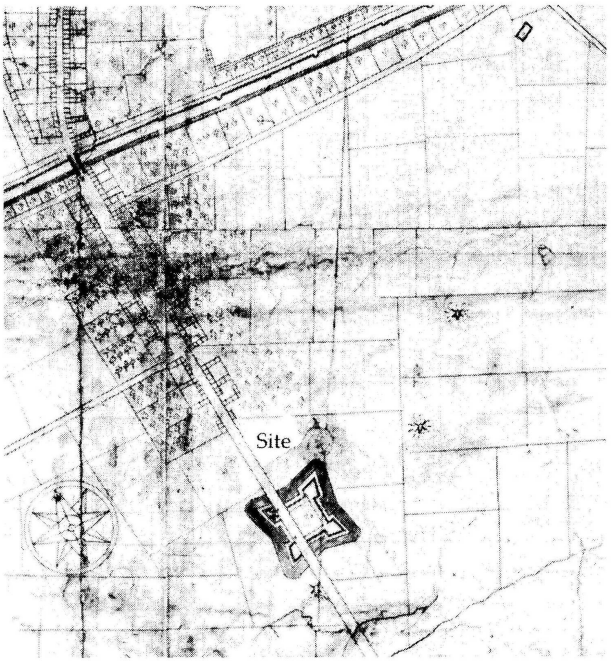

Figure 1 Site in *c.*1682

3.0 ARCHAEOLOGY OF THE IMMEDIATE VICINITY

The site lies to the south south east of the line of the principal roman road leading from Roman York (Eboracum) towards Roman Tadcaster (Calcaria). This road is lined with Roman burials, including some of the most prestigious and exotic in York. The richer burials appear to be concentrated on the Mount. Behind these more monumental burial places there are further extensive and intensively used burial plots. The finds from the Mill Mount area show that the cemetery extended back from the road at least 150 metres.

Figure 2 Site in 1852

The area appears to have been predominantly agricultural in the medieval period. The construction of the great redoubt, across the line of the York to Tadcaster road, as part of the Royalist defences had a major impact on the area, in particular the disturbance of large numbers of burials. In the 19th century the area was progressively developed for large villas and terraces of large townhouses.

4.0 THE ARCHAEOLOGY OF THE CURRENT SITE

The site has been the subject of three recent phases of archaeological observation. The first, an archaeological evaluation, took place between 31 October and 6 November 2002 the second, a watching brief on a geotechnical survey in March 2004, and the third was an archaeological evaluation of the garden area in June 2004. The results have been reported upon in two separate reports, copies of which have previously been supplied to City of York Council. The area codes A, B, C, D, E, F1 and F2 referred to below apply to the archaeological sub-divisions within the site that will form the basis of the mitigation strategy; see Plan 1.

The earliest use of the site dates to the Roman period and takes the form of an inhumation cemetery. Funerary material recovered from the fill of one of the inhumations suggests that the cemetery may have gone through more than one phase of use. There has been no indication, however, that the burial density is as great as on some other parts of the cemetery on the Mount.

There is no evidence of any subsequent use, other than agriculture, until the 19th century.

5.0 THE PROPOSED DEVELOPMENT

The development will include the demolition of a cottage, conversion of remaining buildings to residential use, erection of a new residential building, creation of a new access from Albermarle Road, formation of a car park and associated landscaping. Slightly contaminated topsoil will have to be removed from the current garden areas.

6.0 MITIGATION STRATEGY

The site evaluation undertaken in 2002 combined with the results of the 2004 geotechnical survey has clearly shown that the archaeological potential and degree of survival of the archaeological deposits varies across the site. 19th century development in the form of cottages and villas may have removed much of the evidence of the Roman cemetery within their footprints. Elsewhere, however, dumping in the same period appears to have buried and sealed the cemetery protecting if from subsequent interference.

The two inhumations burials which have been found are on the western fringe of the site. Elsewhere there has been no trace of any burials, either in situ or disturbed. This may indicate that a boundary to cemetery lies within the development area. Disturbed human bone was found in the recent evaluation of the garden area.

Area A includes the footprint of the proposed new building. This extends to approximately 200 sq metres.

This area will be totally excavated prior to any development commencing and a full record made of all the archaeological features and deposits identified.

The results will be analysed and form part of a published record of the archaeology of the site.

Area B represents an area of the new access where construction may impact on in situ burials. It extends over an area of approximately 45sq. metres.

This area will be totally excavated prior to any development commencing and a full record made of all the archaeological features and deposits identified.

The results will be analysed and form part of a published record of the archaeology of the site.

Area C represents the area of new car parking. A drainage system running through the area down to Mill Mount may impact on in situ burials, if they survive. The line of the drains will therefore by archaeologically excavated in advance.

Construction depth for the car park itself will be kept to an absolute minimum and is not expected to impact on in situ burials, if present. It may, however, reveal evidence of disturbed burials and 19th century structures.

This area is subject to a watching brief during construction works.

The results will be analysed and form part of a published record of the archaeology of the site.

Area D represents the proposed location for a garden feature and may be used as the location for an on site ossuary.

This area is subject to a watching brief during construction works.

The results will be analysed and form part of a published record of the archaeology of the site.

Area E currently forms part of the current access from Mill Mount and a standing building which is to be demolished. Improvements to the access may impact on in situ burials. It extends over an area of approximately 50sq. metres

This area will be totally excavated prior to any development commencing and a full record made of all the archaeological features and deposits identified.

The results will be analysed and form part of a published record of the archaeology of the site.

Areas F1 and F2 comprise the current garden area. Analysis has shown that the top 200mm of soil is contaminated and will have to be removed from the site. A recent evaluation, June 2004, has shown that dumped material of 19th century date extends down at least to 250mm below the present surface.

The presence of disturbed human remains in the topsoil will require that the operation is the subject of a watching brief to ensure their identification and collection for analysis and subsequent reburial.

7.0 THE SCHEME OF ARCHAEOLOGICAL INVESTIGATION

The scheme of archaeological works outlined below will provide an adequate response to the proposed development.

7.1 SITE INVESTIGATION - GROUND INVESTIGATION

Where topsoil or recent overburden is to be removed from any area this will be done either by hand or using an appropriate mechanical digger employing a toothless bucket and the operation will be carried out under direct archaeological control and supervision. These deposits will be removed by this method down to the highest surviving archaeological features and deposits or to the top of the natural subsoil, whichever is the higher.

Thereafter the archaeological features and deposits will be examined by hand according to a previously agreed sampling procedure in accordance with the scheme outlined below.

7.2 SAMPLING OF ARCHAEOLOGICAL FEATURES AND DEPOSITS

Where substantial or significant deposits or features are identified they will be treated as follows:

Excavation of any potential pre-modern features will be hand sampled to a degree that will achieve the objective of determining their chronology, and the function of the site and its various components. Sampling and recording strategies will take account of and reflect any potentially multi-phased nature of the occupation.

A minimum of 20% of the deposits within linear features such as boundary ditches or drainage features associated with domestic, agricultural, industrial or funerary enclosures, or fields, or thoroughfares, will normally be removed and examined to characterise and date them. Additional quantities may be removed to achieve these objectives and to collect and process bulk samples. This may be extended to 100% recovery of the deposits where in situ preservation is not possible. The deposits at the junctions of, or interruptions in, linear features such as boundary ditches, house enclosures etc. will always be totally removed over a sufficient area to determine the nature of the relationship between the components.

Other discrete cut features such as postholes, pits, or isolated trenches will be normally half sectioned to define and record

their form, and determine their date. This will be extended to total excavation of such features in areas where in situ preservation is not possible or the interpretation of the feature requires total removal of the deposits.

In the case of sunken-floored buildings, wall settings, bell pits, kilns, burials, storage pits or other identifiable domestic, industrial, or funerary structures or buildings, these should normally be excavated in plan.

Any examples of a domestic, industrial, agricultural or funerary structure or building such as huts, barns, kilns, gateways, causeways, working hollows, floor levels, and hearths will be excavated to a degree whereby its nature, form, chronology, function and relationships can be determined. If necessary this will involve 100% examination and recovery of deposits from the visible feature.

If burials are identified they will be examined in situ and only removed on the instructions of archaeological representative of CYC. If it is agreed that the remains are to be removed for more detailed examination they will be totally excavated and carefully removed according to the licence issued by the Home Office.

Built structures such as walls will be sampled to a degree whereby their extents, nature, form, chronology, function and relationship to other features or deposits can be determined. This will include total removal for recording and analysis purposes where the structure will not be preserved in situ.

All excavated features will be recorded textually, graphically and photographically. The record system will be an integrated one.

Where appropriate and necessary for the dating of features they will be subject to the application of appropriate scientific dating techniques in situ. Sampling for environmental purposes will allow for the collection of bulk samples from each area or more specific sampling subject to specialist advice; see below 7.4. Samples will also be recovered to permit a full and appropriate range of dating methods to be applied.

Every reasonable effort will be made to preserve the archaeological integrity of the sites against unrecorded damage or loss during excavation. This will apply to working techniques and site security.

Appropriate safety standards will be maintained at all times during the archaeological site works. The individual trenches and spoil areas will be surrounded by appropriate security fencing and kept locked when no one is working in the defined area. It may be necessary to demarcate some additional areas with hazard tape to identify no go areas.

The work will be professionally monitored on a regular basis.

The site is private but crossed by numerous paths and a road which permit virtually free access. No one should be invited to visit the site without seeking the approval of the college authorities.

7.3 SITE RECORDING

A site grid will be established and corrected to the British National Grid. Site co-ordinates will be recorded and reported in National Grid format.

The sites will be accurately tied into to a detailed local topographical survey.

The sites will be recorded using an approved standard system of context and other record forms or an on-site computer based system or an amalgam of both. Any form-based system will be transferred to a computer-based system.

Planning of features will be at scales of 1:10, 1:20 or 1:100; sections will be recorded at a scale of 1:10.

All finds will be recorded before they are removed from the sites and an inventory maintained on site of the nature and location of all artefactual or ecofactual material and environmental or other samples.

A series of indexes, capable of interrogation, will be maintained for all site records along with a working site matrix.

Appropriate treatment and storage methods will be employed on site to ensure that the finds and site records are maintained in the optimum conditions. These arrangements will be discussed and agreed with the proposed recipient museum before site works commence. An accession number will be obtained from the proposed recipient museum and used as part of the site recording scheme.

The archaeological works will be professionally monitored, and audited, on a regular basis. See below for specific arrangements.

7.4 SPECIALIST ADVICE

Specialist consultancy services will be secured, as necessary, to advise on any Prehistoric, Roman, Anglian and medieval material from the site, scientific dating techniques, environmental matters, and the conservation of artefacts. The external consultants, laboratories and conservation facilities engaged for the evaluation will be retained, where available, for all subsequent archaeological work on the site.

7.5 SITE ARCHIVE

After completion of the field investigation all records will be indexed, ordered, quantified and checked for consistency.

Context, finds, sample and other paper-based records will be transferred to an integrated computer based system. The system will be capable of maintaining an audit track of all records and finds in the system, including those being analysed by external specialists. It will also be able to produce data files that can be handled by a relational database.

The drawn record will be digitised in an appropriate format that will permit the output of standard DXF files.

The archival record will include all material relating to the sites and their excavation including correspondence, written, drawn and computerized records. The site archive will be curated to allow transfer to an approved and appropriate museum on completion of any publication programme.

If additional site investigation is to be undertaken, further analytical work on the results of any part-excavation will be postponed until the additional site work has been completed.

When no further site investigation is to take place, then:

As part of the preparation for the Post Excavation Assessment, the artefactual, ecofactual and samples will be quantified and described. In addition the stratigraphic matrices and a site summary will be prepared.

7.6 POST EXCAVATION ASSESSMENT

The Post Excavation Assessment will summarise the results of the evaluation, the results of specialists' work and quantify the archive.

It will assess the success of the evaluation in meeting the terms and objectives of the specification.

It will identify any additional research objectives that could reasonably be met from the archive.

It will describe the programme of post excavation work required to meet and publish the research objectives, including any additions to the objectives identified during the assessment.

It will contain adequate detail and discussion to permit critical examination by the monitors, other specialists and academic referees.

It will be provided in a written form and include a proposal and timetable for completion of the archive to MAP 2 standards, deposition of the completed archive and submission for publication of a final report.

7.7 POST EXCAVATION PROCESSING

The results of the excavation will be processed and researched according to an agreed programme identified by the approved Post Excavation Assessment.

A full artefactual, ecofactual, written, graphical, photographic and computerized archive will be prepared to approved standards as agreed with the recipient museum.

Assessment and analysis of unpublished information and the results of related work in the immediate area will be included in the post excavation programme for incorporation in any final site report.

If no additional archaeological investigation of the site is proposed, the final report will include a full account of the excavation and the outcome of research into those results and associated data. If it is deemed appropriate to publish the results the report will be subject to external academic refereeing.

7.8 TRANSFER AND DEPOSITION OF THE ARCHIVE

The transfer and deposition of the complete archive of the sites will be in accordance with current guidelines, subject to confirmation by the owner.

Copies of selected textual, graphical, digitized and photographic material will be deposited with the local SMR and the National Monument Record.

7.9 PUBLICATION

The results of the excavations will be published in an appropriate national or local academic journal (or journals) dependent

upon the results of the work.

7.10 MONITORING

The Local Planning Authority (LPA) will wish, through its archaeological advisers, to be involved in the process of site monitoring. Facilities will therefore be afforded to their nominated archaeological representative to be directly involved in the discussions on such matters as they arise during the course of the archaeological works.

Professional archaeological monitoring will be maintained during the course of the excavation, assessment, post excavation, publication and other related works until final transfer of the completed site archive into the care of an agreed and approved museum. This monitoring will be undertaken in conjunction with a designated representative of the local LPA.

Shepherd Homes Ltd or its nominated representative will undertake audits of both the excavation and post excavation processes and report their results.

Regular monitoring meetings will be held by Shepherd Homes Ltd, their nominated representative, and the archaeological contractor in order to provide an opportunity to review progress of site works and any post excavation programme. Representatives of the LPA and recipient museum will be formally invited to attend and contribute to the meetings.

An initial meeting will be held on the first day of the site works and at regular intervals during the course of the excavation. A meeting will be held on or close to the final day of site working. Subsequent meetings will include at least one to examine the results and proposals of the Post Excavation Assessment, and at least one other to monitor progress on the archiving and publication.

Additional spot checks by Shepherd Homes Ltd, the CNR, or designated representatives of the LPA will take place after due notice has been served on the Archaeological Contractor.

7.11 COMMUNITY INVOLVEMENT

City of York Council has a stated policy seeking to promote the use of the archaeological resource as an educational and cultural resource for the people of York. In accordance with this policy it is proposed that:

Information on the excavation will be made available on a dedicated web page which will be regularly updated during the course of the excavation.

Talks will be offered to local schools and an invitation extended fro them to make private visits to the site.

Subject to any limitations imposed by considerations of public health and safety it proposed to offer direct public access to the site on at least one specific day.

The results of the excavation will be published on a dedicated web page.

8.0 CONCLUSION

The site contains significant archaeological deposits. These will be preserved both in situ and in record form in accordance

with this scheme of mitigation, any mutually agreed variations to this scheme, any additional mitigation strategies, and additional individual schemes of archaeological recording that may be agreed for the specific zones within the site.

9.0 HUMAN SKELETAL TAPHONOMY (Malin Holst)

Human skeletal taphonomy depends on a number of complex intrinsic and extrinsic factors, which are often interrelated. Intrinsic factors include the shape, size and density of the bone, (Henderson 1987, 44), as well as the age, sex and pathology of the individual. When a body is placed in the ground, it is the centrepiece of a newly emerging micro-environment. It provides a food source and may cause chemical and temperature changes in its immediate environment (Sorg and Haglund 2002, 5). These processes are dependent on the existing extrinsic environment, which includes elements such as the biosphere, lithosphere and atmosphere, all of which interact (*ibid*). The speed and severity of the taphonomic changes is much greater while the soft tissue persists, slowing down upon skeletonisation.

9.1 INTRINSIC TAPHONOMIC FACTORS

Larger or denser bones survive considerably better in the burial environment than smaller ones, or those containing more spongy bone. Waldron (1987) has been able to map which bones may be expected to survive in a burial in most cases, and which bones tend to be least well represented. The sex of the individual also influences bone survival: male skeletons, usually being more robust than those of females, are more likely to survive intact in the burial environment. Age is another important factor in skeletal preservation, as the bones of children are much more gracile and therefore fragile, while skeletons of older people suffering from osteoporosis (bone loss) are also prone to deterioration. Other types of pathology, such as cancer, may also cause bone destruction, whereas bone forming pathological conditions, such as the bone callous that forms at fracture sites, may aid preservation of the affected part.

9.2 EXTRINSIC TAPHONOMIC FACTORS

Water is the most important agent in decay of human remains, especially when the water level fluctuates, therefore causing a constantly changing environment (Brothwell 1981). Several studies have found that bone affected by water `weathering` becomes more fragile than bone found in a consistently waterlogged or dry environment (Littleton 2000, 15).

Soil type is, of course, another important factor in human bone preservation. Bone condition is usually better in soils with a neutral or slightly alkaline pH, than in acid soils (Henderson 1987, 46). High acidity acts by dissolution of the inorganic matrix of the bone, thereby leaving only the organic matrix (*ibid*). This causes a distinctive type of burial preservation such as those of the famous sand bodies at Sutton Hoo. However, well preserved skeletons have also been found in acidic soil environments, suggesting that factors influencing skeletal preservation are complex.

Further extrinsic factors are soil movement above and around the burial, which can alter the burial depth or burial environment, and therefore alter the factors determining preservation. Additionally, physical pressure on the bone from buildings or heavy machinery can produce bone crushing (especially in areas of voids such as of crania) and bone warping, thus causing fragmentation.

The rate of nitrogen lost from bone is dependent on temperature. It has been found that the rate of chemical reaction is doubled with every increase of 10°C, which causes greater rates of decay in warmer environments than in cold ones (Henderson 1987, 47). Temperature is therefore a vital factor in bone preservation (*ibid*). Oxygen is also needed for body decomposition, and without it, decay is slowed down considerably, such as in bog bodies.

All manner of flora and fauna can have an effect on skeletal preservation. This can take place via direct attacks on the bone from bacteria, fungi, plant root destruction or rodent gnawing, insect or snail damage (Henderson 1987, 48). Indirect attacks include disturbance of bone from burrowing animals and plant roots, or spreading of bones over a wide area by the actions of scavengers.

Finally, the human effect on skeletal taphonomy must not be understated. This begins with the manner of funerary ritual (exposure, cremation, burial, sea burial, mummification) and culminates in modern changes of the burial environment (change in water table, landscaping, etc.). Collins (*pers. comm.*) has found that the gut bacteria in articulated burials act as a severely destructive force upon bone during the first two years following burial. Thus, skeletal remains which were immediately disarticulated following death are usually much better preserved than articulated skeletons. The depth of the burial, whether the body was clothed and buried in a coffin, the type of coffin and the amount of organic material in the grave also have a considerable affect on the initial decomposition of the body.

Later human intervention, such as a change in the use of a site, ploughing, chemical usage, changes of the water table and disturbance of all, or part of the burial can accelerate decomposition.

9.3 THE EFFECT OF CREMATION ON HUMAN BONE

Unburnt human bone has organic and inorganic components. In the burial environment, most of the organic elements are lost relatively rapidly, thus only leaving the inorganic component (calcium phosphate). However, this process is dependent on the soil type and generally occurs in alkaline sediments (high pH and calcium level). In acidic or neutral environments, the inorganic elements are soluble (Carter *pers. comm.*).

'Cremated bone becomes calcined, when a pyre is tended to achieve a temperature of at least 500°C over a period of seven hours' (McKinley 1989). The skeletal remains left over following the cremation process represent a largely intact skeleton, although the bones may be broken up if the they are subject to raking while still hot (McKinley 1994, 340). Cremated bone however, tends to suffer from heat-related cracking and warping. The process of burning means that the organic component is lost through oxidisation and the inorganic component is re-crystallised into a more stable state. Weathering may cause further fracturing along heat-related cracks or surface abrasion from movement of the bone largely because the mineral portion of the bone survives following cremation. However, taphonomic processes rarely destroy the actual structure of cremated bone, unlike that of unburnt bone. As a result, cremated bone survives better in most burial environments than skeletal remains from inhumations.

9.4 EFFECT OF PLOUGHING OR LANDSCAPING ON TAPHONOMY

Land cultivation has involved the same major criteria for hundreds of years, although the technology has changed considerably. Basic agricultural techniques include primary tillage, seedbed refining, fertilising and pest control (Haglund *et al* 2002, 134). While some activities, such as tillage and seedbed refining may disturb skeletal remains physically, fertilising and pest control can alter the chemistry of the burial environment.

The physical impact to the burial environment is worst in cases of the most considerable soil movement. This may include the ploughing of medieval ridge and furrow, whereby over the years, the furrows become increasingly deep, with soil movement onto the ridges, or during modern deep ploughing, which may reach to a depth of 36" if subsoil ploughs are used (*ibid*, 135). With both techniques, the plough cuts through buried, or displaces bones both horizontally and vertically. This not only results in eventual loss of the burial context and therefore the inability to identify the original grave, but also causes

fragmentation and erosion to the bone, as a result of its movement in the soil, and sharp and blunt force trauma from encounters with stones or plough blades. Furthermore, crushing of bone may occur from the weight of machinery used or from cattle trampling.

Studies of artefacts in plough zones have identified a number of patterns: during fieldwalking exercises, surface distributions of artefacts have been used as reliable indicators for subsurface distributions, with the greatest concentration of artefacts near the original site (Haglund *et al* 2002, 139). The distance of movement is affected by the duration and direction of tillage, local topography and by the size of the object (*ibid*, 140). Different researchers have found that approximately 6.63% of the subsurface assemblage would be represented on the surface following average ploughing, with artefacts re-appearing at the surface every six to seven years (*ibid*). Larger objects are more likely to be brought to the surface than smaller ones, although fragment size becomes more heterogeneous as the plough causes more and more abrasion and fragmentation (*ibid*).

Once the bone has been displaced to the soil surface, it is prone to weathering. An interesting study by Littleton (2000) has examined the effects of weathering on human bone in Australia. Despite the difference in climate, the study is also applicable to British burials. Littleton (2000) found that water weathering had a more severe effect on the bone than wind weathering, with gouging and erosion of the bone surface, longitudinal cracks and loss of trabecular and cortical bone. Additionally, alternate wetting and drying of bone caused severe fragmentation. Bone from wet environments was less mineralised than wind weathered bone, and the lack of mineralization also caused less good preservation. Wind damage, on the other hand, consisted mostly of polishing of the bone surface. The degree of weathering was strongly related to the length of exposure (*ibid*, 12). As a result, weathering following disturbance is a key element in taphonomic change.

The local chemical effects are also a major factor in decomposition. Chemicals added to fields include fertilisers, pesticides and herbicides, with manure also containing a high amount of bacteria and organic material (Haglund *et al* 2002, 138). As discussed above, cremated bone is much more chemically stable, and is therefore more prone to the physical effects of field cultivation (such as crushing and abrasion) than of chemical attack.

On sites where medieval ploughing precedes modern ploughing or landscaping, burials may be lost entirely following the exacerbated effect of long-lasting chemical and physical attack. Initially, the furrows of the medieval ridge and furrow field system will penetrate and disturb burials, especially if the furrows penetrate to or below the natural subsoil level. Over a period of time, the bone becomes increasingly displaced, fragmented, crushed and weathered. Once the field system is abandoned, erosion of the ridges may cause further exposure of the parts or of whole burials which had previously survived *in situ*. Later ploughing or landscaping then removes the ridges, and may penetrate down to the level of the subsoil with the aim of levelling the undulating landscape. Skeletal remains which had survived intact are then disturbed and suffer the effects of ploughing as discussed above.

In consequence, the different time scales of skeletal disturbance, different directions of displacement, changes in topography and agricultural techniques cause such varied displacement, that it may not be possible to reconstruct the location of original burials, nor be able to allocate isolated bones to specific individuals.

9.5 QUANTIFICATION OF MINIMUM NUMBER OF INDIVIDUALS

The count of the minimum number of individuals‘ (MNI) recovered from a cemetery is carried out as standard procedure during osteological assessments of inhumations in order to establish how many individuals were represented by the articulated and disarticulated human bones) without taking the archaeologically defined graves into account). The MNI is

calculated by counting all long bone ends, as well as other larger skeletal elements, such as the hip joints and cranial elements. The greatest number calculated is the MNI

It is not possible to calculate the MNI for cremation burials, as only a token selection of bone from the pyre was typically buried. However, double burials can be identified, if skeletal elements are duplicated, or if skeletons of different ages are represented in one burial (Correia and Beattie 2002, 443).

If none of the original inhumation and cremation burials survive ploughing and landscaping, and it is only possible to identify single bone fragments in a secondary context, the only possibility to calculate a MNI for both burnt and unburnt bone is to identify duplicate anatomical elements, or elements belonging to individuals of different ages. However, if the skeletal fragments are tiny and interspersed, it is unlikely that even extensive or complete sieving of the site matrix would produce many duplicate skeletal elements.

If the original cemetery is extensively disturbed by ploughing, causing considerable horizontal and vertical displacement, abrasion and fragmentation of bone, it is unlikely that it is possible to gain an approximate estimate of the number of original burials at the site.

9.6 CHEMICAL IDENTIFICATION OF ORIGINAL BURIAL LOCATIONS

A number of taphonomic processes may produce the complete loss of the skeletal remains. In such cases, it is unsatisfactory to speculate about the original location and quantity of burials, but would be more accurate to pinpoint the original burial using scientific tests.

Complete loss of the skeletal remains from the original site of burial may be found in two different scenarios: so-called ‘empty’ burials, or grave-shaped features which do not contain human remains, or those situations where severe truncation of the site caused total displacement of the skeletal remains (discussed above).

In the latter situation, the grave matrix will have been moved together with the skeletal remains, resulting in the complete loss of material which could have been used for chemical testing. As a result, chemical tests cannot be applied and bone scatter concentrations would be the best indicator for the original burial location (Carter *pers. comm.*).

The standard approach of testing for 'missing' bodies in suspected grave cuts is to measure the distribution and concentration of phosphate in the fills. Corpses represent substantial reservoirs of phosphate which tends to remain close to the point of burial. Two problems arise from this approach: false positive and false negative results (Carter *pers. comm.*). All biological tissues contain lots of phosphate, so there may be sources other than a human corpse for the phosphate (false positive). There are circumstances, where phosphate is mobile and can move away from the site of a corpse, or sediments may be present at the site, where phosphate levels are already high (old graveyards or some urban environments); so a single corpse cannot be detected (false negatives) (*ibid*). As a result, chemical tests are fraught with difficulty and may not provide accurate results.

The least expensive chemical test applicable is x-ray fluorescence (XRF), and more expensive tests include ion exchange and colurimentric methods (Collins *pers. comm.*). However, an initial assessment of the site, possibly by a bone and soil chemist, may indicate whether any chemical testing would be worthwhile.

9.7 CONCLUSION

The complex nature of taphonomic processes causing differential survival of skeletal remains, even within the same burial, means that it is difficult to assess the factors that contributed to differential preservation. The level of physical destruction then determines whether it is possible to allocate displaced skeletal fragments to original burials, or whether one has to rely upon duplicate elements to obtain an estimate of the original number of burials at the site. Similarly, the degree of chemical destruction together with the local environment predict whether it is possible to identify the burial chemically, or whether the identification is limited to any surviving archaeological evidence.

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10.0 PALAEOENVIRONMENTAL AND INDUSTRIAL SAMPLING

The following provisions will apply as far as reasonably possible to all types of archaeological investigation including evaluations. This is likely to prove most effective for the excavations, and of more limited application to other types of investigation.

The sampling strategies employed may differ from area to area according to established research targets and the perceived character, interpretive importance and chronological significance of the strata under investigation, although they will initially be based on the methodology set out below.

Sampling strategies and appropriate sample sizes will be agreed in consultation with the appropriate specialists before the investigation begins.

Sampling strategies will include a reasoned justification for the selection of deposits for sampling, and may be subject to modification in the light of results and conditions in the course of the investigation.

Bulk samples normally in the order of 20-40 litres, will be taken for flotation for carbonised remains from dateable deposits according to the agreed sampling strategy. Residues from the sample processing will be retained for the recovery of small artefacts and bone.

Bulk samples normally in the order of 10 litres, will be taken from significant dateable waterlogged deposits for insects and macroscopic plant remains.

Sub-samples or column samples of waterlogged deposits and sealed buried soils with the potential for pollen preservation will be taken for analysis with the advice of the appropriate specialists.

Bulk samples, normally in the order of 2 kilograms, will be collected for molluscs, if clearly present, and columns of such samples will be taken through deposits and buried soils where there is potential for recovering a dateable sequence of environmental information.

Large bulk samples in the order of 100 litres, will be taken from specific dateable contexts in consultation with the appropriate specialist for sieving to retrieve animal bone and small finds. Bone will also be hand collected from dateable unsieved contexts. Deposits particularly rich in bone will normally be excavated, recovered and sieved in their entirety, in consultation with the relevant specialists.

Each deposit in possible human cremations will be recovered in its entirety, sieved to retrieve the cremated bone and any associated artefacts, and then processed by flotation to recover any associated charred plant remains.

Buried soils and sediment sequences will be inspected and recorded on site by an appropriate specialist. Samples may be recovered for further appropriate detailed analysis where the appropriate specialists deem laboratory investigation necessary.

11.0 RELATED INFORMATION

Maps Consulted

Yorke 1610 by John Speed

Plan of York c 1682 by Capt James Archer

Plan of York 1685 by Jacob Richards

OS 1852

OS 1892

APPENDIX B SUMMARY OF CONTEXTS

Context	Feature	Int	Identity	Description	Munsell
1000	-	1	topsoil	black/very dark greyish brown silty sand with many roots and modern material	-
1001	-	1	layer	dark brown clay sand with occassional charcoal and cbm	-
1002	-	1	layer	reddish brown mixed sandy clay deposit - frequent inclusions of cbm, occasional animal bone	-
1003	1	2	recovery context	allocated to the recovery of finds during initial machining of F1	-
1004	-	3	recovery context	allocated to the recovery of finds during machine excavation	-
1005	-	2	layer	very dark greyish brown clay silt, occasional mixed gravel	10YR3/2
1006	1	2	recovery context	allocated to the recovery of finds during the hand excavation and cleaning of F1	-
1007	-	2	layer	-	
1008	-	2	subsoil	-	
1009	2	2	make-up	red brick make-up bonded with mortar	variable
1010	3	2	make-up	red brick make-up bonded with greyish fine sandy lime mortar set on a concrete sill	variable
1011	4	2	backfill	reddish brown sandy clay, frequent rounded gravel and mixed pebbles, rare flecks of charcoal and cbm	5YR4/3
1012	4	2	skeleton	articulated skeleton, well preserved, supine, truncated at knees, on left side and at shoulders by modern features	-
1014	5	2	fill	red ceramic pipe within a sandy clay matrix, occasional mixed gravel and pebbles, rare flecks of cbm	variable
1015	6	2	fill	red ceramic pipe within a sandy clay matrix, occasional mixed gravel and pebbles, rare bone fragments	variable
1016	7	2	backfill	yellowish brown sandy clay, occasional rounded gravel and pebbles, charcoal, bone and shell flecks	10YR5/4
1017	8	2	backfill	backfill of ditch	
1018	9	2	concrete base	concrete pad, 0.95m thick	variable
1019	10	2	make-up	red brick make-up of manhole chamber, bonded with cement	variable
1020	11	2	make-up	red brick make-up of manhole chamber, bonded with cement	variable
1021	12	2	make-up	glazed brick make-up, bonded with a grey cement	variable
1022	-	2	layer	allocated to definition spit to remove disturbed material in the vicinity of grave F4	-
1023	13	2	backfill	dark yellowish brown sandy clay, occasional rounded gravels and pebbles, charcoal and cbm flecks	10YR3/4
1024	13	2	backfill	strong brown silty clay, occasional rounded pebbles, rare charcoal flecks, 0.2m thick	7.5YR4/6

Context	Feature	Int	Identity	Description	Munsell
1025	14	2	recovery context	allocated to the recovery of finds during the machine excavation of F14	-
1026	15	2	backfill	sandy clay, frequent fragments of cbm and redeposited subsoil	variable
1027	16	2	backfill	same as C1121	-
1028	-	2	spread	mixed silty clay trampled layer, occasional brick fragments, rare ceramic pipe and concrete fragments	variable
1029	17	2	backfill	highly mixed silty clay, occasional rounded gravel and pebbles, concrete and brick fragments	variable
1030	18	2	backfill	highly mixed silty clay, occasional rounded gravel and pebbles, concrete and brick fragments	variable
1031	19	2	backfill	strong brown sandy clay, occasional rounded pebbles and gravel, rare flecks of charcoal and clods of red brown clay	7.5YR4/6
1032	19	2	skeleton	articulated skeleton, orientated W-E, disturbed by modern features	-
1033	21	2	fill	ceramic pipe within a yellowish brown silty clay matrix with frequent mixed gravel and pebbles	10YR5/4
1034	22	2	fill	fill of drain	
1035	23	2	fill	fill of drain	
1036	24	2	tile floor	red ceramic floor tiles, bedded into concrete	2.5YR4/6
1037	24	2	concrete bedding	dark olive brown silty sand, occasional mixed gravel inclusions, charcoal and cbm flecks, 0.1m thick	2.5Y3/3
1038	15	2	backfill	rubble backfill of brick lined tank, not excavated	-
1039	15	2	capping stone	single fragmented slab of York stone, 0.8m x 0.6m x 0.12m	variable
1040	15	2	make-up	brick make-up forming circular walls of F15 bonded with mortar	variable
1041	7	2	backfill	dark yellowish brown sandy clay, frequent rounded gravel and pebbles 0.25m thick	10YR4/4
1042	32	2	tarmac surface	modern tarmac surface, 0.05m thick	-
1043	32	2	hardcore	mixed angular limestone preparation layer, 0.06 - 0.1m thick	variable
1044	31	2	concrete floor	concrete floor layer	variable
1045	31	2	preparation	mixed brick and limestone fragments, 0.1m thick	variable
1046	-	2	concrete raft	concrete floor, 3m x 3m x 0.2m	7.5YR8/1
1047	25	2	make-up	red brick make-up bonded with lime mortar	variable
1048	26	2	drain	ceramic drain pipe	-
1049	27	2	make-up	red brick make-up of floor surface	2.5YR4/8
1050	28	2	make-up	red brick make-up of wall with a layer of slate and bonded with cement	variable

Context	Feature	Int	Identity	Description	Munsell
1051	28	2	concrete pad	light bluish grey cement with inclusions of brick rubble, mortar and rounded pebbles, 0.6m x 0.4m x 0.12m	-
1052	28	2	backfill	yellowish brown silty clay, frequent rounded pebbles and gravel	10YR3/4
1053	14	2	backfill	strong brown sandy clay, frequent rounded gravel and pebbles	10YR 4/6
1054	14	2	backfill	reddish yellow sand, with occasional clods of brown silty clay, rounded gravel and pebbles, 0.2m thick	7.5YR7/6
1055	14	2	backfill	strong brown sandy clay with red - brown mottling, occasional mixed gravel and rounded pebbles	7.5YR4/6
1056	14	2	backfill	strong brown clay silt with frequent clods of mottled dark brown clay sand, occasional mixed gravel and rounded pebbles	7.5YR5/6
1057	33	2	make-up	red brick wall make-up, bonded with lime mortar	variable
1058	-	3	layer	dark grey clay silt, occasional mixed gravel, pebbles, fragments of cbm and lumps of mortar 1.4m long, 0.1m deep	10YR3/1
1059	29	2	backfill	highly mixed dark grey silty clay, occasional orange brown clay clods, occasional rounded gravel and pebbles and rare flecks of charcoal	10YR4/1
1060	29	2	skeleton	remains of a small child, articulated, prone extended, aligned NW-SE, badly truncated by later features	-
1061	30	2	backfill	highly mixed dark grey silty clay, frequent rounded gravel and pebbles, occasional charcoal and bone flecks, rare lenses of wood staining. Fe objects and nails recovered	10YR4/1
1062	30	2	skeleton	articulated skeleton, supine extended, aligned NW-SE, good preservation	-
1063	8	2	backfill	dark brown clay silt, occasional mixed gravel, 5m x 3m x 0.65m	10YR3/3
1064	8	2	backfill	dark greyish brown silt clay, frequent mixed gravel and pebbles, 0.4m - 0.1m thick	10YR3/2
1065	14	2	backfill	brown sandy silt, occasional inclusions of mixed gravel and rounded pebbles, rare flecks of coal and charcoal	10YR4/3
1066	25	2	backfill	yellowish brown clay silt	10YR5/6
1067	26	2	brick lining	red brick lining	2.5YR4/8
1068	26	2	backfill	concrete used to seal drain	7.5YR8/1
1069	27	2	layer	brownish yellow silty sand, preparation layer for floor surface	10YR6/8
1070	24	2	layer	concrete preparation layer for tile floor surface	7.5YR8/1
1071	-	2	layer	dark brown clay silt, frequent mixed gravel, 0.5m - 0.6m thick	10YR3/3
1072	1	2	layer	brown silty clay, frequent mixed gravels and pebbles, occasional sand inclusions	7.5YR4/4

Context	Feature	Int	Identity	Description	Munsell
1073	1	2	backfill	dark yellowish brown clay silt, occasional mixed gravel and pebbles, rare charcoal, cbm, and bone fragments	10Yr3/4
1074	1	2	backfill	dark yellowish brown clay silt, frequent inclusions of mixed gravel and rounded pebbles, rare charcoal and bone flecks	10YR4/4
1075	1	2	layer	strong brown silty clay, frequent mixed gravels and pebbles	7.5YR4/6
1076	34	2	backfill	dark reddish grey silty sand, occasional rounded gravel and pebbles	5YR4/2
1077	34	2	backfill	dark greyish brown sand, occasional rounded pebbles and gravel	10YR4/2
1078	34	2	backfill	reddish brown sand, occasional yellow sand lenses	variable
1079	34	2	backfill	dark grey sand, frequent rounded gravel and pebbles	variable
1080	34	2	backfill	backfill of ditch	
1081	-	2	recovery context	same as C1071	-
1082	35	2	make-up	red brick make-up of well, hand made bricks 0.23m x 0.11m x 0.07m, possibly clay bonded	variable
1083	35	2	backfill	dark greyish brown sandy clay, frequent mixed pebbles and gravels, occasional fragments of brick and ceramic pipe	10YR 3/2
1084	36	3	backfill	dark yellowish brown sandy silt preparation layer, frequent mixed cobbles and pebbles and cbm fragments, rare mixed gravel	10YR3/4
1085	37	3	backfill	backfill of grave	
1086	37	3	coffin	coffin described by distribution of iron nails	
1087	37	3	skeleton	articulated inhumation, supine, orientated NW-SE, truncated	-
1088	37	3	backfill	dark yellowish brown silty clay, rare mixed gravel and pebbles, brown sand and charcoal flecks	10YR4/4
1089	35	2	backfill	black silt with occasional lenses of dark greyish brown sandy silt	variable
1090	38	2	backfill	brown clay sand, frequent mixed gravel and pebbles, rare flecks of charcoal, cbm and animal bone,	7.5YR4/3
1091	38	2	skeleton	articulated skeleton, supine, orientated SE-NW, truncated by later feature F163	-
1093	37	3	skeleton	fragmentary remains of a new born baby within F37, orientated NW-SE	-
1094	8	2	recovery context	same as C1063	-
1095	44	2	backfill	allocated to finds recovery during machine excavation and cleaning	-
1096	45	3	backfill	brown mottled silty clay, rare mixed gravel and pebbles, cbm and charcoal flecks	7.5YR4/3

Context	Feature	Int	Identity	Description	Munsell
1097	-	3	layer	olive brown sandy silt, occasional mixed gravel, 0.1m x 0.2m	2.5Y4/4
1098	46	3	backfill	dark grey clay silt, occasional mixed gravel, rare fragments of cbm	10YR3/1
1099	38	2	articulated femur	possible *in situ* skeleton part (femur) placed within grave F38	-
1100	47	3	fill	black charcoal deposit with occasional organic material; Fe object, ceramic, glass, a coin and Pb recovered	
1101	-	3	layer	brown clay, occasional large, angular cobbles	7.5YR4/3
1102	-	3	layer	yellowish red silty sand with occasional disordered blocks of yellowish brown clay silt	5YR4/6
1103	-	3	layer	brown clay, seen in section	10YR4/3
1104	-	3	subsoil	yellowish brown sandy silt, occasional blocks of dark brown clay	10YR5/6
1105	49	3	backfill	dark yellowish brown silty clay, occasional mixed gravel and rounded pebbles	10YR3/4
1106	50	3	backfill	dark yellowish brown silty clay, occasional mixed gravel and pebbles	10YR3/4
1107	51	3	backfill	dark yellowish brown silty clay, frequent mixed gravel and pebbles, ceramic recovered	10YR3/4
1108	52	3	backfill	dark yellowish brown silty clay	10YR3/4
1109	53	3	backfill	lost after initial cleaning due to heavy truncation	-
1110	54	3	backfill	dark yellowish brown silty clay occasional mixed gravel and pebbles	10YR3/4
1111	55	3	backfill	dark yellowish brown silty clay, frequent blocks of sandy clay, occasional mixed gravel and pebbles	10YR3/4
1112	56	3	backfill	dark greyish brown silty clay, occasional mixed gravels, ceramic, cbm, human bone recovered	10YR3/2
1113	57	3	backfill	brown sandy silt and a dark greyish brown silty sand, occasional mixed gravel and pebbles, rare fragments of cbm	10YR4/3
1114	-	3	backfill	yellowish brown sand, occasional dark brown sandy silt patches	10YR5/6
1115	58	3	backfill	dark greyish brown silty sand, occasional mixed gravel	10YR3/2
1116	48	2	backfill	greyish brown sandy clay matrix, frequent rounded gravel and pebbles, evidence of charcoal and animal bone, ceramic and Fe nails recovered	10YR5/2
1117	48	2	skeleton	articulated skeleton, supine, aligned NW-SE truncated by later pit F44, inhumation in coffin	-
1118	59	3	backfill	dark yellowish brown silty clay, occasional, mixed gravel and pebbles, ceramic recovered	10YR3/6
1119	60	3	backfill	dark brown silty clay, occasional mixed gravel and cobbles; ceramic and human bone recovered	10YR3/3
1120	61	3	backfill	dark yellowish brown silty clay, occasional mixed gravel	10YR3/4

Context	Feature	Int	Identity	Description	Munsell
1121	16	2	backfill	brown sandy clay, occasional lenses of brown clay, rounded pebbles and gravel, rare charcoal and bone flecks, ceramic recovered	7.5YR5/4
1122	16	2	backfill	brownish yellow sand, 0.2m thick	10YR6/6
1123	64	2	backfill	reddish brown clay, frequent rounded gravels and pebbles	7.5YR5/3
1124	64	2	backfill	brown sand, very frequent rounded gravels and pebbles, occasional disordered clods of clay, rare flecks of charcoal and animal bone	7.5Y4/2
1125	62	3	backfill	dark yellowish brown silty clay, occasional mixed gravel	10YR3/4
1126	63	2	backfill	reddish brown sandy clay, frequent disordered clods of clay, angular gravel and rounded pebbles, occasional charcoal and cbm flecks	5YR4/4
1127	-	2	layer	dark greyish brown sandy clay, occasional lenses of gravel, rounded pebbles and disordered clods of clay	2.5Y4/2
1129	66	2	backfill	brown silty clay, frequent rounded gravel and mixed rounded stones, charcoal, animal bone and cbm also evident ceramic recovered	7.5YR4/2
1130	67	3	backfill	dark yellowish brown silty clay, occasional mixed gravel; ceramic recovered	10YR3/4
1131	68	2	backfill	highly mixed sandy clay, frequent patches of angular gravel, occasional rounded pebbles, charcoal flecks and cbm fragments	variable
1132	69	2	backfill	brown silty sand, occasional clay clods, rare rounded gravel	7.5YR5/4
1133	70	2	backfill	backfill of a post hole	
1134	69	2	backfill	strong brown silty sand, 0.2m thick	7.5YR5/6
1136	69	2	backfill	brown silty sand, 0.2m deep	7.5YR5/4
1137	70	2	backfill	mixed silty sand, rare rounded grave and pebble inclusions	variable
1138	70	2	backfill	stone deposit made up of frequent rounded pebbles within a mixed silty sand matrix	7.5YR5/4
1139	70	2	backfill	brown silty sand, occasional rounded gravel and pebbles	7.5YR5/4
1140	71	2	backfill	dark greyish brown silty clay, frequent rounded gravel, occasional mixed pebbles, evidence of charcoal, cbm and animal bone	10YR3/2
1141	71	2	backfill	greyish brown sandy clay, frequent rounded gravel and mixed pebble inclusions evidence of charcoal and animal bone	10YR5/2
1142	72	3	recovery context	allocated to recovery of finds within F72	variable
1143	73	2	backfill	dark greyish brown sandy clay with occasional patches of reddish brown clay, rounded pebbles and cobbles, rare charcoal flecks	variable

Context	Feature	Int	Identity	Description	Munsell
1144	74	2	backfill	reddish brown sandy clay, occasional reddish brown clay patches, rounded gravel and pebbles and charcoal flecks, rare flecks of cbm	variable
1145	75	2	backfill	dark brown sandy clay, occasional disordered clods of reddish brown clay, frequent rounded gravel and pebbles, rare charcoal flecks, animal bone and ceramic recovered	7.5YR3/3
1146	75	2	backfill	dark greyish brown clay sand, rare rounded gravel and pebble inclusions	10YR4/2
1147	75	2	backfill	brown mottled sandy clay, frequent rounded gravel and mixed pebbles, rare flecks of charcoal, animal bone and ceramic recovered	7.5YR4/3
1148	76	2	backfill	brown clay sand, occasional rounded gravel and mixed pebbles; ceramic, animal bone cbm recovered	7.5YR4/4
1149	77	2	backfill	red sandy clay, occasional lumps of charcoal and rounded pebbles	2.5YR4/2
1150	73	2	backfill	light brownish yellow sand with patches of greyish brown sand, rare charcoal flecks and rounded pebbles	variable
1151	78	2	backfill	reddish brown sandy clay, occasional patches of soft greenish sand, charcoal flecks and angular pebbles, rare cbm fragments	variable
1152	76	2	backfill	light brown silt, occasional rounded gravel	7.5YR6/4
1153	-	4	recovery context	-	
1154	80	4	backfill	mixed silty clay, frequent brick and pipe fragments, occasional gravel and pebbles	variable
1155	80	4	make-up	red brick manhole make-up, bonded with grey cement	variable
1156	93	4	concrete base	concrete pad set into the base of F80	variable
1157	81	4	make-up	red brick wall make up bonded with a sandy grey mortar	variable
1158	81	4	concrete	concrete sill aligned NW-SE	variable
1159	82	4	concrete	-	-
1160	83	4	concrete	-	-
1161	83	4	drain pipe	-	-
1162	83	4	backfill	backfill of trench for drain pipe	
1163	84	4	make-up	make-up of a trench for foundations	
1164	85	4	make-up	red brick wall make-up, three courses bonded with white sandy limestone mortar	variable
1165	85	4	backfill	dark grey silty clay, occasional brick fragments, rounded gravel and pebbles, rare charcoal flecks; ceramic and bone recovered	10YR4/2
1166	86	4	backfill	reddish brown silty clay with black silty sand and occasional brick fragments	variable
1167	87	4	make-up	red brick wall make-up, bonded by pale yellowish sandy mortar	variable

Context	Feature	Int	Identity	Description	Munsell
1168	87	4	backfill	reddish brown silty clay, frequent inclusions of black silty sand patches, occasional brick fragments	variable
1170	89	4	backfill	backfill of drain	
1171	89	4	backfill	backfill of drain	
1172	90	4	backfill	dark grey clay silt, rare charcoal flecks, fragments of cbm pot bone and shell, occasional rounded gravel and pebbles	
1173	91	4	backfill	allocated as a recovery context during cleaning / definition trowelling of ditch F91 which is the same as F142 and F174	
1174	92	4	backfill	modern concrete capping, not excavated but recovered in plan	variable
1175	97	2	backfill	reddish brown sandy clay, occasional rounded gravel and pebbles, 0.45m thick	5YR4/4
1176	93	4	backfill	very dark grey silty clay, occasional rounded gravel and pebbles, charcoal and brick fragments	10YR4/2
1179	96	4	backfill	mixed reddish brown silty clay with disordered silty sand patches	variable
1180	96	4	make-up	red brick make-up bonded with pinkish red fairly hard mortar	variable
1181	93	4	pipe	ceramic drain pipe, bonded with cement	variable
1184	113	2	backfill	greyish brown sandy clay, occasional small patches of reddish brown clay and rounded pebbles, rare charcoal flecks	variable
1185	114	2	backfill	mixed sandy clay with frequent patches of pinky brown clay, occasional charcoal flecks and rare rounded pebbles	variable
1186	115	2	backfill	greyish brown sandy clay, occasional patches of reddish brown clay, rare charcoal flecks and rounded pebbles	variable
1187	116	2	backfill	light greyish brown clay sand, occasional patches of dark brown clay and rounded pebbles, rare flecks of charcoal	variable
1188	117	5	make-up	make-up of manhole	
1189	118	5b	make-up	make-up of drain	
1190	119	5b	make-up	make-up of drain	
1191	120	5b	make-up	make-up of drain	
1192	121	5b	make-up	make-up of drain	
1193	122	5b	make-up	make-up of drain	
1194	123	5b	make-up	make-up of drain	
1195	124	5b	make-up	make-up of floor surface	
1196	125	5b	make-up	make-up of pipe trench	
1197	126	5b	backfill	backfill of pit	
1198	127	5b	backfill	backfill of pit	
1199	128	5b	backfill	backfill of pit	
1200	118	5b	backfill	backfill of drain	

Context	Feature	Int	Identity	Description	Munsell
1201	119	5b	backfill	backfill of drain	
1202	125	5b	backfill	backfill of pipe trench	
1203	-	5b	layer	-	
1204	-	5b	subsoil	-	
1205	129	4	make-up	red brick make-up, of rectangular setting bonded with pale yellowish mortar	variable`
1206	129	4	backfill	backfill of manhole	
1207	130	4	backfill	backfill of drain	
1208	90	4	backfill	silty clay with rare flecks of charcoal, fragments of cbm and shell, occasional rounded pebbles and gravel; ceramic and bone recovered	variable
1209	139	4	backfill	backfill of grave	
1210	139	4	skeleton	-	
1211	140	4	fill	dark brown silty clay with inclusions of charcoal, gravel and pebbles	10YR3/3
1212	141	4	backfill	brown sand, frequent rounded gravel and pebbles, evidence of charcoal, animal bone and oyster shell	7.5YR5/4
1213	141	4	backfill	brown silty sand, rare disordered blocks of clay, occasional rounded gravel and mixed pebbles; ceramic, animal bone and loose human bone recovered	
1214	141	4	coffin	dark grey silt, representing staining of a long since decayed wooden coffin, 0.34m x 0.44m wide, 0.18m in depth, Fe nails recovered	10YR4/1
1215	141	4	skeleton	inhumation, articulated skeleton, supine, well preserved, truncated by F35, within casket	-
1216	87	4	backfill	dark grey silty sand, rare charcoal flecks	10YR3/1
1217	129	4	backfill	dark grey silty clay, rare charcoal flecks	10YR3/1
1218	-	4	subsoil	-	
1219	142	4	fill	very dark grey silty clay, occasional gravel and charcoal flecks, ceramic and animal bone recovered	10YR3/1
1223	145	4	backfill	backfill of post hole	
1226	91	4	backfill	backfill of gully	
1227	16	2	backfill	reddish grey sandy clay, frequent angular gravel and rounded pebbles, occasional charcoal flecks, 0.3m thick	2.5YR4/2
1228	16	2	backfill	brownish yellow sand, rare blackish blue sand lenses, occasional rounded pebbles	2.5Y7/6
1229	16	2	backfill	reddish brown sandy clay, occasional pinkish grey clay patches, occasional charcoal flecks, angular gravel and rounded pebbles	5YR5/2
1230	16	2	backfill	angular gravel within a yellowish white sand matrix	2.5Y7/3
1231	148	2	backfill	dark brown sandy clay, frequent mixed gravel and occasional mixed pebbles	7.5YR3/3

Context	Feature	Int	Identity	Description	Munsell
1232	149	2	backfill	dark yellowish brown sand occasional mixed gravel and pebbles, rare charcoal flecks	10YR4/6
1233	150	3	backfill	black silt, frequent blocks of tarmac, occasional mixed gravel and pebbles, rare cbm fragments	10YR2/1
1234	150	3	surface	dark greyish brown sandy silt, frequent mixed gravel, 1.4m long, 0.1m deep	10YR3/2
1235	150	3	make-up	lenses of white mortar and dark greyish brown clay silt, occasional mixed gravel	variable
1236	150	3	layer	frequent mixed pebbles and gravel within a dark greyish brown silty sand matrix with occasional cbm fragments	10YR 3/2
1237	-	3	layer	dark yellowish brown sandy silt, frequent lumps of silty clay, occasional mixed gravel and pebbles	10YR3/4
1238	159		backfill	black silt, occasional mixed gravel and angular pebbles, rare fragments of cbm	10YR2/1
1239	151		make-up	red brick wall make up bonded with limestone mortar	2.5Y5/1
1240	150	3	surface	black clay silt, frequent mixed gravels, 0.03m thick	10YR2/1
1241	-	3	layer	black clay silt, occasional mixed gravel, pebbles and fragments of cbm	10YR2/1
1242	-	3	layer	dark greyish brown sandy silt, occasional mixed gravel and pebbles, rare fragments of cbm	10YR3/2
1243	-	3	layer	dark grey clay silt, frequent mixed gravel and pebbles, 0.05m - 0.2m thick	10YR3/1
1244	-	3	layer	dark brown silty clay, frequent disordered blocks of mortar, occasional mixed gravel and pebbles	10YR3/3
1245	-	3	layer	dark brown silty clay, occasional mixed gravel and pebbles	10YR3/3
1246	-	3	layer	red degraded cbm, seen in section for 1.4m	2.5YR4/6
1247	152	3	make-up	red brick and stone wall make-up, bonded with limestone mortar	variable
1248	152	3	backfill	dark greyish brown clay silt, frequent mixed gravels and pebbles, occasional fragments of cbm, 1m wide, 0.8m deep	10YR3/2
1249	-		layer	same as C1235	-
1250	-	3	layer	dark brown silty clay, occasional mixed gravels and pebbles	10YR3/3
1251	153		make-up	large stone preparation layer, frequent mixed cobbles and pebbles, occasional mixed gravel within a dark brown clay silt matrix, occasional fragments of cbm	10YR3/3
1252	153		make-up	mortar blocks within a dark brown clay silt, occasional mixed gravel	
1253	-	3	layer	dark brown sandy silt, occasional mixed gravel and pebbles, rare blocks of gravel, 0.05m - 0.3m thick	10YR3/3
1254	-	3	layer	dark yellowish brown silty clay, frequent blocks of mortar, occasional mixed gravel and pebbles, rare fragments of cbm, 0.05m - 0.4m thick	10YR3/4

Context	Feature	Int	Identity	Description	Munsell
1255	-	3	layer	dark greyish brown sandy silt occasional mixed gravel and pebbles, 0.1m x 0.35m thick	10YR3/2
1256	-	3	layer	very dark brown sandy silt, occasional mixed gravel and pebbles and fragments of mortar and cbm	10YR2/2
1257	36	3	make-up	three lenses of path make-up consisting of a dark greyish brown silty clay, a mortar lens, silt clay and tarmac, occasional mixed gravel and pebble inclusions	variable
1258	-	3	layer	same as C1241	-
1259	-		layer	dark greyish brown sandy silt, occasional clay silt patches, mixed gravel and pebbles, rare fragments of cbm and mortar	10YR3/2
1260	154	3	make-up	path make-up consisting of two concrete slabs, 0.08m x 0.6m	10YR5/1
1261	-	3	layer	same as C1097	
1262	155		make-up	white mortar layer with frequent black silt inclusions, 0.05m deep	variable
1263	155		make-up	hardcore preparation layer consisting of frequent mixed pebbles and gravel, occasional fragments of cbm	10YR3/2
1264	155		layer	very dark grey clay silt, occasional mixed gravel and pebbles, rare fragments of cbm	10YR3/1
1265	-	3	layer	black silt, occasional mixed gravel and pebbles, cbm fragments and mortar blocks	10YR2/1
1266	-	3	layer	dark yellowish brown clay silt, occasional mixed gravel and pebbles, silt lenses and mortar blocks	10YR3/4
1267	156	3	backfill	black clay silt, occasional mixed gravel, pebbles, and cbm fragments	10YR2/1
1268	-	3	layer	same as C1266	
1269	-	3	layer	olive brown silty sand, 0.1m deep	2.5Y4/4
1270	-	3	layer	dark yellowish brown silty clay, occasional mixed gravel and pebbles	10YR3/4
1271	-	3	layer	same as C1271	-
1272	157	3	backfill	dark greyish brown silty sand, occasional mixed gravel and pebbles, rare fragments of cbm	10YR 3/2
1273	158	3	make-up	modern concrete slab, 0.9m wide, 0.05m deep	10YR6/1
1274	158	3	layer	very dark grey tarmac chippings within a clay silt matrix	10YR3/1
1275	-	3	layer	same as C1236	-
1276	159	3	make-up	red brick and tile make-up, heavily disturbed seen in section, frequent fragments of cbm	2.5YR4/6
1277	160	4	backfill	brown silty clay, rare rounded gravel, pebbles and charcoal flecks, ceramic, bone and cbm recovered	10YR3/3
1278	160	4	backfill	brown silty clay rare rounded gravel, pebbles and charcoal flecks, ceramic bone and cbm recovered	7.5YR4/2
1279	160	4	backfill	brown clay, rare flecks of charcoal	7.5YR5/3

Context	Feature	Int	Identity	Description	Munsell
1280	160	4	fill	brown clayey silt, rare rounded gravel and pebbles and charcoal flecks; ceramic and bone recovered	7.5YR5/2
1281	90	4	make-up	surface make-up consisting of large rounded gravel and pebbles, cbm, bone and Fe recovered	-
1282	160	4	fill	greyish brown sandy silty clay, rare rounded gravel and charcoal flecks; ceramic and bone recovered	10YR5/2
1283	160	4	backfill	brown sandy clay, rare rounded gravel; ceramic and bone recovered	7.5YR5/4
1284	160	4	fill	brown sandy clay, rare rounded gravel and pebbles	7.5YR5/4
1285	161	4	backfill	backfill of gully	
1286	162	2	backfill	yellowish red sandy clay, occasional mixed gravel and charcoal flecks	5YR4/6
1287	162	2	backfill	dark grey silty sand, very frequent rounded pebbles, occasional charcoal flecks	7.5YR3/1
1288	162	2	backfill	dark grey silty sand with disordered patches of yellow sand, frequrent mixed gravel, occasional charcoal flecks	7.5YR3/1
1289	163	2	backfill	backfill of pit	
1290	164	2	backfill	dark brown, silty clay, frequent disordered brown clay blocks occasional rounded gravel and mixed pebbles	7.5YR3/3
1293	160	4	fill	brown clayey silt, occasional blocks of brown clay, rare rounded gravel and charcoal flecks; ceramic and shell recovered	7.5YR5/2
1294	57	3	make-up	red brick wall make-up bonded with limestone mortar	2.5YR4/6
1295	142	4	fill	very dark greyish brown silt clay, occasional pebbles, charcoal flecks and mottling	10YR3/2
1296	167	2	backfill	dark reddish brown clay sand, occasional mixed gravel and pebbles	5YR3/3
1297	167	2	skeleton	inhumation, supine, orientated NW-SE, well preserved, partially excavated	-
1298	168	2	backfill	dark brown silty clay, frequent disordered brown clay clods, rounded gravel and mixed pebbles	7.5YR3/3
1299	91	4	fill	fill of gully	
1300	169	2	backfill	reddish brown clay, frequent disordered greyish brown sandy clay blocks, occasional mixed gravel and pebbles, animal bone, ceramic, cbm, burnt bone, oyster shell recovered	5YR5/4
1301	148	2	backfill	red sandy clay, frequent rounded gravel, pebbles and cobbles	2.5YR4/6
1302	148	2	backfill	brown sandy clay, frequent rounded gravel, pebbles and cobbles	7.5YR5/4
1303	148	2	backfill	brown sandy clay, occasional rounded gravel	7.5YR4/4
1304	148	2	backfill	strong brown clay sand, occasional gravel and pebbles	7.5YR4/6
1305	170	2	backfill	brown clay sand, occasional rounded gravel and pebbles	7.5YR4/4
1306	171	2	backfill	brown clay sand, occasional mixed gravel and pebbles	7.5YR4/4

Context	Feature	Int	Identity	Description	Munsell
1307	172	2	backfill	reddish brown sandy clay, frequent m ixed gravel and rounded pebbles	5YR4/4
1308	-	2	layer	dark grey sandy clay, occasional rounded gravel and pebbles	7.5YR3/1
1309	-	2	layer	yellowish brown sand	10YR4/6
1310	-	2	layer	dark grey sandy clay	7.5YR3/1
1311	173	2	backfill	reddish brown sand, occasional mixed gravel and pebbles	7.5YR4/4
1312	173	2	backfill	yellowish red sandy clay, occasional mixed gravel and rounded pebbles and charcoal flecks	5YR3/6
1313	173	2	backfill	dark brown clay sand, occasional rounded pebbles	7.5YR3/3
1314	173	2	backfill	yellowish brown sandy clay, occasional rounded pebbles	10YR4/6
1315	173	2	backfill	dark brown sandy clay, occasional rounded pebbles	7.5YR3/3
1316	173	2	backfill	yellowish brown sandy clay, occasional rounded pebbles and charcoal flecks	10YR4/6
1318	-	2	subsoil	yellowish brown sand	10YR5/4
1319	142	4	backfill	dark brown silty clay with inclusions of occasional rounded gravel, rare ceramic and animal bone	10YR3/3
1320	142	4	backfill	dark yellowish brown sandy silt with occasional inclusions of gravel and pebbles	10YR4/4
1321	16	2	backfill	dark grey sandy clay, frequent angular gravel and rounded pebbles	5YR3/1
1322	16	2	backfill	angular gravel within a yellow sand matrix	2.5Y7/4
1323	174	4	fill	backfill of ditch	
1324	-	4	backfill	greyish brown clay sand, occasional rounded gravel and pebbles, cbm fragments	-
1326	-	2	subsoil	yellowish brown sand	10YR5/4
1327	-	2	subsoil	yellowish brown sand	10YR5/4
1328	176	4	backfill	mixed backfill of a possible rubbish pit with frequent charcoal inclusions, ceramic, animal bone, an iron object and possible fragments of human cremated bone recovered	
1329	176	4	backfill	backfill of pit	
1330	176	4	backfill	sterile backfill of a possible rubbish pit	
1331	176	4	backfill	backfill of pit	
1332	176	4	backfill	backfill of a possible rubbish pit with inclusions of ceramic and animal bone	
1333	174	4	fill	backfill of a ditch with ceramic, animal bone and cbm recovered, possible cess character	
1334	174	4	fill	very dark grey clay silt with inclusions of charcoal, gravel and pebbles, rare ceramic and animal bone	
1335	174	4	fill	fill of ditch	
1336	174	4	fill	fill of ditch	

Context	Feature	Int	Identity	Description	Munsell
1337	174	4	fill	backfill of a ditch with considerable quantities of ceramic recovered together with several iron objects, possible cess character	
1338	174	4	fill	backfill of a ditch with some ceramic recovered, possible cess character	
1339	142	4	fill	backfill of a ditch with inclusions of ceramic, animal bone and iron objects, possible cess character	
1342	179	2	concrete surface	modern concrete surface, 0.07m thick	-
1343	180	2	wall	red brick wall make-up, bonded with creamy grey limestone mortar	variable
1344	179	2	layer	hardcore preparation layer, limestone chippings	variable
1345	181	2	backfill	dark greyish brown clayey silt, occasional gravel, pebbles and brick fragments	10YR4/2
1346	181	2	fill	ceramic drain pipe, 0.18m in diameter	-
1347	182	2	backfill	dark greyish brown clayey silt, occasional rounded gravel, pebbles and fragments of concrete	10YR4/2
1348	182	2	fill	plastic coated steel gas pipe, 0.05m diameter	-
1349	183	2	backfill	brown clay sand, occasional rounded gravel and pebbles, rare charcoal flecks	7.5YR4/3
1350	183	2	backfill	brown clay sand, very frequent rounded gravels, occasional rounded pebbles	7.5YR4/3
1351	183	2	backfill	brown sandy clay, occasional rounded gravel and pebbles	7.5YR4/3
1352	183	2	backfill	brown sandy clay, frequent rounded gravel and pebbles	7.5YR4/3
1353	-	2	layer	dark greyish brown silty clay, occasional rounded gravel, pebbles and dark brown clods of clay, rare charcoal flecks	10YR3/2
1354	189	2	backfill	brown sandy silty clay, occasional disordered clods of brown clay, rounded gravel and mixed pebbles, rare charcoal flecks	7.5YR4/3
1355	142	4	backfill	backfill of ditch	
1356	190	2	backfill	yellowish brown sandy clay silt, rare rounded pebbles and gravel, blocks of brown clay, flecks of charcoal	10YR4/4
1357	-	2	tarmac	-	
1358	-	2	concrete	modern concrete surface, 0.05m - 0.1m	variable
1359	185	2	make-up	red brick wall make-up, bonded with grey limestone mortar	variable
1360	1	2	backfill	very dark greyish brown clayey silt, frequent mixed gravel and pebble inclusions, rare cbm flecks	10YR4/2
1361	186	2	make-up	red brick wall make-up, bonded with off - white cream mortar in a stepped configuration	variable
1362	-	2	layer	pea gravel, 0.1m thick	variable
1363	-	2	layer	very dark greyish brown clayey silt, occasional mixed gravel, rare brick inclusions	10YR3/2

Context	Feature	Int	Identity	Description	Munsell
1364	1	2	backfill	dark brown silty clay, rare mixed gravels and charcoal flecks	7.5YR3/3
1365	1	2	backfill	greenish grey silty clay, rare flecks of charcoal and mixed gravel fragments	variable
1366	1	2	backfill	very dark greyish brown silty clay, occasional mixed gravel, rare flecks of charcoal and tile	10YR3/2
1367	1	2	spread	black spread of charcoal within a silt matrix, 0.04m thick	variable
1368	1	2	layer	dark greyish brown silty clay, occasional mixed gravel, rare flecks of charcoal, tile, shell and clods of clay	10YR3/2
1369	1	2	backfill	mixed sandy silt clay, frequent mixed gravel and pebble inclusions, rare charcoal flecks, 0.7m thick	variable
1370	1	2	backfill	backfill of ditch	
1371	174	4	backfill	backfill of ditch	
1372	174	4	backfill	backfill of ditch	
1374	184	2	backfill	yellowish brown clayey sand, occasional rounded gravel and pebbles	10YR5/6
1375	184	2	backfill	highly mixed clay sand, occasional lenses of brown clay, rounded gravel and pebbles, rare lenses of silt, fragments of bone and shell	variable
1378	195	4	backfill	backfill of post hole	
1379	195	4	backfill	backfill of post hole	
1380	195	4	fill	fill of post hole	
1381	142	4	fill	fill of ditch	
1382	142	4	fill	backfill of a ditch, mixed through with charcoal flecking, possible cess character	
1383	142	4	fill	backfill of a ditch, possible cess character	
1384	142	4	fill	fill of ditch	
1385	142	4	fill	sterile backfill of a ditch	
1386	142	4	backfill	backfill of ditch	
1387	197	2	backfill	reddish brown silt, occasional rounded gravel and pebbles	5YR4/3
1388	192	2	backfill	dark brown clay sand, occasional rounded gravel and pebbles	7.5YR3/2
1389	193	2	backfill	brown sand, occasional disordered patches of reddish brown sand, rounded gravel and mixed pebbles	7.5YR4/3
1390	194	2	backfill	brown sand, frequent rounded gravel and mixed pebbles	7.5YR4/3
1394	198	4	fill	allocated to a heavily truncated cremation vessel and its contents	
1395	199	4	backfill	backfill of post hole	
1396	200	4	backfill	backfill of a posthole with ceramic and cbm recovered	

Context	Feature	Int	Identity	Description	Munsell
1397	190	2	backfill	one of a series of backfills of a massive pit, C1397 was a very mixed deposit of sandy clay with frequent stone inclusions and finds of ceramic, animal bone, cbm and oyster shell	7.5YR4/3
1398	190	2	backfill	one of a series of backfills of a massive pit, C1398 was a deposit of dark brown clay sand with inclusions of charcoal flecks, gravel and pebbles throughout	7.5YR3/4
1399	190	2	backfill	one of a series of backfills of a massive pit, a brown clay largely free of inclusions other than small quantities of clay lumps, and rare gravel and pebbles	7.5YR4/4
1400	190	2	backfill	one of a series of backfills of a massive pit, a dark reddish brown clay with large stone inclusions	5YR4/2
1401	190	2	backfill	one of a series of backfills of a massive pit, C1401 was a sand deposit with rare stone inclusions and a find of an iron object	7.5YR5/6
1402	190	2	backfill	a mixed deposit of brown clay sand and clay lumps, with large inclusions of stone	7.5YR4/4
1403	190	2	backfill	a mixed deposit of brown sandy-clay and sand lenses with inclusions of mixed gravel and pebbles	7.5YR4/4
1404	191	2	backfill	allocated to a dark brown clay sand deposit with inclusions of mixed gravels and charcoal flecks	7.5YR3/4
1405	191	2	backfill	one in a series of backfills of a pit, strong brown sand small inclusions of pebbles but otherwise sterile	7.5YR4/6
1406	191	2	backfill	one in a series of backfills of a pit, reddish brown clay sand mixed with patches of dark reddish brown sand and frequent stone inclusions	5YR4/4
1407	191	2	backfill	an even mix of strong brown sand and light brown sand with occasional lumps of pale brown clay and inclusions of mixed gravels and pebbles	7.5YR4/6
1408	191	2	backfill	a lens of brown sandy clay with few inclusions of gravel	7.5YR4/3
1409	191	2	backfill	one in a series of backfills of a pit, forming a lens of light brown sand with rare gravel inclusions	7.5YR4/3
1410	191	2	backfill	alternating lenses of brown clay sand, strong brown sand and gravel, brown sandy clay and light brown sand with rare gravel	7.5YR4/3
1411	191	2	backfill	the first in a series of backfills of a pit, comprising a strong brown silt with rare gravel inclusions	7.5YR4/6
1412	142	4	fill	backfill of a ditch with heavy stone content and a patch of hobnails	
1413	142	4	backfill	backfill of ditch	
1414	142	4	backfill	sterile backfill in a sequence of disuse of a ditch	
1415	201	4	backfill	backfill of a post void within larger construction-cut for a posthole	
1416	201	4	backfill	backfill of posthole	
1417	202	4	backfill	backfill of a large posthole with rare animal bone recovered	

Context	Feature	Int	Identity	Description	Munsell
1418	203	4	backfill	backfill of posthole	
1419	176	4	backfill	backfill of pit	
1423	208	4	backfill	backfill of pit	
1424	208	4	backfill	backfill of pit	
1427	198	4	backfill	dark brown sandy clay	7.5YR3/2
1428	208	4	backfill	backfill of pit	
1429	209	7	backfill	backfill of the construction cut for a post-medieval brick wall	
1430	210	4	backfill	backfill of a pit containing animal bone, ceramic, fe object and charcoal flecks	
1431	-	6	tarmac	-	
1432	-	6	preparation	-	
1433	211	6	backfill	backfill of electricity cable trench	
1434	-	6	layer	-	
1435	-	6	layer	-	
1436	-	6	layer	-	
1437	-	6	layer	-	
1438	-	6	layer	-	
1439	-	6	layer	-	
1440	212	6	backfill	brown clay, occasional mixed gravel, pebbles and charcoal flecks	10YR4/4
1441	212	6	skeleton	articulated inhumation, supine extended within a coffin, disturbed in places	-
1442	-	6	layer	-	
1444	-	7	tarmac	-	
1445	-	7	preparation	-	
1446	214	4	backfill	backfill of a posthole with ceramic recovered	
1447	-	7	buried soil	-	
1448	-	7	layer	-	
1450	-	7	layer	-	
1451	215	7	backfill	backfill of pit	
1452	215	7	backfill	one of a sequence of backfills in a large pit	
1453	216	7	backfill	backfill of construction cut of brick wall	
1454	215	7	backfill	one of a sequence of backfills in a large pit	
1455	110	0.20833	backfill	dark greyish brown sandy silt, occasional rounded and mixed gravel and pebbles, ceramic and animal bone recovered	10YR4/2
1456	217	7	backfill	dark grey sandy silt with frequent clay blocks, occasional mixed gravel and pebbles	10YR3/1
1457	218	4	backfill	backfill of posthole	

Context	Feature	Int	Identity	Description	Munsell
1458	90	4	backfill	allocated to a deposit of brownish yellow clay with no inclusions other than small quantity of animal bone	10YR6/8
1459	219	4	backfill	backfill of posthole	
1460	219	4	backfill	backfill of a post void within construction-cut for a posthole	
1461	215	7	backfill	one of a sequence of backfills in a large pit	
1462	215	7	backfill	one of a sequence of backfills in a large pit	
1463	215	7	backfill	one of a sequence of backfills in a large pit	
1464	220	7	backfill	backfill of pit	
1465	218	4	backfill	backfill of pit	
1466	221	8	coffin lid	-	
1467	221	8	coffin	-	
1468	221	8	gypsum	-	
1469	223	8	backfill	backfill of construction cut for Roman sarcophagus burial	
1470	222	8	backfill	backfill around brick wall	
1471	160	4	cremation	-	
1472	224	8	skeleton	-	
1473	224	8	backfill	backfill of grave	
1474	99	5	make-up	brick make-up of manhole	
1475	100	5	make-up	make-up of drain	
1476	103	5	make-up	make-up of drain	
1477	105	5	make-up	make-up of drain	
1478	104	5	backfill	backfill of construction cut	
1479	106	5	make-up	brick make-up of wall	

APPENDIX C SUMMARY OF FEATURES

Feature	Int	Identity	Contexts	Description	Profile
1	2	ditch	1072-1075, 1364, 1365, 1366, 1367	linear running on a NW-SE alignment, 1.7m deep	unseen
2	2	wall foundation	1009	NW-SE aligned brick wall	u-shaped
3	2	wall foundation	1010	L-shaped brick wall set in a shallow foundation trench, linear in plan with a u-shaped profile and a flat base	u-shaped
4	2	grave	1011, 1012	sub-rectangular cut, truncated by F9, F2 and F15	-
5	2	drain	1014	ceramic drain within a vertical sided cut 0.3m x 0.3m	u-shaped
6	2	drain	1015	ceramic drain within a vertical sided cut, 0.75m x 0.35m	u-shaped
7	2	pit	1016, 1041	sub-oval in plan, 2.5m x 1m x 0.55m, steeply sloping sides with a flat slightly irregular base	u-shaped
8	2	ditch	1063, 1064	butt-end of ditch, 5m x 3m, moderate sloping edges with a flat base	u-shaped
9	2	concrete foundation	1018	square concrete pad foundation within a vertical sided square cut	u-shaped
10	2	manhole	1019	brick manhole chamber	-
11	2	manhole	1020	brick manhole chamber	u-shaped
12	2	manhole	1021	rectangular structure constructed of glazed bricks	u-shaped
13	2	posthole	1023, 1024	sub-circular in plan with steeply sloping sides, 0.89m x 0.6m x 0.4m	u-shaped
14	2	pit	1025, 1053, 1054, 1055, 1056, 1065	sub-circular in plan, 7.5m in diameter, 1.2m deep	u-shaped
15	2	well	1026, 1038,1039, 1040	large brick lined well/tank, capped by a York stone slab and filled with rubble, the construction cut was sub-circular in shape, 4.8m in diameter	unseen
16	2	ditch?	1121, 1122, 1321, 1322	ditch? running on a NW-SE alignment, u-shaped in profile with a flat base, butt-ends within Intervention 2	u-shaped
19	2	grave	1031, 1032	sub-rectangular in plan with steep, vertical sides and a flat base, 2.4m x 0.9m x 0.45m	u-shaped
20	2	sondage		machine excavated sondage, aligned NW-SE	u-shaped
21	2	drain	1033	ceramic drain within a linear cut running on a NE-SW alignment, 1m x 0.3-0.4m x 0.7m-0.8m	u -shaped
22	2	drain	1034	drain, running on a SW-NE alignment	u-shaped
23	2	drain	1035	L-shaped segment of ceramic drain	-
24	2	floor	1036, 1070	ceramic tile surface, 3m x 0.3m x 0.25m	not seen
25	2	wall	1047, 1066	remains of a modern brick wall	u-shaped
26	2	drain	1048, 1067, 1068	drain	u-shaped
27	2	floor	1049, 1069	brick floor surface 0.1m thick	-

Feature	Int	Identity	Contexts	Description	Profile
28	2	wall	1050, 1051, 1052	brick wall foundation, N-S alignment	u-shaped
29	2	grave	1059, 1060	sub-rectangular in plan with shallow sloping sides and a flat base, running on a NW-SE alignment	u-shaped
30	2	grave	1061, 1062	sub-rectangular in plan, running on a NW-SE alignment	u-shaped
31	2	concrete floor	1044, 1045	fine cement surface, <0.2m thick	u-shaped
32	2	tarmac surface	10421043	tarmac surface	u-shaped
33	2	brick wall	1057	brick wall, 1.65m x 2m x 0.37m, running on a N-S alignment	u-shaped
34	2	ditch	1076, 1077, 1078, 1079, 1080	linear in plan, with stepped edges and concave base, heavily truncated, 0.7m deep	stepped
35	2	well	1082, 1083, 1089	brick built well, not excavated internal diameter 1.3m, external diameter 1.8m , <1.5m in depth, vertical sides	unseen
36	3	path	1084, 1257	linear in plan, 2m x 1.4m x 0.2m, aligned NE-SW	u-shaped
37	3	grave	1086, 1087, 1088, 1093	sub-rectangular in plan with steep almost vertical sides and a flat base, 2m x 0.55m - 0.4m x 0.2m, aligned NW-SE	u-shaped
38	2	grave	1090, 1091, 1099	rectangular in plan with vertical edges and a flat base, 1.7m x 0.4m x 0.41m, running on SE-NW alignment	rectangular
40	2	sondage			
43	2	modern pit			
44	2	modern scoop	1095		
45	3	robber pit	1096	sub-rectangular in plan with steep near vertical sides and a flat base, 0.68m x 0.46m x 0.16m	u-shaped
46	3	pit	1098	irregular in plan with gradual sloping sides and an irregular base, 1.3m x 0.25m x 0.1m	irregular
47	3	fire pit	1100	sub-rectangular in plan, shallow with gradual sloping sides and an irregular base, 0.5m x 0.8m, orientated NE - SW	u-shaped
48	2	grave	1116, 1117	unseen in plan, shallow sloping sides to a concave base, truncated by modern pit F44, 1.2m x 0.8m x 0.23m, aligned NW-SE	scoop
49	3	posthole	1105	sub-circular in plan with gently sloping sides and a concave base, 0.5m in diameter, 0.1m x 0.15m deep	u-shaped
50	3	pit	1106	irregular shallow pit, steep sloping sides with an irregular base, 0.7m x 0.4m x 0.1m	u-shaped
51	3	posthole	1107	irregular shallow pit with gradual sloping sides and a concave base, 0.5m x 0.5m x 0.25m	u-shaped
52	3	posthole	1108	sub square in plan with a flat base, heavily truncated, 0.2m x 0.2m x 0.05m	u-shaped
54	3	pit	1110	irregular in plan with irregular sloping sides and a flat base, 0.7m x 0.6m - 1m x 0.15m	u-shaped

Feature	Int	Identity	Contexts	Description	Profile
55	3	posthole	1111	sub-rectangular in plan with stepped sides and a flat base	stepped
56	3	linear	1112	sub-rectangular in plan with near vertical sides and a flat base	u-shaped
57	3	wall	1113, 1294	terrace wall	u-shaped
58	3	posthole	1115	sub-rectangular in plan with a flat base, 0.2m x 0.2m x 0.2m	u-shaped
59	3	pit	1118	sub-circular in plan with gently sloping sides and a flat base, 0.5m x 0.8m x 0.1m	u-shaped
60	3	linear?	1119	sub-rectangular in plan with steep sides and a flat base, 2m x 1.5m x 0.1m - 0.4m	u-shaped
61	3	posthole	1120	sub-rectangular in plan with near vertical sides and a concave base, 0.3m x 0.2m	u-shaped
62	3	posthole	1125	sub-circular in plan with gradual sloping sides and a concave base, 0.15m in diameter, 0.01m in depth	u-shaped
63	2	linear	1126, 1127	curvilinear with steep sloping sides and a concave base, truncated by F8	u-shaped
64	2	linear	1123, 1124	linear, steep sided with a flat base, aligned NW-SE terminating within intervention 2	u-shaped
66	2	pit	1129	seen as sub-oval in plan, 1.6m x 0.55m x 0.2m	scoop
67	2	posthole	1130	irregular in plan with steep sloping sides and a concave base, 0.5m x 0.5m x 0.15m	u-shaped
68	2	modern drain	1131	linear, with gradually sloping sides and irregular base, 1.18m wide, 0.26m deep	u-shaped
69	2	posthole	1132, 1134, 1135, 1136	sub-rectangular in plan, near vertical sides with a flat base, 0.25m x 0.35m x 0.45m	u-shaped
70	2	posthole	1137, 1138, 1139	sub-circular in plan with steeply sloping edges and a concave base, 0.3m diameter, 0.3m deep	u-shaped
71	2	ditch	1140, 1141	curvilinear ditch butt ending within Intervention 2, shallow sloping sides with concave base, 3.7m in length, 0.1m - 0.36m in depth	u-shaped
72	3	sondage	1142	sondage cut through C1114 to test relationships with C1101, C1102 and C1103	rectangular
73	2	posthole	1143, 1150	large circular feature with steep edges to a concave base, heavily truncated, 0.91m in depth	u-shaped
74	2	linear	1144	curvilinear feature butt ending within Intervention 2, aligned E-W, gradual sloping sides leading onto a steep edged gully with a concave base, F115 and F116 are cut into the base of gully	irregular
75	2	pit	1145, 1146, 1147	sub-circular in plan, only partially visible, steeply sloping sides with a concave base, 1.3m in length, >1.2m in depth	unseen
76	2	pit	1148, 1152	sub-oval in plan with gradual sloping edges to a concave base, 1.12m x 0.8m x 0.3m	scoop

Feature	Int	Identity	Contexts	Description	Profile
77	2	posthole	1149	circular in plan with vertical edges and a concave base	u-shaped
78	2	posthole	1151	partially excavated feature, vertical sides to a concave base	u-shaped
80	4	brick manhole	1155, 1156	red brick manhole set on a concrete base	unseen
81	4	wall	1157, 1158	red brick wall on a concrete sill, aligned NW-SE	u-shaped
82	4	concrete drain	1159		
83	4	drain	1160, 1161, 1162		
84	4	foundation	1163		
85	4	wall	1164, 1165	red brick wall within a vertical sided flat based trench, 0.55m wide, 0.35m deep, aligned NE-SW	u-shaped
86	4	drain	1166	drain running at 45° to building. Curvilinear cut with fairly modern drain pipe	u-shaped
87	4	brick setting	1168	small rectangular brick setting	rectangular
89	4	drain	1170, 1171		
90	4	ditch	1172, 1208, 1281	linear in plan with gradual sloping edges and a concave base, aligned NW-SE, 0.25m deep	u-shaped
91	4	gully	1173, 1226, 1299	linear in plan with very steep sides and a concave base, aligned NW-SE, measuring 5.55m x 1.18m x 0.7. Same as F142 and F174	u-shaped
92	4	drain	1174	linear in plan, running on a NE-SW alignment	unseen
93	4	trench	1181, 1176	linear in plan with vertical sides and a flat base, aligned NE-SW,	u-shaped
96	4	manhole	1179, 1180	small rectangular brick setting, rectangular in plan	rectangular
97	2	pit	1175	sub-oval in plan with steep sloping edges to a concave base; 0.82m x 0.86m x 0.45m	rectangular
99	0.21	manhole	1474	brick built manhole	
100	0.21	drain	1475	concrete make-up of drain	
101	0.21	concrete surface	1480	make-up of concrete surface	
103	0.21	drain	1476	salt-glazed ceramic pipe in trench	
104	0.21	foundation cut	1478	foundation cut for wall F106	
105	0.21	drain	1477	salt-glazed ceramic pipe in trench	
106	0.21	wall	1479	brick built wall aligned NW-SE	
110	0.21	gully	1455	linear in plan, gradual sloping sides with a concave base, 2m x 0.4m x 0.14m, aligned NE-SW	scoop
111	0.21	sondage	-	-	-
113	2	posthole	1183	rectangular in plan, with steep sides and a flat base, 0.46m deep	rectangular
114	2	posthole	1187	seen in section with steep straight edges to a concave base, 0.46m deep	u-shaped
115	2	posthole	1186	sub-square in plan with gradual sloping sides and a concave base, 0.32m x 0.25m x 0.08m	u-shaped

Feature	Int	Identity	Contexts	Description	Profile
116	2	posthole	1187	circular in plan with shallow sloping edges and a concave base, 0.32m x 0.23m x 0.04m	u-shaped
117	5b	manhole	1188	modern brick-built manhole not excavated	not seen
118	5b	drain	1189, 1200	modern drain not excavated	not seen
119	5b	drain	1190, 1201	modern drain not excavated	not seen
120	5b	drain	1191	modern drain not excavated	not seen
121	5b	drain	1192	modern drain not excavated	not seen
122	5b	drain	1193	modern drain not excavated	not seen
123	5b	drain	1194	modern drain not excavated	not seen
124	5b	floor surface	1195	concrete floor surface not excavated	not seen
125	5b	pipe trench	1196, 1202	modern service not excavated	not seen
126	5b	pit	1197	modern pit not excavated	not seen
127	5b	pit	1198	modern pit not excavated	not seen
128	5b	ditch	1199	modern ditch not excavated	not seen
129	4	manhole	1206, 1217	brick setting of a manhole, 0.55m x 0.45m x 0.14m	rectangular
130	4	drain	1207	curvilinear in plan, with shallow sloping sides and a concave base	u-shaped
139	4	grave	1209, 1210	truncated grave of a baby, aligned NW-SE and truncated by manhole F80	
140	4	pit	1211	double posthole, 0.5m x 0.20m x 0.1m deep	u-shaped
141	2	grave	1212, 1213, 1214, 1215	sub-rectangular in plan with vertical sides and a flat base, 2.12m x 0.9m x 1.2m, truncated by F35, aligned NW-SE	rectangular
142	4	ditch	1319, 1320,1339, 1355, 1381, 1382, 1383, 1384, 1385, 1386, 1412, 1413, 1414	same as F91 and F174	U-shaped
145	4	posthole	1223	sub-circular feature 0.24m x 0.18m x 0.13m	u-shaped
146	4	posthole/ cremation	1225	circular in plan with steep sides and a flat base, 0.64m x 0.52m x 0.35m	u-shaped
148	2	pit	1231, 1301, 1302, 1303, 1304	partially excavated against section edge as a large pit, 3m x 1.3m deep seen in the base of sondage F40	scooped
149	2	posthole	1232	sub-rectangular feature, 1m x 0.8m x 0.7m	scooped
150	3	path	1233, 1234, 1235, 1236, 1240, 1249, 1275	path, possibly linear in plan with a flat base, 1.1m x 1.3m wide	u-shaped
151	3	wall	1239	red brick wall, 1.75m in length	-
152	3	wall	1247, 1248	red brick and stone wall	-
153	3	path	1251, 1252	path deposits with near vertical sides and a flat base, 1.4m wide, 0.2m deep	u-shaped
154	3	path	1260	modern path made up of concrete slabs seen in section	rectangular

Feature	Int	Identity	Contexts	Description	Profile
155	3	path	1262, 1263, 1264	linear in plan, vertical sides with a flat base forming part of a garden path, 1.3m wide, 0.2m deep	rectangular
156	3	pit	1267	pit with vertical sides and a flat base, 0.9m wide, 0.4m deep	u-shaped
157	3	pit	1272	pit, seen in section with a vertical edge and a flat, slightly sloping base, 0.8m x 0.5m	not seen
158	3	path	1273, 1274	modern path, 0.9m wide, 0.1m wide	rectangular
159	3	wall	1238, 1276	bricks and edging tiles seen in section, heavily disturbed	not seen
160	4	pit	1277, 1278, 1280, 1282, 1283, 1284, 1293	sub-oval pit, 1.8m in diameter, 1.2m in depth with steeply sloping sides and a flat base	u-shaped
161	4	gully	1285	short length of gully, aligned NW-SE, 0.04m deep	u-shaped
162	2	posthole	1287, 1288	sub-rectangular in plan with steep sided edges with a concave base, 1m x 0.8m x 0.75m	u-shaped
163	2	pit	1289	sub-oval feature 1.10m x 0.60m orientated NW-SE and up to 0.60m in depth	u-shaped
164	2	pit	1290	sub-oval feature 0.75m x 0.40m and up to 0.25m in depth	u-shaped
167	2	grave	1296, 1297	partially excavated with a scooped profile and a flat base, 0.6m x 0.6m x 0.18m, orientated NW-SE	scooped
168	2	posthole	1298	sub-oval feature 0.20m x 0.20m and up to 0.70m in depth	u-shaped
169	2	pit	1300	irregular pit, measuring 1.67m x 1.31m	irregular
170	2	pit	1305	possible ditch, seen in section, 0.7m wide, 0.8m deep	stepped
171	2	pit	1306	possible ditch, seen in section, 0.7m wide, 0.9m deep	stepped
172	2	pit	1307	possible pit, seen in section, 2.4m wide, 0.8m deep	scooped
173	2	pit	1311, 1312, 1313, 1314, 1315, 1316	possible ditch, seen in section, 1.1m in length, 0.65m in depth	rectangular
174	4	ditch	1319, 1320, 1333, 1334, 1335, 1336, 1337, 1338, 1371, 1372	same as F91 and F142	U-shaped
176	4	pit	1328, 1329, 1330, 1331, 1332, 1419	large steep-sided pit	U-shaped
179	2	concrete surface	1342, 1344	modern concrete surface, 0.07m thick bedded on a layer of limestone chippings	unseen
180	2	wall	1343	brick wall, bonded with white/cream limestone mortar, aligned NE-SW	unseen
181	2	drain	1345, 1346,	cut for drain pipe, aligned NE-SW, 0.5m wide, 1.3m deep	u-shaped
182	2	gas pipe	1347, 1348	cut for modern gas pipe, 0.4m wide, 0.5m deep	unseen
183	2	pit	1349, 1350, 1351, 1352	possible pit or butt end of ditch, partially excavated, gradual sloping edges to a flat base	u-shaped

Feature	Int	Identity	Contexts	Description	Profile
184	2	ditch	1374, 1375	linear, aligned NW-SE, heavily truncated	unseen
185	2	wall	1359	brick wall, 4 courses visible as a stepped foundation, aligned NW-SE, 0.4m -0.5m wide	unseen
186	2	pit	1361	brick wall, 2 courses of foundation within a flat bottomed vertical sided trench	unseen
189	2	pit	1354	possible pit, seen in section, vertical sides, heavily truncated	unseen
190	2	pit	1397, 1398, 1399, 1400, 1401, 1402, 1403	large pit in Intervention 2, measuring up to 1.0m in depth and over 3.0m in diameters	u-shaped
191	2	pit	1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411	possible linear identified in Intervention 2, measuring up to 0.90m in depth (same as F184)	u-shaped
192	2	pit	1388	rectangular shaped pit feature, backfilled once with C1388. 0.93m in diameter and 0.24m in depth	u-shaped
193	2	posthole	1389	small posthole identified in section, measuring up to 0.52m in diameter and 0.32m in depth	u-shaped
194	2	posthole	1390	small, steep-sided posthole identified in section, measuring up to 0.31m in depth	v-shaped
195	4	posthole	1378, 1379, 1380	sub-circular posthole 0.60m in diameter, and 0.30m deep, with concave base	u-shaped
197	2	scoop	1387	shallow irregular scoop	u-shaped
198	4	cremation burial	1394, 1427	amorphous deposit containing fragmented vessel and remains of cremation burial 0.40m x 0.35m x 0.20m	u-shaped
199	4	posthole	1395	small, sub-oval posthole, measuring 0.70m x 0.60m and found to be 0.20m deep	u-shaped
200	4	posthole	1396	circular feature 0.45m in diameter and 0.25m deep	u-shaped
201	4	posthole	1415, 1416	posthole with possible post-pipe, 0.50m in diameter and 0.40m deep	u-shaped
202	4	posthole	1417	sub-circular feature 0.80m x 0.66m and up to 0.50m in depth	u-shaped
203	4	posthole	1418	circular feature 0.40m x 0.38m x 0.38m	unseen
208	4	pit	1423, 1424, 1428	large pit, possibly recut by F176.	u-shaped
209	7	pit?	1429	possible pit or cut feature identified in section in Intervention 7 but not excavated further	irregular
210	4	pit	1430	subcircular feature, up to 0.36m in depth	u-shaped
211	6	electricity cable	1433	unexcavated	square
212	6	grave	1440, 1441	poorly defined in plan as a sub-rectangular grave cut, 1.95m x 0.65m, steep sided with a flat base	not seen
214	4	posthole	1446	small circular feature 0.28m x 0.24m x 0.37m, vertical sided	stepped
215	7	pit	1451, 1461, 1462, 1463	identified in section as a steep sided pit, cutting layer C1450	u-shaped

Feature	Int	Identity	Contexts	Description	Profile
216	7	construction cut	1453	identified in section as the construction cut of brick wall	u-shaped
217	7	pit	1456	pit with gradual sloping sides to a flat base, 2.1m x 1.3m x 0.2m	u-shaped
218	4	pit	1457, 1468	truncated posthole, visible in section, up to 0.40m in depth	u-shaped
219	4	posthole	1459, 1460	sub-circular posthole with post-packing	u-shaped
220	7	pit	1464		
221	8	grave sarcophagus	1466, 1467, 1468, 1469	stone sarcophagus	square
222	8	brick wall	1470		
223	8	grave cut	1469		
224	8	grave	1472, 1473	inhumation cut for grave 1.94m x 0.26m x 0.45m	u-shaped
225	2	drain	1048, 1068	brick built drain identified in section	square
226	2	posthole	-	possibly associated with sarcophagus insertion	-
227	2	pit	1227, 1228, 1229, 1230	allocated in post-excavation to a large sub-square pit, measuring 2.30m across and at least 0.90m in depth. Previously thought to have been part of F16	u-shaped

APPENDIX D INDEX TO FIELD FILE

CODE		DESCRIPTION	RECORD	FORMAT
		Indices		
YO1		Index of notebooks	-	-
YO2		Index of contexts	15	A4
YO3		Index of features	7	A4
YO4		Index of structures	-	-
YO5		Index of drawings		A4
YO6	.0	Index of photographs	32	A4
	.1	Index of film processing	1	A4
YO7	.0	Index of finds	digital	digital
	.1	Index of finds by context	-	-
	.2	Index of finds by grid square	-	-
	.3	Sample Register	1	A4
	.4	Artefact Register	-	-
	.5	Finds Storage Register	-	-
YO8		Index of geophysical data files	-	-
YO9	.0	Index of survey stations	-	-
	.1	Index of co-ordinate files	-	-
	.2	Index of topographic files	-	-
YO10		Index of interventions	1	A4
Y1		**Notebooks**		
		Contexts		
Y2	.0	Context Record	480	A4
	.1	Skeleton Record	13	A4
	.2	Coffin Record	-	-
	.3	Masonry Record	-	-
	.4	Timber Record	-	-
		Features		
Y3	.0	Feature Record	219	A4
	.1	Auger Record	-	-
		Structures		
Y4		Structure Record	-	-
		Site drawing		
Y5	.0	Legend	-	-
	.1	Plans	65	A4/A1
	.2	Maps	-	-
	.3	Sections	71	A4/A1
		Photographs		
Y6	.0	Black and white negatives	303	35mm
	.1	Colour negatives	691	35mm
	.2	Colour slides	-	-
	.3	Colour enprints	691	6"x 4"
	.4	Black and white prints	10	contact
		Finds		
Y7	.0	Finds Location Record	-	-
	.1	Artefact Record	-	-
		Survey		
Y8	.0	Record of geophysical data files	-	-
	.1	Record of .RAW data file	-	-
	.2	Record of .FLD data file	-	-
	.3	Surface Reconnaissance Record	-	-

APPENDIX E CERAMIC ASSESSMENT

Kate Steane and Alan Vince

Excavations undertaken at Mill Mount, York, by Field Archaeology Specialists produced a moderate-sized collection of pottery, totalling 1297 sherds, which represent no more than 915 vessels and weighing in total 22.095 Kg.

The pottery ranges in date from the later 1st to 2nd century through to the 19th century and includes a number of late 2nd to 3rd century smashed vessels which seem to be associated with domestic settlement on the site and a highly unusual group of Anglo-Scandinavian sherds which suggest a short-lived settlement outside of the city in the later 9th to mid 10th centuries.

1.0 DESCRIPTION

1.1 ROMAN POTTERY

The Roman pottery was recorded using the classification published by Monaghan (1997) with the addition of ware codes for wares not recognised in that work. The first of these is MRCA, Mid-Roman Campanian Amphora. This type was omitted from Peacock and Williams= classic work (1986) and recognised in Williams= contribution to Monaghan=s corpus, but without the attribution of a ware name, hence it cannot be recorded using Monaghan=s system for the amphorae in York, which is to use the Peacock and Williams Class Number(s).

A second addition is BLSF, a code employed at West Heslerton to describe the fabric of vessels made from the same parent clay as the calcite-gritted wares (K1) but with little or no calcite temper, and usually a higher quantity of quartzose sand. So far as is known, this fabric is contemporary with K1.

An attempt was made to identify the East Gaulish sigilatta fabrics, but this is highly suspect and should not be taken as an accurate record.

The site has produced, in addition to the usual range of very fragmentary material, a number of semi-complete vessels, mostly of late 2nd to 3rdcentury date. The catalogue identifies vessels to vessel form level but it would be possible to search for parallels for these vessels in the Monaghan corpus.

One complete samian stamp was present, of SEVERIANUS. This potter=s name occurs both in Central Gaul and East Gaul (Rheinzarben) and the second option is more likely. However, if the material is to be published, then a formal identification of the stamp should be undertaken by a specialist. Two other stamps are very fragmentary and not worth submitting for further study.

The samian ware, in particular, is in good condition, both from the size of the fragments and the lack of abrasion, and therefore it is possible to examine wear patterns. This indicates that most of the vessels show signs of use, mainly in the form of wear on the foot ring of the vessel. However, in addition, some of the samian mortaria sherds have their trituration grits worn away and the cups of formDR33 have a distinctive pattern of wear around the inside of the base angle, suggesting that the liquid contents were swirled around with a stick.

1.2 ANGLO-SCANDINAVIAN POTTERY

A small but potentially significant element in the pottery collection consists of fresh sherds of Anglo-Scandinavian wares. These consist of York A ware, a Lincolnshire wheelthrown shelly ware (LSLOC Subfabric B) jar with roller-stamped

decoration on the shoulder, and a body sherd from a sandy whiteware with a band of rectangular roller-stamping on the shoulder. The latter is possibly a Badorf ware and if so the roller-stamping would suggest an early 9thcentury or later date whilst the absence of Anglian vessels would probably place the sherd in the later 9th to early 10th century.

The shelly vessel was examined by Jane Young, who comments that the fabric is of late 9th to mid 10th century date in Lincoln and that possible wasters from its production have been recently found at Anchor Street, in the Wigford suburb, by the City of Lincoln Archaeology Unit. Consequently, they were not included in the forthcoming corpus of Anglo-Saxon and medieval pottery from the city (forthcoming).

The absence of Torksey ware and Stamford ware suggests that this Anglo-Scandinavian activity had ceased before the late 10th century.

1.3 MEDIEVAL POTTERY

A small quantity of later medieval pottery was present, mainly of Humberware, Brandsby-type and Hambleton ware. It is probably of later 14th or 15th century date. Unstratified or residual sherds of York glazed ware and Red Sandy ware, of later 12th to mid 13th century, were also present.

1.4 POST-MEDIEVAL POTTERY

A single sherd of Ryedale ware was present. This ware was probably first produced in the later 15th century and is particularly common in York in the 16th century. A residual sherd of Cologne Stoneware (KOLS) drinking jug, of mid 16thcentury date, was also recovered.

Two sherds of brown-glazed earthenware (BERTH), a late 16th to mid 17th century coarseware, a sherd of black-glazed ware (BL) and two sherds of glazed red earthenware (GRE) were present. These types were produced in the 17th and 18th centuries but in the case of the latter two wares, continue in to the early modern period. Sherds of post-medieval slipped red earthenware (SLIP), Staffordshire Mottled ware (STMO) and White Salt-glazed Stoneware (SWSG) were present in unstratified contexts.

1.5 EARLY MODERN POTTERY

Thirty-seven sherds of late 18th century or later date were recovered (and some of the post-medieval coarsewares could also be contemporary).

Most of these are unstratified but four come from the fill of F14 whilst sherds of flowerpot were present in the fills of features 86, 142, 209 and 215. In the latter instance, the assemblage also contained a fragment of refined redware teapot.

2.0 ASSESSMENT

Stratigraphy

The pottery was recovered from 63 stratified contexts, most of which were the fills of cut features which either cut natural deposits or a subsoil, interpreted as a Romano-British Ploughsoil.

Roman Ploughsoil

Two sherds were recorded from context 1324. One is an Ebor ware jar and the other a local mortarium sherd. Both are types which were in production in the later 1st century but continued in use into the 3rd century.

Sandy Silt

A clay pipe stem from context 1097 can be dated to the 19th century by its bore diameter.

Made Ground

A single sherd of Ebor ware was recovered from context 1002, dating its deposition to the later 1st century or later. Two Roman sherds were recovered from context 1001, which is dated on site to recent times.

Cut Features

The earliest possible deposition date for the filling of the various cut features is given in Table 00. Although there are 11 features which contain late 1st century or later finds there is no reason to believe that their fills are that early, although there is a scatter of later 1st to early 2nd century material from the site. Similarly, there are a number of features which contain Black Burnished ware or greywares with burnished decoration imitating BB1 and therefore datable to c.120 or later. There is no reason to suppose that any of these features are actually of early 2nd century date. In seven cases, these assemblages are small and contain only small sherds which could have been redeposited.

Eight features contain scraps of later 2nd century and later types. These types include Nene Valley colour-coated ware which continues much later. None of the groups is large enough to use the absence of Dales-type shelly ware as a dating feature. Pit 160, on the other hand, is probably a later 2nd or 3rd century assemblage, containing smashed jars of this date, including a Samian jar, and unusual form often indicative of higher status occupation.

Mid-3rd century and later features are dated by the presence of Dales-type shelly ware, which tends, in York, to be found only in the 3rd century, before being replaced by calcite-tempered ware before the end of the century. If contemporary, these finds narrow the deposition date to the mid-3rd century. Three of these assemblages contain only small sherds but Posthole 140, however, contains what may be a contemporary assemblage consisting of sherds from smashed burnished greyware jars, including one with obtuse angled lattice, usually taken as an indicator of mid-3rd century or later date and an Ebor ware jar copying the 2nd to 3rd century BB1 jar form. Pit 174 contains a large assemblage including sherds from several smashed vessels all of which could have been in contemporary use in the mid-3rd century although there is probably also a residual later 2nd to 3rd century element in the fill as well. Pit 142 contains a large assemblage of this date, including only one Dales shelly ware sherd and several greyware jars with the Dales ware rim form. It might therefore date to the early to mid-3rd century.

Assemblages contain sherds of calcite-tempered ware have been given *terminus post quem*s of later 3rd century. There are only 10 such deposits, and most of these contain mixed assemblages in which any later 3rd century or later element forms only a small fraction of the assemblage. Exceptions to this are Pit/ditch 8, Pit 39 and Large Pit 75, each of which contained fresh-looking sherds of calcite-tempered ware jars.

No sherds of handmade sandy wares, characteristic of later 4thcentury or later occupation in York were found on the site. Several sherds of Anglo-Scandinavian date were recovered from the site, coming from five different features: F19 (a burial); F56 (fill of a possible ditch); F90 (fill of a medieval ditch); F150 (a Victorian path); and F176 (a rubbish pit). Although the sherds in medieval and Victorian features might have been brought onto the site with dumped material from elsewhere in the city, the others are more certainly evidence for Anglo-Scandinavian activity on the site. This activity seems to have taken place within the late 9th to mid-10th centuries, since no sherds of Torksey ware or Stamford ware are present.

Feature 90 is most likely, from its pottery assemblage, to have been filled in the late medieval period but contains a sherd

of Ryedale ware, which should date to the later 15th or 16th century.

Other features are clearly datable to the later 18th century or later.

Table 1

Feature	No Sh	Date	Other comments
F001	108	A mixed assemblage, the latest sherds in which are late 3rd or 4th century	
F110	2	Scraps, possibly of late 1st to 2nd century	
F013	2	Scraps, Later than the late 2nd century	
F014	26	Late 19th or 20th century	
F140	31	Mid 3rd century or later	Smashed greyware jars
F141	4	Later 2nd century or later	Small sherds
F142	97	Early to mid 3rd century. The group contains no calcite-tempered wares and a single sherd of Crambeck ware	Mostly small sherds but some smashed greyware jars
F146	5	Late 2nd century or later	Small sherds
F150	8	Late 2nd century or later, plus one sherd possibly of Anglo-Scandinavian date	Small sherds
F158	1	Late 1st century or later	
F016	26	A mixed assemblage, including late 1st to 2nd-century and 3rd-century wares.	Small sherds
F160	146	A late 2nd to mid 3rd-century assemblage	Includes smashed vessels of E1 jar, B7 jar, and an East Gaulish Samian jar, together with a number of smaller sherds
F167	53	Later 2nd-century or later	Includes smashed B7 bowl and G1 jar
F169	15	A mixed assemblage. Latest sherds late 3rd century or later	Small sherds
F174	168	A mixed assemblage, including later 1st to 2nd century material. Latest sherds are mid 3rd century or later.	Includes smashed used Samian ware mortaria and cup, a greyware jar, a Dales shelly ware jar and NVCC beakers
F176	68	A mixed assemblage, including 2nd/3rd century material and later 3rd century sherds. Also one possible Anglo-Scandinavian sherd	Small sherds
F019	37	A mixed assemblage, including 2nd/3rd century material and later 3rd century sherds (but no calcite-tempered ware). Also one possible Anglo-Scandinavian sherd	Small sherds
F190	12	Early 2nd century or later	Small sherds
F196	13	A mixed assemblage, latest sherds later 2nd century	Small sherds

Feature	No Sh	Date	Other comments
		or later	
F198	21	Early 2nd century or later	Small sherds
F200	4	Early 2nd century or later	Small sherds
F201	13	Early 2nd century or later	Includes sherds rom a smashed burnished greyware jar
F202	1	Later 1st century or later	Small sherd
F204	2	Later 1st century or later	Small sherds
F207	1	Later 2nd century or later	Small sherd
F209	7	A mixed assemblage. Late 18th century or later	
F210	6	Early 2nd century or later	Small sherds
F214	2	Late 1st century or later	Small sherds
F215	14	A mixed assemblage. Late 18th century or later	
F219	1	Late 1st century or later	Small sherd
F223	14	Late 2nd century or later.	Small sherds
F030	2	Early 2nd century or later	Small sherds
F034	9	Later 2nd century or later plus one roller-stamped sherd of unknown date, possibly Anglian or Anglo-Scandinavian.	Small sherds
F037	5	Late 2nd century or later.	Small sherds
F038	2	Mid 3rd century or later	Small sherds
F039	3	Late 3rd century or later	Large sherds.
F004	4	Late 3rd century or later	Small sherds
F044	3	Early 2nd century or later	Small sherds
F045	6	Late 2nd century or later.	Small sherds
F046	5	19th century	
F048	16	Mid 3rd century or later	Small sherds
F051	1	Late 1st century or later	Small sherd
F056	1	Anglo-Scandinavian, late 9th century or later	Small sherd
F063	1	Later 1st century or later	Small sherd
F064	2	Later 1st century or later	Small sherds
F066	10	A mixed assemblage, latest sherds late 3rd century or later	Small sherds
F067	3	early 17th century or later	Clay pipe stems with no bore diameter surviving
F068	1	Late 1st century or later	Small sherds
F073	2	Late 2nd century or later	Small sherds
F074	3	Early 2nd century or later	Small sherds
F075	26	A mixed assemblage, latest sherds late 3rd century or later	Mostly small sherds apart from large fragments of calcite-tempered jars

Feature	No Sh	Date	Other comments
F076	2	later 2nd century or later	Small sherds
F008	9	Late 3rd century or later	Medium-sized sherds
F086	3	Late 18th century or later	
F090	90	Mostly residual Roman sherds together with a small number of late medieval. Latest is late 15th or 16th century Ryedale ware	The Ryedale sherd is small whereas the late medieval sherds are of moderate size.
F091	35	Mid 3rd century or later	Small sherds
F094	7	Late 2nd century or later	Small sherds, apart from robust amphora and mortaria sherds
F096	1	Late 1st century or later	Small sherd
F097	7	Late 2nd century or later	Small sherds

3.0 FURTHER STUDY

It is clear that much of the Roman pottery from the site is stratified and includes smashed vessels of later 2nd to 3rd century date. These are capable of being identified more closely, illustrated (if they cannot be closely paralleled) and catalogued. The groups in which they occur provide valuable evidence for the contemporary use of the different types and could be useful, for example, in demonstrating how late samian ware continued in common use in York.

The Anglo-Scandinavian finds are also important, since they indicate a short-lived extra-mural settlement in the late 9th/mid-10thcentury period. It would be wise to confirm the identification of the vessels using thin section and chemical analyses. The later wares require no further treatment.

Retention

All of the stratified material should be retained. The material from 1004 and 1153, both unstratified collections, could be discarded with the exception of the LKT jar.

References

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APPENDICES

Appendix 1 List of Ware Codes Employed for Roman Pottery

c name	Full name	Broad c name	Broad source	Narrow c name	Source area
AA	Unidentied amphora	AMPH	Imported	Amphorae	imported
AP17-19	Amphorae - Peacock &	AMPH	Imported	Amphorae	Western
AP25	Amphorae - Peacock &	AMPH	Imported	Amphorae	Western
AP27	Amphorae - Peacock &	AMPH	Imported	Amphorae	Western
AP27-30	Amphorae - Peacock &	AMPH	Imported	Amphorae	Western
AP45	Amphorae - Peacock &	AMPH	Imported	Amphorae	Eastern
B1	Black Burnished ware 1	BURNISHED	Regional industries	BB1	Dorset
B12	Crambeck B12	BURNISHED	Regional industries	Crambeck	Crambeck
B3	Grey B3	BURNISHED	Local	Grey B.	Yorkshire
B4	BB2-type	BURNISHED	Unknown British?	BB2	Unknown British?
B5	Black Burnished ware 2	BURNISHED	Unknown British?	BB2	Unknown British?
B7	Black Burnished ware 2	BURNISHED	Regional industries	BB2	South Yorkshire
B8	Native BB	BURNISHED	Local	Native	Yorkshire
BLSF	Late unburnished handmade	GREY	Local	Late h/m	Yorkshire
C1	NVCC	COLOUR-COATED	Regional industries	NVCC	Lower Nene
C2	NVCC	COLOUR-COATED	Regional industries	NVCC	Lower Nene
C24	Moselkeramik	COLOUR-COATED	Imported	Rhenish	Rhineland
C3	NVCC	COLOUR-COATED	Regional industries	NVCC	Lower Nene
C4	NVCC	COLOUR-COATED	Regional industries	NVCC	Lower Nene
E1	Ebor 1	EBOR	York	Ebor	York

c name	Full name	Broad c name	Broad source	Narrow c name	Source area
E7	Harsh Ebor 1	EBOR	York	Ebor	York
E9	Ebor 1	EBOR	York	Ebor	York
F1	Grey	GREY	Unknown British?	Fine Grey	Unknown British?
G0	Misc grey	GREY	Unknown British?	Grey	Unknown British?
G1	Local grey ware	GREY	York	Grey	York
G1?	Local grey ware	GREY	York	Grey	York
G18	Late unburnished handmade	GREY	Local	Late h/m	Yorkshire
G3	Dales-type greyware	GREY	Regional industries	Grey	Lincolnshire?
G7	Grey	GREY	Regional industries	Grey	South Yorkshire
G8	Grey	GREY	Unknown British?	Grey	Unknown British?
H1	Dales	SHELLY	Regional industries	Dales	Lincolnshire
K1	Calcite gritted	CALCITE	Regional industries	C. gritted	Vale of Pickering
M14	Mancetter-Hartshill mortaria	MORTARIA	Regional industries	Mortaria	Mancetter
M26	Northern French mortaria	MORTARIA	Imported	Mortaria	North Gaul
M3	Eboracum and local mortaria	MORTARIA	York	Mortaria	York
MRCA	Mid Roman Campanian Amphora	MRCA	Imported	Amphorae	Italy
P0	White	'WHITE'	Unknown British?	'White'	Unknown British?
P8	White	'WHITE'	Unknown British?	'White'	Unknown British?
R2	Rustic 2	RUSTIC	York?	Rustic	York?
S0	Samian	SAMIAN	Imported	samian	imported
S1	SGS	SAMIAN	Imported	SGS	South Gaul
S2	LMDV	SAMIAN	Imported	LMDV samian	South Gaul
S3A	CGS	SAMIAN	Imported	CGS	Central Gaul
S4	EGS	SAMIAN	Imported	EGS	East Gaul

c name	Full name	Broad c name	Broad source	Narrow c name	Source area
S4?	EGS	SAMIAN	Imported	EGS	East Gaul
S4L	EGS	SAMIAN	Imported	EGS	East Gaul
S4R	EGS	SAMIAN	Imported	EGS	East Gaul
S4T	EGS	SAMIAN	Imported	EGS	East Gaul
W1	Ebor white	EBOR	York	Ebor white	York

Appendix 2 Catalogue of Finds

Key:

SF= subfabric

W=weight

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1001		rom	AP27		Amph	1	1		BS	10		
1001		rom	S4		Drag 37	1	1		B	11		
1002		rom	E7		Bowl	1	1		R	25		
1003	F1	rom	AP25		Amph	2	2		BS	280		
1003	F1	rom	B1		Dish	1	1		R	16		
1003	F1	rom	B12		Jar	1	1		BS	13		
1003	F1	rom	C3		Jar	1	1		BS	92		
1003	F1	rom	E1		Jar	1	1		BS	23		
1003	F1	rom	M14		Mort	1	1		B	94		
1003	F1	rom	P0		Flagon	1	1		H	29		
1005	F1	rom	C1		Beaker	3	1	Indented	BS	3		
1005	F1	rom	G1		Jar	1	1		BS	22	Sooted ext	
1005	F1	rom	S1		Bowl	1	1		R	1		
1006	F1	rom	AP25		Amph	1	1		BS	54		
1006	F1	rom	AP27-30		Amph	2	1		BS	6		
1006	F1	rom	B1		Bowl, flanged	1	1		BS	8		
1006	F1	rom	B12		Jar	1	1		BS	12		
1006	F1	rom	B3		Jar	3	3		BS	14		
1006	F1	rom	B3		Bowl, flanged	1	1		R	32		
1006	F1	rom	B3		Jar	1	1		BS	9		
1006	F1	rom	BLSF		Dish	1	1	Profile; dog dish	R;B	26		
1006	F1	rom	C1		Beaker	1	1		BS	5		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1006	F1	rom	C4		-	1	1		BS	2		Vabr
1006	F1	rom	E1		Flagon/jar	4	4		BS	46		
1006	F1	rom	E1		Jar	2	2		BS	9		
1006	F1	rom	E7		Jar	1	1		BS	51		
1006	F1	rom	E7		?	1	1		BS	12		
1006	F1	rom	G1		Jar	2	2		BS	20		
1006	F1	rom	G1		Jar	1	1		BS	10		
1006	F1	rom	K1		Jar	2	1		BS	14		
1006	F1	rom	K1		Jar	1	1		BS	7		
1006	F1	rom	S2		Drag 31	1	1		R	15		
1006	F1	rom	S4	S4T?	-	1	1		BS	3		
1006	F1	rom	S4T		Dr 72	1	1		4	3		
1011	F4	rom	C1		Beaker	1	1		BS	5		
1011	F4	rom	C1		Beaker	1	1		BS	2		Abra
1011	F4	rom	G1		Jar	1	1		BS	9	Sooted ext	
1011	F4	rom	K1		Jar	1	1		BS	10		Abra
1023	F13	rom	C1		Beaker	1	1		BS	1		
1023	F13	rom	E1		Jar /flagon	1	1		BS	1		
1025	F14	ctp	PIPECLAY		Clay pipe	3	3	19th century bore	STEM	6		
1025	F14	ctp	PIPECLAY		Clay pipe	2	2	17th century bore	STEM	4		
1025	F14	emod	CREA		Plate	1	1		BS	2		
1025	F14	emod	ENPO		Vase	1	1	Lustre glaze	B	43		
1025	F14	emod	REFR		Tpot	1	1		SPOUT	8		
1025	F14	emod	WHITE		Plate	1	1		BS	17		
1025	F14	med	BRAN		Jug	1	1		BS	20		
1025	F14	med	HUM		Jug	2	2		BS	42		
1025	F14	med	RED SANDY		Jug	1	1		BS	5		
1025	F14	pmed	BERTH		Jar	1	1		BS	14		
1025	F14	pmed	BL		Bowl	2	1		BS	23		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1025	F14	rom	RPOT			3	3		R;BS	66		
1025	F14	rom	TPW		Cup	3	2		H;BS	7		
1025	F14	rom	TPW		Plate	2	2		R;B	10		
1025	F14	rom	TPW		Jug	2	2		R;BS	29		
1027	F16	rom	B12		Bowl, flanged	1	1		R	39		
1027	F16	rom	B3		Jar	3	2		R;BS	68		
1027	F16	rom	C3		Beaker	6	1	Funnel-necked indented	R;BS	12		
1027	F16	rom	E1		Bowl, flanged	4	1		R;BS	28		
1027	F16	rom	S4	S4B?	Dr37	1	1	Dec	BS	6		
1027	F16	rom	S4	S4B?	-	1	1		BS	1		Vabr
1031	F19	ascan	YORK A?		Jar	1	1		BS	3	Sooted ext	
1031	F19	ascan	YORK A?		Jar	1	1		BS	8		
1031	F19	rom	B12		Jar	1	1		BS	12		
1031	F19	rom	B3		Jar	3	3		BS	15		
1031	F19	rom	B3		Jar	2	2		BS	12	White dep int	
1031	F19	rom	B7		Jar	1	1		BS	5	White dep int	
1031	F19	rom	C1		Beaker	3	3		BS	19		
1031	F19	rom	C1		Beaker	2	2		BS	9		Abra
1031	F19	rom	C1		Beaker	1	1	Indented	BS	3		
1031	F19	rom	C1		Beaker	1	1	Indented with applied scales	BS	1		
1031	F19	rom	C1		Beaker	1	1	Roulette dec	BS	2		
1031	F19	rom	C3		Beaker	4	1		BS	1		
1031	F19	rom	C3		Beaker	1	1	Indented	BS	1		
1031	F19	rom	C3		Beaker	1	1		BS	1		
1031	F19	rom	E1		Jar	2	2		R;BS	18		
1031	F19	rom	E1		Bowl	1	1		R	8		
1031	F19	rom	H1		Jar	1	1		BS	11		
1031	F19	rom	S1		?	3	3		BS	1		
1031	F19	rom	S1		Drag37	1	1		BS	7		
1031	F19	rom	S1		Bowl	1	1		R	5		
1031	F19	rom	W1		Jar	1	1		BS	1		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1032	F19	rom	AP25		Amph lid	1	1		R	8		
1032	F19	rom	B1		Jar	1	1		BS	2		
1032	F19	rom	S2		Drag 37	1	1		BS	4		
1032	F19	rom	S4		Drag 29	1	1		BS	5		
1061	F30	rom	B1		Jar	1	1		BS	2		
1061	F30	rom	G1		Jar	1	1		BS	4		
1063	F8	rom	B3		Jar	1	1		R	21		
1063	F8	rom	E1		?	3	3		BS	29		
1063	F8	rom	G0	LIKE YG	Jar	1	1	Shl=1129	B	50		
1063	F8	rom	G7		Jar	1	1		BS	9		
1063	F8	rom	KI		Bowl	1	1		R	34		
1063	F8	rom	M14		Mort	1	1		B	78		
1073	F1	rom	AP25		Amph	1	1		BS	5		
1073	F1	rom	B1		Jar	5	1		R;BS	21		
1073	F1	rom	B3		Jar	4	4		R;B;BS	58		
1073	F1	rom	C1		Beaker	1	1		B	21		
1073	F1	rom	C3		Beaker	2	1	Cornice rimmed	R	9		
1073	F1	rom	C3		Beaker	1	1		B	5		
1073	F1	rom	E1		Jar	2	2		B;BS	17		
1073	F1	rom	G1		Jar	1	1		B	10		
1073	F1	rom	K1		Jar	5	5		BS	77		
1073	F1	rom	K1		Jar	2	2		BS	4		
1073	F1	rom	M3		Mort	1	1		R	5	Sooted rim	
1073	F1	rom	S1		Drag 31	3	1		R;BS	18		
1073	F1	rom	S1		?	1	1		BS	3		
1073	F1	rom	S1		Drag 33	1	1		R	3		
1073	F1	rom	S4		Drag 45	1	1		BS	38		
1073	F1	rom	W1		Jar/ flagon	4	2		BS	9		
1076	F34	ascan	BADO ?		Jar	1	1	Rect rsd	BS	3		
1076	F34	rom	B3		Jar	3	3		BS	34		
1076	F34	rom	K1		Jar	1	1		BS	32		
1076	F34	rom	M14		Mort	1	1		BS	52		
1076	F34	rom	S1		?	1	1		BS	1		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1076	F34	rom	S2		Drag 45	1	1		BS	2		
1076	F34	rom	W1		?	1	1		BS	1		
1081	F1	rom	B1		Jar	1	1		R	9	Sooted ext	
1081	F1	rom	B12		Jar	4	2		BS	58		
1081	F1	rom	B12		Jar	1	1		BS	4		Burnt
1081	F1	rom	B3		Jar	5	5		B;BS	33		
1081	F1	rom	B7		Jar	3	3		BS	40		Abra
1081	F1	rom	B7		Jar	1	1		BS	18	Sooted int	Abra
1081	F1	rom	BLSF		Jar	1	1		R	8	Sooted on rim	
1081	F1	rom	C2		Beaker	1	1		BS	13		
1081	F1	rom	C2		Beaker, indented	1	1		BS	2		
1081	F1	rom	C3		Beaker	2	1	Funnel-necked indented	R;BS	14		
1081	F1	rom	C3		Jar	1	1		R	2		
1081	F1	rom	C3		Beaker	1	1	Funnel-necked	R	7		
1081	F1	rom	E1		Jar	5	5		R;B;BS	73		
1081	F1	rom	E1		Jar	1	1		B	8		Abra
1081	F1	rom	H1		Jar	1	1		BS	2		
1081	F1	rom	S2		?	1	1		BS	4		Abra
1090	F38	rom	H1		Jar	1	1		BS	11	Sooted ext; white dep int	
1090	F38	rom	W1		Flagon	1	1		R	4		
1092	F39	rom	B12		Jar	1	1		B	70		
1092	F39	rom	K1		Jar	1	1		R	58	Sooted ext and on rim	
1092	F39	rom	K1		Jar	1	1		B	89		
1094	F8	rom	K1		Jar	1	1		B	14	Thick white dep int	
1095	F44	rom	E1		Bowl	1	1		R	17	Sooted on rim	
1095	F44	rom	MRCA		Amph	1	1		BS	18		
1095	F44	rom	S2		Drag31	1	1		R	7		
1116	F48	rom	B1		Jar	3	3	Cross hatching	BS	9		
1116	F48	rom	B3		Jar	2	2		BS	22		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1116	F48	rom	B7		Jar	2	2		BS	8		
1116	F48	rom	C1		Beaker	3	1	Funnel neck of indented beaker	R	11		
1116	F48	rom	C2		Beaker	1	1	Indented	BS	1		
1116	F48	rom	C3		Beaker	2	1	Indented with added scales	BS	1		
1116	F48	rom	E1		?	2	2		BS	4		
1116	F48	rom	H1		Jar	1	1		BS	9	Sooted ext	
1121	F16	rom	G1		Jar	1	1		BS	26		
1121	F16	rom	M14		Mort	1	1		BS	29		
1121	F16	rom	MRCA		Amph	1	1		BS	7		
1121	F16	rom	R2		Jar	1	1		BS	13		
1121	F16	rom	S1		Drag36	1	1		R	4		
1121	F16	rom	S2		?	2	2		R;BS	3		
1121	F16	rom	S2		Curl15	1	1		R	27		
1124	F64	rom	W1		Jar	2	1		BS	5		
1126	F63	rom	S1		?	1	1		BS	1		
1129	F66	rom	B5		Bowl	1	1		BS	2		
1129	F66	rom	E1		Jar	2	2		BS	3		
1129	F66	rom	G0	LIKE YG	Jar	1	1	Shl=1063	BS	1		
1129	F66	rom	G1		Jar	3	3		BS	15		
1129	F66	rom	KI		Jar	1	1		BS	42		
1129	F66	rom	P0		Jar	1	1		BS	1		
1129	F66	rom	SI		Drag18	1	1		BS	8		
1131	F68	rom	E1		Jar	1	1		BS	4	Sooted ext	
1143	F73	rom	B1		Jar	1	1		BS	1		
1143	F73	rom	C1		Beaker	1	1		BS	3		
1144	F74	rom	E1		Beaker	2	1		R	1		
1144	F74	rom	E1		Bowl	1	1		R	4	Burnt under rim	
1145	F75	rom	AP25		Amph	1	1		BS	69		
1145	F75	rom	B12		Jar	2	2		BS	14		
1145	F75	rom	B12		Bowl, flanged	1	1		BS	55		
1145	F75	rom	B3		Bowl, flanged	3	3		BS	77		
1145	F75	rom	B3		?	2	2		BS	5		
1145	F75	rom	B7		Bowl,	1	1		R	33		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
					flanged							
1145	F75	rom	E1		Jar	3	3		BS	26		
1145	F75	rom	E1		Flagon	2	2		BS	13		
1145	F75	rom	E1		Jar	1	1		R	8	Sooted under rim	
1145	F75	rom	G1		Jar	2	2		BS	14		
1145	F75	rom	G1		Jar	1	1	Turning	BS	6		
1145	F75	rom	K1		Jar	1	1		BS	2		
1145	F75	rom	K1		Jar	1	1		BS	18	Sooted int	
1145	F75	rom	K1		Jar	1	1		R	94	Sooted ext and on rim	
1145	F75	rom	P0		?	1	1		BS	7		
1145	F75	rom	S1		?	1	1	Footring	B	3		
1147	F75	rom	G1		Jar	1	1		BS	37		
1147	F75	rom	R2		Jar	1	1		BS	12		
1148	F76	rom	B12		Jar	1	1		BS	4		
1148	F76	rom	C1		Beaker	1	1	Funnel-necked indented	R	17		
1175	F97	rom	B1		Jar	3	1		BS	10		
1175	F97	rom	B12		Jar	1	1		BS	8		
1175	F97	rom	C3		Beaker	1	1	Funnel-necked indented	BS	2		
1175	F97	rom	E1		Jar	1	1		R	11		
1175	F97	rom	E1		Jar	1	1		BS	2		
1212	F141	rom	B3		Jar	1	1	Acute lattice	BS	1		
1212	F141	rom	E1		Flagon	2	2		BS	5		
1212	F141	rom	S4		-	1	1	Dec	BS	1		
1229	F16	rom	E1		-	1	1		BS	1		
1229	F16	rom	S4T		Dr 31	1	1		R	19		
1296	F167	rom	B3		Bowl, flanged	4	1	Obtuse lattice	R	190	Sooted ext	
1296	F167	rom	B3		Jar	1	1	Obtuse lattice	BS	5	White dep int	
1296	F167	rom	B7		Bowl	12	1	Obtuse lattice	B;BS	134		
1296	F167	rom	C1		Beaker	2	2	Indented with added scales	BS	10		
1296	F167	rom	C1		Beaker	1	1	Funnel necked indented	BS	19		
1296	F167	rom	C1		Beaker	1	1		B	13		
1296	F167	rom	E1		Platter	1	1		R	14		
1296	F167	rom	E1		?	1	1		BS	4		
1296	F167	rom	G1		Jar	13	1	Dalesware rim; shl=refno 91	R;BS	136		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1296	F167	rom	G1		Jar	11	1	Dalesware rim; shl=refno 92	R;BS	168		
1296	F167	rom	G1		Jar	3	2		B	70		
1296	F167	rom	M14		Mort	1	1	Wall-sided rim	R	43		V abra
1296	F167	rom	S1		Dr 37	1	1		BS	5		
1296	F167	rom	S1	ID?	Dr33	1	1		R	5		
1300	F169	rom	B3		Jar	2	2		BS	14		
1300	F169	rom	B3		Jar	1	1	Acute lattice	BS	2		
1300	F169	rom	B3		Jar	1	1	Thickened rim; no neck; further thickening below rim as finger grip; nothing like it in monagham	R	127		
1300	F169	rom	C1		Beaker	1	1		BS	1		
1300	F169	rom	E1		Jar	1	1		BS	6		
1300	F169	rom	E7		Jar	1	1	White slip	BS	18		
1300	F169	rom	G1		Jar	2	2		BS	11	Sooted ext	
1300	F169	rom	G1		Jar	2	2		B;BS	24		
1300	F169	rom	G8		Jar	1	1		BS	14		
1300	F169	rom	K1		Jar	1	1		BS	18		
1300	F169	rom	S1		?	1	1		BS	1		
1300	F169	rom	W1		Flagon	1	1		BS	4		
1397	F190	rom	AP25		Amph	1	1	White slip	BS	381		
1397	F190	rom	B3		Jar	2	2		BS	48		
1397	F190	rom	B7		Jar	1	1	Obtuse lattice	BS	51		
1397	F190	rom	E1		Jar	1	1		BS	5		
1397	F190	rom	F1		Jar	1	1		BS	24		
1397	F190	rom	G1		Jar	1	1		B	44	White dep int	
1397	F190	rom	S1		Drag 33	1	1		B	43		
1397	F190	rom	S2		?	3	1		BS	2		
1401	F190	rom	B1		Dish	1	1		B	3		
1004	us	ascan	LSLOC	B	Jar	1	1		R	36	Sooted ext and on rim	
1004	us	ctp	PIPE CLAY		Clay pipe	4	4	19th century bore	STEM	9		
1004	us	ctp	PIPE CLAY		Claypipe	2	2	17th century bore	STEM	4		
1004	us	emod	ENGS		Insulator	1	1		BS	29		
1004	us	emod	ENPO		Cup	2	1	Gold overpainting	H	6		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1004	us	emod	ENPO		Plate	1	1	Blue dec	B	10		
1004	us	emod	ENPO		Cup	1	1	Raised dec with gold overpainting; yellow background	R	9		
1004	us	emod	LPMLOC		Flp	6	6		R;B;BS	279		
1004	us	emod	NCBW		Jug	1	1	White/brown horiz lines	BS	6		
1004	us	emod	NCBW		Jug	1	1		B	24		
1004	us	emod	NCBW		Bed warmer	1	1	Printed black dec	R	221		
1004	us	emod	TPW		Plate	4	4	Blue dec	BS	13		
1004	us	emod	TPW		Cup	3	2	Blue dec	R	11		
1004	us	emod	TPW		Jug	2	1	Washing jug; jug&bowl set	R	82		
1004	us	emod	TPW		Bowl	2	1	Washing bowl; jug&bowl set	R	317		
1004	us	emod	TPW		Cup	1	1	Roses; cup&plate set	R-B	51		
1004	us	emod	TPW		Jug	1	1	Outline in black, handpainted	B	29		
1004	us	emod	TPW		Plate	1	1	Roses; cup&plate set	R	23		
1004	us	emod	WHITE		Mug	2	1	Black indust slip ext	R	26		
1004	us	emod	WHITE		Plate	2	1	Feather blue	R	10		
1004	us	emod	WHITE		Plate	2	2		BS	16		
1004	us	emod	WHITE		Cup	2	2		B;H	27		
1004	us	emod	WHITE		Jug	1	1	Indust grey slip	B	9		
1004	us	emod	WHITE		Plate	1	1	Maroon indust slip	R	2		
1004	us	emod	WHITE		Plate	1	1		B	4		Burnt
1004	us	emod	WHITE		Bowl	1	1	Hand painted dec	BS	4		
1004	us	med	BRAN		Jug	1	1		H	41		
1004	us	med	HUM		Jug	1	1	Red slip	14	14		
1004	us	med	HUM		Jug	1	1		R	31		
1004	us	med	YORK		Jug	1	1		BS	4		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1004	us	pmed	BERTH		Bowl	5	5		R;B;BS	174		
1004	us	pmed	GRE		Bowl	2	2		B;BS	74		
1004	us	pmed	GRE		Panc	1	1		BS	36		
1004	us	pmed	SLIP		Panc	1	1		B	162		
1004	us	pmed	STMO		Tank?	1	1		H	5		
1004	us	pmed	SWSG		?	1	1		BS	1		Burnt
1004	us	rom	B3		Bowl, flanged	1	1		R	8	Soot under rim	
1004	us	rom	RPOT			42	42		R;B;BS	1085		
1087	F37	rom	B12		Jar	1	1		BS	4		
1087	F37	rom	E1		Flagon	1	1		BS	2		
1087	F37	rom	G1		Jar	1	1		BS	3		
1088	F37	rom	C1		Beaker	1	1	Rouletting	BS	1		
1088	F37	rom	W1		Jar/flagon	1	1		BS	2		
1096	F45	rom	B1		Jar	1	1		BS	11		
1096	F45	rom	B3		?	1	1		BS	8		
1096	F45	rom	B7		Jar	1	1		BS	6	Sooted int	
1096	F45	rom	C3		Beaker	1	1		BS	6		
1096	F45	rom	E1		Jar	1	1		BS	1		
1096	F45	rom	S1		?	1	1		BS	1		
1097	sandy silt	ctp	PIPECLAY		Clay pipe	2	2	19th century bore	STEM	3		
1098	F46	ctp	PIPECLAY		Clay pipe	2	2	19th century bore	STEM	4		
1098	F46	ctp	PIPECLAY		Clay pipe	1	1	17th century bore	STEM	4		
1098	F46	ctp	PIPECLAY		Clay pipe	1	1	19th century bore; impressed decoration around rim	STEM	4		
1098	F46	med	HUM		Jug/jar	1	1		BS	7		
1107	F51	rom	W1		Jar	1	1		BS	19		
1112	F56	ascan	YORKA		Jar	1	1		BS	6	Sooted ext	
1130	F67	ctp	PIPECLAY		Clay pipe	3	2		STEM	3		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1249	F150	ascan	YORK A?		Jar	1	1		BS	29	Sooted ext	
1249	F150	rom	B3		Jar	1	1		BS	9	Sooted ext	
1249	F150	rom	B3		Jar	1	1		R	29	Sooted ext and rim	
1249	F150	rom	C1		Jar	1	1		BS	6		Abra
1249	F150	rom	G1		Jar	2	1		BS	26		
1249	F150	rom	S1		Dr33	1	1		R	3		Burnt
1249	F150	rom	S4R		Dechelette 72	1	1	Cut glass	BS	5		
1274	F158	rom	AP27-30		Amph	1	1		BS	34		
1153	us	emod	ENGS		Toilet	1	1		BS	5		
1153	us	med	BRAN		Jug	1	1		BS	19		
1153	us	med	HAM		Jug	1	1		BS	9		
1153	us	med	HUM		Jug/jar	2	2		BS	13		
1153	us	med	HUM		Jar	1	1		BS	7	White dep int; sooted int	
1153	us	rom	RPOT			12	10		R; BS	100		
1166	F86	emod	LPMLOC		Flp	1	1		R	24		
1166	F86	med	HUM		Jug	1	1		H	164		
1166	F86	rom	RPOT			1	1		R-B	52		
1172	F90	ascan	YORK A		Jar	1	1		BS	6		
1172	F90	med	BRAN		Jug	2	2		BS	29		
1172	F90	med	HAM		Jug	4	1		R;BS	67		
1172	F90	med	HUM		Jug	5	5		H;BS	189		
1172	F90	med	HUM		Jug/jar	1	1		BS	14		
1172	F90	pmed	RYEDALE		-	1	1	Cugl int and ext	BS	3		
1172	F90	rom	E1		Jar	1	1		B	5		
1172	F90	rom	G1		Jar	1	1		BS	3		
1172	F90	rom	RPOT			25	24		R;B;BS	476		Some abra
1172	F90	rom	S0		-	1	1		BS	1		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1172	F90	rom	W1		Flagon /jar	1	1		BS	2		
1173	F91	rom	AP25		Amph	1	1		BS	233		
1173	F91	rom	B3		Jar	2	2		B;BS	16	White dep int	
1173	F91	rom	B3		Jar	2	1		BS	36		
1173	F91	rom	B3		Jar	1	1		BS	2		
1173	F91	rom	B7		Jar	2	2		BS	8		
1173	F91	rom	B7		Jar	1	1		BS	7	Sooted int/ext	
1173	F91	rom	B7		Jar	1	1	Orange slip	BS	2		
1173	F91	rom	B7		Jar	1	1	Obtuse lattice	BS	5	Sooted ext	
1173	F91	rom	B7		Jar	1	1		BS	17	Sooted ext	
1173	F91	rom	C1		Beaker	2	2	Indented	BS	9		
1173	F91	rom	C1		Beaker	1	1		BS	12		Abra
1173	F91	rom	C24		Beaker	5	1	Indented	BS	13		
1173	F91	rom	C3		Beaker	2	1	Indented with added scales	BS	5		
1173	F91	rom	E7		Jar	1	1		BS	2		
1173	F91	rom	G3		Jar	2	2		BS	17		
1173	F91	rom	G3		Jar	1	1		R	15		
1173	F91	rom	G3		Jar	1	1		BS	15	Sooted ext	
1173	F91	rom	H1		Jar	1	1		BS	1	White dep int	
1173	F91	rom	H1		Jar	1	1		BS	1	Sooted ext	
1173	F91	rom	S2		Bowl	1	1		BS	8		
1173	F91	rom	S4		Bowl	2	2		BS	12		
1173	F91	rom	S4		Drag31	2	1		R	23		
1173	F91	rom	S4		?	1	1	Footring	B	10		
1177	F94	rom	C1		Beaker	1	1	Indented with added scales	BS	25		
1177	F94	rom	G1		Jar	1	1		BS	18	Sooted ext; white dep int	
1177	F94	rom	M14		Mort	1	1		BS	130		
1177	F94	rom	S4L	Forams	Bowl	1	1		B	33	Worn base of footring	
1177	F94	rom	S4L	Forams	Dr31	1	1		BS	19		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1177	F94	rom	S4R		Dechelette 72	1	1	Cut-glass	BS	3		
1177	F94	rom	S4T		Dr31	1	1		R	4		
1179	F96	rom	S1		?	1	1		BS	4		
1208	F90	med	HUM		Jar/jug	3	2		B;BS	71		
1208	F90	rom	B12		Jar	1	1		BS	8		
1208	F90	rom	B3		Dish, flanged	2	1		R	24		
1208	F90	rom	B3		Bowl	1	1		R	8		
1208	F90	rom	B7		Jar	2	2		BS	10	Sooted ext	
1208	F90	rom	B7		Jar	1	1		BS	3		
1208	F90	rom	B8		Jar	2	2		BS	13		
1208	F90	rom	C1		Beaker	3	1	Indented with added scales	BS	7		
1208	F90	rom	C1		Beaker	1	1	Rouletting	BS	1		
1208	F90	rom	E1		Jar/flagon	11	10		BS	86		
1208	F90	rom	E1		Jar	1	1	Sagging kt base so perhaps med?	B	41	Sooted ext;white depo int	
1208	F90	rom	F1		Jar	1	1		BS	5		
1208	F90	rom	G1		Dish, flanged	2	1		R;BS	23	Sooted int/ext	
1208	F90	rom	G1		Jar	1	1	Horiz grooves	BS	2	Sooted ext	
1208	F90	rom	G1?		?	1	1		BS	1		
1208	F90	rom	K1		Jar	1	1		BS	6		
1208	F90	rom	P8		Flagon?	2	1		BS	15		
1208	F90	rom	S2		Dr33	1	1		R	24		
1208	F90	rom	S2		Lud tx	1	1	Form id?	R	8	Rivet holes	
1208	F90	rom	S4		Curle 21	1	1	Form id?	BS	14		
1208	F90	rom	S4		Lud tg	1	1	Form id?	BS	23		
1208	F90	rom	W1		Jar /bowl	3	1		B;BS	53	Sooted ext	
1208	F90	rom	W1		Jar /flagon	2	1		BS	10		
1208	F90	rom	W1		Bowl	1	1	Overhanging rim	BS	21		
1211	F140	rom	AP25		Amph	1	1		BS	140		
1211	F140	rom	B3		Jar	20	1	Acute lattice	BS	101		
1211	F140	rom	B3		Jar	5	1	Obtuse lattice	B;BS	125		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1211	F140	rom	B3		Jar	2	2		R	54		
1211	F140	rom	B3		Jar	1	1		BS	12		
1211	F140	rom	B3		Jar	1	1	Acute lattice	BS	10		
1211	F140	rom	B7		Jar	1	1		BS	3		
1219	F142	emod	LPML OC	Or E1?	Flp	1	1		BS	3		
1219	F142	rom	B1		Jar	4	1		R;BS	21		
1219	F142	rom	B1		Bowl, flanged	1	1		R	16		
1219	F142	rom	B3		Jar	1	1		BS	6		
1219	F142	rom	B3		Jar	1	1	Horiz lines	BS	4		
1219	F142	rom	B3		Dish	1	1		R-B	47		
1219	F142	rom	C3		Beaker	1	1	Indented with added scales	BS	7		
1219	F142	rom	H1		Jar	2	1		BS	17	Sooted ext; thick white dep int	
1219	F142	rom	MRCA	Black sand; biotite	Amph	1	1		BS	3		
1219	F142	rom	P0		Flagon?	1	1		BS	5		
1219	F142	rom	S1		Dr 30	1	1		BS	12		
1219	F142	rom	S1		-	1	1		BS	3		
1225	F146	rom	B3		Bowl	1	1		R	7		
1225	F146	rom	C3		Beaker	1	1	Indented with added scales	BS	3		
1225	F146	rom	MRCA	Black sand	Amph	1	1		BS	156		Burnt
1225	F146	rom	S3A		Dish	1	1	Unusual form	R	10		
1225	F146	rom	S4		Mort	1	1	Mid 2nd or later	BS	9		
1277	F160	rom	E1		Jar	1	1		BS	1		
1278	F160	rom	AP25		Amph	1	1		BS	2		
1278	F160	rom	AP27-30		Amph	1	1		BS	16		
1278	F160	rom	AP45		Amph	1	1	Shoulder sherd	BS	14		
1278	F160	rom	B1		Bowl, flanged	1	1	Acute lattice	R	45		
1278	F160	rom	B12		Jar	1	1		BS	13		
1278	F160	rom	B12		Jar	1	1		BS	7		
1278	F160	rom	B3		Jar	3	3		BS	47		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1278	F160	rom	B7		Jar	1	1	Acute lattice	BS	3		
1278	F160	rom	C1		Jar	1	1		BS	5		Abra
1278	F160	rom	C3		Beaker	1	1		BS	2		
1278	F160	rom	C3		Beaker	1	1	Indented with horiz rouletting	BS	9		
1278	F160	rom	E1		Jar	18	1	Acute lattice	B;BS	596		
1278	F160	rom	E1		Jar	3	3		BS	14		
1278	F160	rom	G1		Jar	1	1		R	8		
1278	F160	rom	G1		Jar	1	1		BS	4		
1278	F160	rom	S1		Dr37	1	1	Dec	BS	9		
1278	F160	rom	S2		Curle 23	1	1		R	13	Sooted around edge of rim	
1278	F160	rom	S4		Dechelette 72?	4	1	Cut-glass	BS	15		
1278	F160	rom	S4		Bowl	2	1		BS	30	Worn footring	
1278	F160	rom	S4		Bowl	1	1		B	14		
1278	F160	rom	S4		Dr43	1	1		R	22		
1278	F160	rom	S4		-	1	1		BS	1		
1278	F160	rom	S4		Dechelette 72?	1	1	Closed form	BS	13		
1278	F160	rom	S4		-	1	1		BS	7		
1278	F160	rom	W1		?	1	1		BS	1		
1278	F160	rom	W1		Jar /flagon	1	1		BS	3		
1280	F160	rom	AP25		Amph	3	3		BS	144		
1280	F160	rom	B1		Jar	1	1	Acute lattice	BS	8		
1280	F160	rom	B12		Jar	1	1		BS	4		
1280	F160	rom	B3		Bowl/ dish	2	2		B	67		
1280	F160	rom	B3		Dish	1	1	Pie dish	R-B	52	Sooted ext;some int	
1280	F160	rom	B3		Jar	1	1		R	16		
1280	F160	rom	B7		Jar	1	1		BS	23		
1280	F160	rom	B8		Jar	1	1		BS	5	Sooted ext	
1280	F160	rom	C1		Beaker	1	1		BS	6		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1280	F160	rom	C1		Beaker	1	1	Funnel necked	R	2		
1280	F160	rom	E1		Jar	16	1	Burnished; same form as bb1	BS	218		
1280	F160	rom	E1		Jar	2	1		BS	12		
1280	F160	rom	E1		Bowl	1	1	Reeded rim	R	13		
1280	F160	rom	G1		Jar	1	1		BS	14	Sooted ext; white dep int	
1280	F160	rom	G1		Jar	1	1	Two horiz grooves	BS	12	White dep int	
1280	F160	rom	P0		Flagon /jar	2	2		B	21		
1280	F160	rom	S1		Drag37	1	1		BS	18		
1280	F160	rom	S4R		Dechelette 72	12	1	Cut-glass	BS	20		
1280	F160	rom	S4R		Dr33	1	1	Shl=1282	BS	12	Worn base and worn around inner base angle	
1281	F90	rom	AP25		Amph	1	1		BS	255		
1282	F160	rom	C3		Beaker	1	1	Barbotine dots	BS	7		
1282	F160	rom	G1		Lid	1	1		R	23		
1282	F160	rom	S4	Trier?	Dr31	1	1		R	18		
1282	F160	rom	S4	Trier?	Bowl	1	1		B	39		
1282	F160	rom	S4	Trier?	Dechelette 72	1	1	Cut-glass dec;not sv as 1293 which is v micaceous	BS	5		
1282	F160	rom	S4R		Dr33	1	1	Shl=1280	BS	80	Worn base and worn around inner base angle	
1284	F160	rom	C3		Beaker	2	1	Indented with added scales	BS	12		
1284	F160	rom	M26		Mort	1	1		B	166		
1284	F160	rom	S4T		Dr 31	1	1		R	7		
1293	F160	rom	B5		Jar	3	2		B;BS	86		
1293	F160	rom	B7		Jar	19	1	Obtuse lattice	BS	278	Sooted ext; white dep int	

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1293	F160	rom	B7		Jar	5	1	Obtuse lattice	R;BS	76		
1293	F160	rom	G1		Jar	2	1		R;BS	24		
1293	F160	rom	S2		Bowl	1	1		B	17	Worn base	
1293	F160	rom	S4R		Dechelette 72	4	1	Cut-glass dec	BS	6		
1295	F142	rom	AP25		Amph	1	1		BS	9		
1295	F142	rom	B3		Jar	3	2		BS	34		
1295	F142	rom	E9		Jar	1	1		28	28		
1295	F142	rom	G1		Jar	2	2		BS	30		
1295	F142	rom	P0		Flagon	1	1	Cup-mouthed; one handle	R	35		
1295	F142	rom	S1		Dr30	2	1		B	57		
1295	F142	rom	S1		-	1	1		BS	3		Vabr
1295	F142	rom	S1		-	1	1		BS	6		
1295	F142	rom	S1		-	1	1		BS	1		
1295	F142	rom	S2		Dr33	1	1		R	3		
1295	F142	rom	S2		Dr33	1	1		BS	15		
1295	F142	rom	S4		Dr37	2	2	Dec	BS	22		
1295	F142	rom	S4		Dr37	1	1		R	10		
1295	F142	rom	S4R		Dr31	3	1	Stamped "severianusf"	B	103		
1295	F142	rom	W1		Jar	1	1		R	11		
1319	F142	rom	B3		Dish	2	1		B	38		
1319	F142	rom	B3		Jar	1	1		BS	19		
1319	F142	rom	B3		Jar	1	1	Acute lattice	BS	83	White dep int	
1319	F142	rom	C3		Jar	1	1		BS	4		
1319	F142	rom	G1		Jar	8	1	Dalesware type rim	R	197	Sooted ext; white dep int	
1319	F142	rom	S4		Dr32	1	1	Orange slip	R	15		
1319	F142	rom	W1		Jar /flagon	1	1		BS	4		
1320	F142	rom	AP25		Amph	1	1		BS	56		
1320	F142	rom	B12		Dish	1	1		R	12		
1324		rom	E1		Jar	1	1		BS	1		
1324		rom	M3		Mort	1	1		BS	13	Int worn	
1328	F176	ascan	YORKA?		Jar	1	1		BS	16	Thick white dep int	

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1328	F176	rom	B1		Bowl, flanged	1	1	Acute lattice	R	24		
1328	F176	rom	B12		Jar	2	1		BS	3		
1328	F176	rom	B12		Platter	1	1		R	22		
1328	F176	rom	B3		Jar	6	6		R;B;BS	120		
1328	F176	rom	B3		Jar	1	1	Horiz lines	BS	3		
1328	F176	rom	B3		Jar	1	1		R	13	Sooted under rim	
1328	F176	rom	B3		Jar	1	1	Horiz groove; chipped into sub-circular shape	BS	6		
1328	F176	rom	B7		Jar	2	2		B;BS	14		
1328	F176	rom	C1		Beaker	2	1		BS	3		
1328	F176	rom	C24		Beaker	1	1	Horiz band rouletting	BS	1		
1328	F176	rom	E1		Jar	3	1		B;BS	104		
1328	F176	rom	E1		Jar/ flagon	1	1		BS	4		
1328	F176	rom	E1		Jar	1	1		BS	1	Sooted ext	
1328	F176	rom	G1		Jar	6	6		BS	58		
1328	F176	rom	G1		Jar	5	1		BS	45		
1328	F176	rom	G1		Jar	5	5		R;BS	40		
1328	F176	rom	G1		Jar	2	2		BS	29	White dep int	
1328	F176	rom	G1		Jar	1	1	Horiz band	BS	14		
1328	F176	rom	G18		Jar	1	1		BS	34	Sooted ext; thick white dep int	
1328	F176	rom	S1		-	1	1		BS	3		
1328	F176	rom	S1		Dr35/ dr36	1	1		BS	3		
1328	F176	rom	S1		-	1	1		R	1		
1328	F176	rom	S4		Dr33	2	1		R	36		
1328	F176	rom	S4	ID?	Jar	1	1	Dech 67/dech 72	BS	1		
1328	F176	rom	S4		Dish	1	1	Internal cordon at base angle	BS	6		
1328	F176	rom	W1		Jar /flagon	2	1		BS	10		
1328	F176	rom	W1		Jar	1	1	Frilled rim, similar to 3839 & 3840, monaghan	R	7		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1328	F176	rom	W1		Flagon	1	1	Cup mouthed	R	7		
1330	F176	rom	B3		Jar	1	1	Acute lattice	BS	22	Sooted int/ext	
1330	F176	rom	B3		Jar	1	1	Acute lattice	BS	6		
1330	F176	rom	S0		-	1	1	Dec	BS	1		
1332	F176	rom	B3		Bowl, flanged	2	2		R	33		
1332	F176	rom	B3		Bowl, flanged	2	1		R	50		
1332	F176	rom	B3		Bowl	1	1		B	12		
1332	F176	rom	C24		Beaker	1	1	Horiz rouletting	BS	1		
1332	F176	rom	K1		Jar	2	1		BS	13		
1332	F176	rom	S0		Dr33	1	1		BS	8	Worn on inside of base angle	Burnt
1332	F176	rom	W1		Flagon	1	1	Cup mouthed	R	5		
1333	F174	rom	AP25		Amph	1	1		BS	113		
1333	F174	rom	B1		Jar	1	1		BS	2		
1333	F174	rom	B12		Dish	4	1		R-B	95		
1333	F174	rom	B3		Jar	1	1		BS	14		
1333	F174	rom	B3		Jar	1	1	Acute lattice	BS	34		
1333	F174	rom	B3		Jar	1	1		B	14		
1333	F174	rom	C1		Beaker	2	2		BS	4		
1333	F174	rom	C1		Beaker	1	1	Vert barbotine trailing	BS	2		
1333	F174	rom	C1		Beaker	1	1		B	39		
1333	F174	rom	C24		Beaker	1	1	Indented	B	16		
1333	F174	rom	E1		Jar	1	1	Horiz grooves	BS	8		
1333	F174	rom	E1		Jar	1	1		B	115		
1333	F174	rom	G1		Jar	2	1		BS	22		
1333	F174	rom	G1		Jar, handled	1	1		R	27		
1333	F174	rom	S1		-	1	1		BS	2		
1333	F174	rom	S1		Bowl	1	1		B	22		
1333	F174	rom	S2		Cup	1	1	Partial stamp int	BS	4		
1333	F174	rom	S2		Dr37	1	1	Dec	BS	6		
1334	F174	rom	AP25		Amph	1	1		BS	23		
1334	F174	rom	B1		Dish	3	3		B	72		
1334	F174	rom	B3		Jar	1	1	Acute lattice	BS	9	Sooted ext	

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1334	F174	rom	C1		Beaker	1	1	Rouletting	BS	1		
1334	F174	rom	C3		Beaker	15	1	Indented	BS	84		
1334	F174	rom	C3		Beaker	11	1	Indented with added scales	BS	178		
1334	F174	rom	G1		Jar	1	1		BS	3	White dep int	
1334	F174	rom	H1		Jar	2	1		BS	64	Sooted ext; white dep int	
1337	F174	rom	AP17-19	Cadiz	Amph	2	1	C186	BS	177		
1337	F174	rom	B3		Bowl	3	1		R;B	111		
1337	F174	rom	B3		Jar	2	1	Acute lattice	BS	11		
1337	F174	rom	B3		Bowl, flanged	1	1		R	36		
1337	F174	rom	C1		Beaker	2	1	Funnel necked indented with added scales	R;BS	10		
1337	F174	rom	C1		Beaker	2	1	Funnel necked indented with added scales	BS	9		
1337	F174	rom	C1		Beaker	1	1		BS	2		
1337	F174	rom	C3		Beaker	8	1	Funnel necked indented with added scales	R;BS	160		
1337	F174	rom	C3		Beaker	6	1		BS	104		
1337	F174	rom	C3		Beaker	2	1	Indented	BS	14		
1337	F174	rom	C3		Beaker	1	1	Funnel necked indented	R	17		
1337	F174	rom	C3		Beaker	1	1	Indented with added scales	BS	2		
1337	F174	rom	E1		Facepot	1	1	Undulating sherd; nose?	BS	8		
1337	F174	rom	G1		Jar	14	1	Dalesware rim	R-B	455		
1337	F174	rom	G1		Jar	3	1	Dalesware rim	R;BS	70	Sooted ext; white dep int	
1337	F174	rom	G1		Jar	1	1	Horiz grooves	BS	9		
1337	F174	rom	H1		Jar	14	1	Dalesware rim	R;BS	181	Sooted ext; white dep int	
1337	F174	rom	H1		Jar	4	1	Dalesware rim	R;BS	288	Sooted ext; white dep int	

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1337	F174	rom	H1		Jar	3	1	Dalesware rim	R;BS	62	Sooted ext; white dep int	
1337	F174	rom	M14		Mort	1	1		B	60		
1337	F174	rom	S1		-	1	1		BS	1		
1337	F174	rom	S4		Curle 21	5	1		PROF	121	Int worn;footring worn	
1337	F174	rom	S4		Dr33	2	1		BS	94	Worn base, esp around base angle;footring worn	
1337	F174	rom	S4T		Dr31	1	1		R	15		
1338	F174	rom	B3		Jar	1	1		BS	9		
1338	F174	rom	E1		Jar	1	1	Thick-walled	BS	50		
1338	F174	rom	G1		Jar	9	1		B;BS	294	White dep int	
1338	F174	rom	H1		Jar	17	1		R;B;BS	356	Sooted ext; thick white dep int	
1338	F174	rom	S1		-	1	1		BS	1		
1339	F142	rom	B3		Jar	2	2		BS	10		
1339	F142	rom	B3		Jar	1	1	Acute lattice	BS	42		
1339	F142	rom	B5		Bowl /dish, flanged	2	1		R;B	57		
1339	F142	rom	B7		Jar	1	1		BS	9		
1339	F142	rom	C1		Jar	1	1		BS	4		
1339	F142	rom	C1		Beaker	1	1	Cornice rimmed	R	2		
1339	F142	rom	C24		Beaker	1	1	Rouletted horiz narrow bands	BS	6		
1339	F142	rom	E1		Jar	3	2		BS	31		
1339	F142	rom	E1		Headpot	1	1	Hair; wavy grooves	BS	21		
1339	F142	rom	G1		Jar	3	3		BS	26	Sooted ext; white dep int	
1339	F142	rom	G1		Jar	1	1		BS	12	White dep int	

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1339	F142	rom	S1		Dr37	3	3		BS	5		
1339	F142	rom	S1		Dr37	1	1		R	1		
1339	F142	rom	S1		Dr33	1	1		BS	5		
1339	F142	rom	S1		Dr37	1	1		B	74		
1339	F142	rom	S1		Counter	1	1	Ground to shape and most of slip removed	BS	3		
1382	F142	rom	B3		Jar	1	1		BS	1	White dep int	
1383	F142	rom	B3		Jar	1	1		BS	6		
1383	F142	rom	B7		Jar	1	1		BS	12		
1383	F142	rom	C1		Beaker	1	1		BS	1		
1383	F142	rom	C1		Beaker	1	1	Indented with added scales	BS	2		
1383	F142	rom	C1		Beaker	1	1		B	9		
1383	F142	rom	M3		Mort	1	1		BS	46		
1383	F142	rom	S1		Bowl	1	1	Partial stamp "...m"	BS	7		
1383	F142	rom	S4L	Foram s	Dr33	1	1		R	21		
1385	F142	rom	B3		Bowl, flanged	1	1		R	22		
1392	F196	rom	B3		Jar	1	1	Acute lattice	BS	11		
1392	F196	rom	E1		Jar	1	1		B	72		Abra
1392	F196	rom	E1		Jar	1	1		R	8		
1392	F196	rom	E1		Beaker	1	1		BS	1		
1392	F196	rom	G1		Jar	2	1		BS	13	Sooted ext	
1392	F196	rom	R2		Jar	1	1		BS	9		
1392	F196	rom	S1		Dr30	1	1		R	1		
1392	F196	rom	S2		Dr37	1	1	Dec	BS	7		
1392	F196	rom	S4	Calc matri x;s musc	Dr37	2	1	Dec	BS	7		
1392	F196	rom	S4		Dr37	1	1		R	3		
1392	F196	rom	W1		Flagon	1	1		BS	10		
1393	F207	rom	C1		Beaker	1	1		BS	1		
1394	F198	rom	B3		Jar	19	1	Orthogonal lattice with a lean to obtuse	R-B	687		
1394	F198	rom	B3		Jar	1	1		BS	22		
1394	F198	rom	B7		Dish	1	1		B	18		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1396	F200	rom	B1		Dish	1	1		R	17		
1396	F200	rom	G1		Jar	3	1		BS	31		
1412	F142	rom	B3		Jar	1	1	Acute lattice	BS	8	Sooted ext	
1412	F142	rom	C1		Beaker	2	1		B	7		
1412	F142	rom	G1		Jar	1	1		R	3	Sooted ext	
1412	F142	rom	G1		Jar	1	1	Dalesware rim	R	26	Sooted ext	
1412	F142	rom	S4?		-	1	1		BS	1		
1414	F142	rom	E1		Jar	2	1		BS	51		
1415	F201	rom	B3		Jar	10	1		B;BS	254		
1415	F201	rom	E1		Flagon /jar	1	1		BS	6		
1415	F201	rom	E1		Jar	1	1	Bb1 copy	R	39		
1415	F201	rom	G1		Beaker	1	1		B	21		
1417	F202	rom	E1		Jar	1	1		BS	37		
1422	F204	rom	F1		Jar	2	1		BS	2		
1430	F210	rom	B3		Jar	1	1	Horizontal rouletting	BS	12		
1430	F210	rom	E1		Flagon /jar	2	2		BS	7		
1430	F210	rom	E1		Jar	1	1		BS	7	Sooted ext	
1430	F210	rom	G8		Jar	1	1		BS	15		
1430	F210	rom	S1		-	1	1		BS	2		
1446	F214	rom	E1		Platter	1	1	Rings of base sherd	BS	2		
1446	F214	rom	S1		-	1	1		BS	1		
1460	F219	rom	E1		Jar/ flagon	1	1		BS	1		
1455	F110	rom	E1		Jar?	1	1		BS	3		
1455	F110	rom	P0		Flagon?	1	1		BS	3		
1429	F209	emod	LPML OC		Flp	2	1	Red slip ext	B	154		
1429	F209	med	HUM		Jug	4	3		B;BS	225		
1429	F209	rom	RPOT			1	1		BS	16		
1452	F215	ctp	PIPEC LAY		Claypipe	4	4	19th century bore	STEM	9		
1452	F215	emod	LPML OC		Flp	1	1		BS	6		
1452	F215	emod	REFR		Tpot	1	1		B	5		
1452	F215	pmed	KOLS		Dj	1	1		R	8		
1454	F215	med	HUM		Jug/jar	1	1		BS	1		

C no	F no	class	C name	SF	Form	No sh	No V	Description	Part	W	Use	Condition
1454	F215	rom	C3		Beaker	1	1		BS	2		
1454	F215	rom	G1		Jar	1	1		BS	7		
1454	F215	rom	MRCA	Black sand	Amph	1	1		BS	23		Abr
1454	F215	rom	S2		-	1	1		BS	3		
1454	F215	rom	S4?		-	1	1		BS	3		
1462	F215	rom	G1		Jar	1	1	Horizontal band of rouletting	BS	8		
1469	F223	rom	AP25		Amph	1	1		BS	69		
1469	F223	rom	B1		?	1	1		BS	4		
1469	F223	rom	B12		Jar	1	1		BS	6		
1469	F223	rom	B3		Jar	1	1		B	9		
1469	F223	rom	B4		Jar	1	1	Acute lattice	BS	22		
1469	F223	rom	B7		Jar	1	1		BS	4		
1469	F223	rom	C3		Beaker	1	1		R	9		
1469	F223	rom	F1		Jar	1	1		BS	3		
1469	F223	rom	M14		Mort	1	1		BS	6		
1469	F223	rom	P0		Flagon /jar	1	1		BS	3		
1469	F223	rom	P0		Flagon/ jar	1	1	Possible brown slip dec	BS	6		
1469	F223	rom	S4		Mort	1	1		BS	20	Int surface worn	
1469	F223	rom	S4L	Forams	-	1	1		BS	1		
1469	F223	rom	S4L	Forams	Dr33	1	1		BS	11		

APPENDIX F ROMAN GLASS ASSESSMENT

Dr Hugh Willmott, University of Sheffield

1.0 INTRODUCTION

Only two fragments of Roman glass were found at Mill Mount, York, neither is unusual and they add little to the overall interpretation of the site. The first, G1, is a large fragment of rim and most of the profile of the body from a drinking cup with a fire rounded rim. Such vessels are probably the most common drinking types to be found in the late 2nd and early 3rd century, and quite a few have been found in York, particularly on sites associated with the fortress (e.g. Cool 1995, 15574-5 nos 5983-8). The second fragment, G2, is a portion of a rim from a cylindrical or prismatic bottle, although its precise form cannot be fully reconstructed. These too are very common vessels of the mid-1st to late 2nd century, and are found on most sites of this period (Cottam and Price 1998, 191-202).

2.0 CATALOGUE

G1 F174 C1333 Find no 608. One fragment of fire-rounded rim and side from a cylindrical cup. Green tinted glass with medium weathering. Rim diameter 110mm. Late 2nd to mid-3rd century AD.

G2 F97 C1175 Find no 565. One fragment of folded-out and under rim from a cylindrical or prismatic bottle. Blue green glass with little weathering. Rim diameter 115mm. Mid 1st to late 2nd century.

References

Cool, H. 1995. 'Glass vessels from 9 Blake Street', in H. Cool, G. Lloyd-Morgan and A, Hooley *Finds from the Fortress, The Archaeology of York* 17/10 *The Small Finds* (York): 1559-88

Price, J. and Cottam, S. 1998. *Romano-British Glass Vessels: A Handbook*. CBA Practical Handbook in Archaeology 14 (York)

APPENDIX G SMALL FINDS AND CONSERVATION ASSESSMENT

Cecily Spall with Karen Barker

1.0 INTRODUCTION

A medium assemblage of ferrous and non-ferrous metalwork, and ivory, bone and stone small finds was recovered during archaeological excavation undertaken by Field Archaeology Specialists (FAS) Ltd at Mill Mount, York. The assemblage was submitted for x-radiography and assessment of condition and stability in accordance with guidelines set out in Managing Archaeological Projects (English Heritage 1991), and for identification and dating where possible. X-radiography and assessment was undertaken on behalf of FAS by Karen Barker Antiquities Conservation.

1.1 METHODOLOGY

The objects were x-rayed at 110kv for one minute and each plate was given a number from the series maintained by Antiquities Conservation; each finds bag was marked with the x-ray number. Find numbers were marked on each radiograph to allow comparison, and identification of the objects was undertaken by examining the x-ray plates on a light box corrected to 5000k, as well as visually examining the objects themselves.

The finds were also examined for stability and condition and were considered stable. The ironwork was generally poorly preserved with little core material visible in x-ray and covered in soil and corrosion products. This was particularly the case for the remains of footwear, which survive generally as a crust of fused corroded hobnails. An attempt was made to x-ray a soil block using a digital x-ray machine at the Department of Archaeology, University of York. A variety of calibration files were used as well as a range of kv settings, but definition of the footwear remained poor due to the overall preservation of the iron.

Selected non-ferrous objects of copper-alloy and pewter were covered with soil and powdery corrosion and were cleaned and consolidated to allow handling for further identification and photography; all coins were cleaned and consolidated for the purposes of identification and referred to the project numismatist. The non-ferrous objects were cleaned using a scalpel and glass bristle brush, and degreased using acetone. They were then vacuum impregnated with 3% benzotriazole corrosion inhibitor in industrial methylated spirits and lacquered with 1:4 incralac acrylic copolymer in toulene; future handling of the objects should be undertaken using latex gloves. Conservation records for these objects are held within the project archive.

1.2 STORAGE

With the exception of the hobnail shoes in soil blocks, all metalwork is stored in polythene ‘Stewart’ boxes with supportive ‘jiffy’ foam inserts or polyfoam supports as appropriate, and silica gel to provide an appropriate dry environment of less than 15% for ferrous material and less than 35% for non-ferrous material in accordance with First Aid for Finds (Watkinson and Neal 1998). The metalwork is stable under these conditions and requires no further treatment; no active bronze disease was identified during assessment. The jet object displays fine cracks, although these appear to be ancient and the objects is stable and packaged appropriately. It is recommended that the remains of hobnail boots are recorded prior to excavation from the soil blocks to allow packaging in appropriate archival conditions.

2.0 FERROUS OBJECTS

The assemblage was dominated by ferrous objects being nails and hobnails. Many examples of nails were recovered from inhumation burials and had been used in the construction of wooden coffins and hobnails. There are instances where mineral-preserved wood remains are visible on coffin nails. The direction of the grain is visible and it may be possible to identify species (most commonly oak was used for Roman coffins) by examination with a binocular microscope or using

scanning electron microscopy (SEM); referral to an appropriate specialist is recommended.

2.1 ROMAN COFFIN NAILS

A total of 147 iron nails were recovered from Period 1B inhumations burials and are summarised in Table 1. The nails are generally poorly preserved and fragmentary. The predominant form is a simple flat-headed nail, round in plan with a square-sectioned shank. Of note were the few coffin nails from Burial 13 which displayed mineral-preserved wood remains. In addition a total of 45 nails were recovered from Period 1A ditch F174 and from period 1C pit F176 and ditch F1 and appear to share the characteristics of the coffin nails.

A catalogue of these objects is recommended to contribute to a study of the construction of coffins used at the site.

Table 1 Summary of coffin nails by burial

Burial no	Quantity	Find nos
3	1	316
4	32	258 to 286, 297 to 299
6	19	291 to 296, 300 to 302, 304 to 307, 309 to 312, 314, 303 and 308
7	19	337 to 344, 354, 363, 364, 366, 369 to 372, 380, 352, 361, 362, 372
8	13	353, 355 to 359, 373, 374, 378, 381, 382, 384, 373 and 383
9	12	429 to 434, 436, 435, 437 to 440
10	1	408
11	27	391 to 396, 409, 410, 441 to 444, 446 to 450, 416, 421, 461
12	14	474, 476, 477 to 486, 475 and 487
13	7	542 to 545, 537 to 539
14	2	608 to 610

2.2 ROMAN FOOTWEAR

A total of eleven hobnail boots were represented in the assemblage. Two boots, or possibly two pairs, were represented by clusters of hobnails recovered from the area of the feet of Burials 6 and 8, while a single hobnail in Burial 11 may represent a symbolic inclusion. Other, largely complete, boots were found in Period 1A and 1C features, most notably nine boots were represented within ditch F174. A pair of leaf-shaped, heavily nailed boots recovered from this feature is of note, since singular finds are much more common, apart from pairs placed within graves themselves.

Hobnailing of footwear was introduced to Britain by the Romans and is thought to have died out soon after the early 5th century, although Early Anglo Saxon burials sometimes produce hobnails and some are now believed to be as late as the 7th century (Jonathan Scheschkewitz, *pers. comm.*). The practice of hobnailing footwear did not appear again until Mark Isambard Brunel (father of Isambard Kingdom) reintroduced boots for soldiers fighting in the Napoleonic wars in the early 19th century (Shopland 2005, 173).

Inclusion within Roman burials is commonplace and traditional interpretation of this practice suggested that it symbolised grave equipment for the long walk to the River Styx, although this is no longer favoured (Wise 1991, 257). The rite of inclusion in Roman burials later develops into the practice of simply scattering loose hobnails into the grave. Heavily nailed boots in some contexts are thought to have military significance (Barber and Bowsher 2000, 137), but can be associated with most members of Roman society and are indicative of a 3rd century date.

Hobnail boot 1

A partially preserved hobnail boot represented one half of a pair (with Hobnail boot 2) was block lifted from Period 1A ditch F174 (Find no 590). The object consists of a crust of corroded hobnails, which appears to betray a leaf-shaped form; inspection of a photograph of the boot *in situ* confirms this. In addition, one line of hobnails can be seen clearly on the x-ray, others are present but more corroded.

Hobnail boot 2

This boot was block lifted during excavation from Period 1A ditch F174 (Find no 589) and represent the other half of a pair of boots (*cf* Hobnail boot 1). The shoe is represented by a crust of corrosion products with few hobnails still individually identifiable, although the rough shape of the boot can still be discerned. The boot was clearly heavily nailed and is roughly leaf-shaped.

Hobnail boot 3

This boot was recovered from Period 1A ditch F174 (Find no 550) and is represented only by *c*.16 corroded hobnails, some corroded together in groups of up to three forming single lines. As such the boot would appear to have consisted of at least a single row of hobnails studding the outer edges of the sole.

Hobnail boot(s) 4

This boot was recovered from the area of the feet of Burial 6 and consists of 57 loose hobnails (Find nos 301, 303, 306 and 549). Inspection of a photograph of the hobnails *in situ* suggests that the hobnails are likely to represent a pair of boots although truncation of the grave had disturbed them. Several hobnails are corroded together in rows of up to five hobnails, some curved and belong to the toe or heel area. There are also clumps of nails suggesting the boots consisted of a single row of hobnails around the outer edge of the sole with internal arrangements of hobnails.

Hobnail boot 5

This boot was recovered from Period 1A ditch F174 and is represented by *c*.45 hobnails (Find no 548). Again, the hobnails appear to represent the remains of a boot with lines of hobnails although their arrangement cannot be determined.

Hobnail boot(s) 6

This boot is identified from a cluster of 11 hobnails and was recovered from the area of the feet of Burial 8 (Find no 373).

Hobnail boot 7

This boot was block lifted during excavation from Period 1A ditch F174 and is represented by clumps of corroded hobnails (Find no 592). Unfortunately, the iron is so poorly preserved it is difficult to ascertain the original arrangement of the nailing.

Hobnail boot 8

This boot was recovered from Period 1A ditch F174 and is represented by the remains of a heavily hobnailed boot (Find no 594). A row of hobnails along the outer edge of the sole is clearly visible in xray and is respected by an inner row as well as several other clusters and rows of nails.

Hobnail boot 9

This boot was block lifted during excavation from Period 1A ditch F174 (Find no 591) and is represented by two clusters of poorly preserved hobnails.

Hobnail boot 10

This boot was block lifted during excavation from Period 1A ditch F174 (Find no 593) and is represented by two rows of hobnails to either side of the outer edge of the sole as well as several rows and clumps of hobnails.

Hobnail boot 11

This boot was block lifted during excavation from Period 1A ditch F174 (Find no 596) and is represented by the outline of a possible leaf-shaped sole with an internal arrangement of nailing.

Stray hobnails

Several finds represented single or small groups of hobnails and derived principally from Period 1A ditch F174 (Find nos 499, 501, 516, 518 528 to 530) and period 1C pit F176 (Find no 513 and 517). A single hobnail was recovered from Burial 11 and may represent a symbolic inclusion rather than the presence of complete shoes.

2.3 ASSORTED IRONWORK

Medieval nails

An assemblage of 25 iron nails were recovered from Period 4 ditch F90 and may be roofing nails.

Garden fork

An iron garden fork was recovered from a Period 5 soil layer (Find no 308) and is certainly a Victorian object of no further analytical value and could be discarded.

Structural metalwork

A variety of modern structural metalwork was recovered from Period 5 contexts and is of no further analytical value and could be discarded.

3.0 NON-FERROUS OBJECTS

3.1 PERSONAL ITEMS

Tweezers

A pair of Roman copper-alloy tweezers was recovered from a Period 1C pit F169 (Find no 532, Plate 1). The object consists of a single cast piece of copper-alloy with looped head with two arms; the arms appear to have been twisted deliberately, although since Roman tweezers tended not to have slide recovered in a mis-shapen condition is commonplace. Roman tweezers do not exhibit changes through time that allow tight dating (Crummy 1983, 58) and the object is simply assigned as Roman.

Plate 1 Copper-alloy tweezers (Find no.532)

Spoon

A small round-bowled Roman copper-alloy spoon was recovered from a Period 1C pit F75 (Find no 386, Plate 2). The round-sectioned handle is complete and measures 40mm and the bowl is complete, but bent, with a diameter of 21mm. The form of the spoon can be assigned to Crummy Type 1 (1983 69, 2008) and is similar to examples from Colchester (*ibid*, Fig 73) and from Catterick (Mould 2002, 111; Fig. 283, 30). It has been suggested that these small spoons were for eating eggs or shellfish (Crummy 1983, 69).

Plate 2 Copper-alloy spoon (Find no.386)

Shoe buckle

A fragment of pewter shoe-buckle plate with remnant of iron buckle pin set into a hole drilled into the frame was recovered from a machining recovery context in Intervention 4 (Find no 568, Plate 3). This form of shoe buckle is dateable to *c*.1720 to *c*.1790 (Whitehead 1996, 104). The complete object is likely to have consisted of a square or sub-square buckle with rounded corners measuring 65mm x *c*.65mm.

Plate 3 Pewter shoe-buckle plate (Find no.568)

3.2 STRUCTURAL ITEMS

Studs

Two domed copper-alloy studs were recovered during excavation from a Period 5 pit and the backfill of Burial 4 (Find nos 496 and 533). These represent common finds on Roman sites.

4.0 BONE AND IVORY OBJECTS

Three objects made of osseous material were recovered during excavation and include an ivory and a bone dress or hair pin, and a composite wood and bone domino fastened with three bronze rivets. All objects are stable, but identification of the material is preliminary and the Roman objects should be referred to an appropriate specialist for further identification.

Bone pin

A simple undecorated bone pin was recovered from a Period 5 soil layer C1058 (Find no 573, Plate 4), although the piece is likely to be residual from Period 1, but is not diagnostic of date. The pin is incomplete but measures 79mm and flattens towards the head or terminal which is missing.

Plate 4 Bone pin (Find no.573)

Ivory hairpin

A well-preserved complete ivory hairpin was recovered from C1005 a levelling layer (Find no 574, Plate 5). The object measures 76mm in length and is decorated with four transverse grooves below a conical head and a circular-faceted tapering shank. This decoration is diagnostic of pins dated to *c*.50 to 200AD and can be classified according to Crummy Type 2 (1983, 21). Such objects are common grave goods and the pin may represent a disturbed grave inclusion.

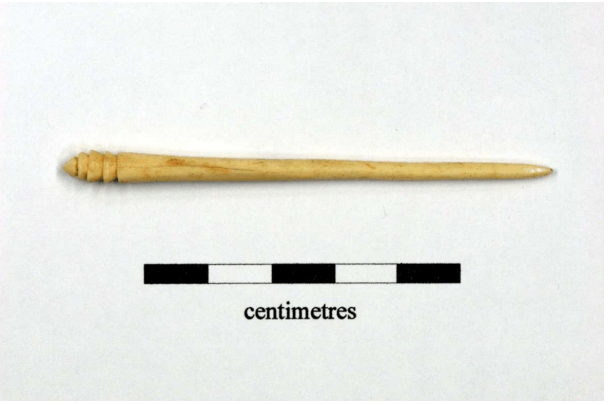

Plate 5 Ivory hairpin (Find no.574)

Domino

A composite bone and wood domino fastened with three bronze rivets was recovered from Period 1C F1 C1006 (Find no 572, Plate 6). The piece displays a single pip on and three pips arranged diagonally. The find must be intrusive, since the game of dominos was not introduced to Europe from China, where it originates, until the 18th century.

Plate 6 Domino (Find no.572)

5.0 STONE OBJECTS

Jet bracelet or armlet

Three fragments of jet bracelet or armlet were recovered from the backfill of a Period 1B grave F221 (Find no 597, Plate 7). Two fragments conjoin, while the third appears to be close to a break, but does not conjoin clearly. The armlet has an internal diameter of *c.*43mm (although would appear to be slightly sub-circular in form), with D-shaped section, and so may be deemed to have been for a child. At the point of a break at either end of the conjoining fragments, i.e. where the missing section of armlet would conjoin, the armlet appears to have a regular stepped form and it is possible that it was decorated with grooves and may be similar to an armlet recovered from Tanner Row, York, dateable to the early to mid-3rd century (Allason-Jones 1996, Cat. No 82). Roughouts for armlets have been recovered from Roman deposits in the city, which had a thriving jet industry, and the piece may be a product of a York workshop (RCHM 1962, 141-144; Allason-Jones, 11-14). Again, jet armlets are common finds in Roman graves and it seems possible that this object was originally deposited as grave jewellery.

Plate 7 Fragments of jet bracelet (Find no.597)

6.0 RECOMMENDATIONS FOR FURTHER ANALYSIS

The hobnailed boots should be illustrated where preservation allows prior to excavation from soil blocks and supportive packaging where appropriate. The mineral-preserved wood remains identified on a small sample of Roman coffin nails should be referred to a specialist for identification of species. The Roman bone and ivory pins should be referred to an appropriate specialist to confirm identification of the osseous material.

A catalogue of the Roman small finds should be produced top accompany the excavation account; that of the coffin nails will contribute to the analysis of coffin construction and form.

Modern metalwork is of no further analytical value and could be discarded.

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APPENDIX H COIN CATALOGUE

Craig Barclay, University of Durham Museums

A total of four coins were submitted for identification.

Find No 467 Intervention 6, F212 C1466

AR denarius; Septimius Severus; AD 193-211
Rev) Jupiter stg. (?)
Worn

Find No 496 Intervention 7, F215 C1452

AE radiate; Victorinus/ Tetricus I; c. AD 268-73
Rev) Pax stg. (?)
Worn

Find No 3 Intervention 2, F1 C1006

AE nummus; Constantine I; Trier; c. AD 320
Rev) BEATA TRAN-QVILLITAS around altar inscribed VO/TIS/[ ]
Mintmark: •PTR•
Unworn

Find No 2 Intervention 2, F8 C1063

AE 4; Theodora (posthumous issue); AD 337-48
Rev) PIETAS ROMANA
Unworn

APPENDIX I ZOOARCHAEOLOGICAL ASSESSMENT

Cluny Johnstone

1.0 INTRODUCTION

Several small archaeological interventions were carried out at Mill Mount, Tadcaster Road, York (NGR: SE 5945 5102) by Field Archaeology Specialists during 2004. A total of four boxes (each of approximately 24 litres) of hand-collected bone were recovered from deposits of Roman to modern date. This material was examined for its bioarchaeological potential and the results are given in this report.

Most of the material derives from contexts of Roman date, from the 2nd to 3rd centuries AD. Much of the 2nd century (Phase 1A) activity on the site consisted of cremation burials and the ploughsoil into which they were cut. The later 2nd to 3rd century activity (Phase 1B) consisted of a number of inhumation burials aligned along a boundary ditch. The 3rd century (Phase 1C) activity on the site inclined more towards domestic activity and included some indications of relatively high status occupation.

Later activity on the site was limited but consisted of one possible early medieval feature (Phase 2: 9th – 10th centuries AD), a substantial medieval ditch (Phase 3: 12th –16th centuries AD), and post-medieval levelling and accumulation of soils (Phase 4: 16th – 18th centuries AD). Unstratified and modern (post 18th century) material was not included in the analysis presented in this report.

2.0 METHODOLOGY

All material recovered from dated contexts (except modern) was assessed for this report. Data was recorded electronically into a series of tables in purpose-built database using *Paradox* software. For each context with more than ten fragments, subjective records were made of the state of preservation, colour of fragments and appearance of broken surfaces ('angularity'). In addition, semi-quantitative records were made of fragment size, and of burning, butchery, fresh breakage and dog gnawing.

Where possible, fragments were identified to species or species group, using the reference collection in the Department of Archaeology, University of York. Fragments not identified to species were grouped into categories: large mammal (assumed to be cattle, equid or large cervid), medium-sized mammal 1 (assumed to be caprine, pig or small cervid), medium-sized mammal 2 (from an animal of dog/cat/hare size) and unidentified.

Records were made for each species, by context, of the total number of fragments, the number of mandibles and isolated lower teeth (of use in providing ageing or sexing information), the number of unfused or juvenile fragments (of use in providing age at death information) and the number of measurable fragments. In addition to fragment counts, total weights were recorded for all identifiable species and unidentified categories.

3.0 RESULTS

Vertebrate material was recovered from a total of 89 contexts, of which 12 were of modern date or were unstratified. This left a total of 77 bone bearing contexts that were recorded for this assessment. Table 1 shows the number of fragments by species for each phase. Table 2 shows the total number of fragments and weights, number of measurable bones, number of mandibles and isolated teeth and numbers of unfused/juvenile bones for the Phase 1 and Phase 3 material.

A total of 1864 fragments (weighing 24.9 kg) were recorded for this assessment of which 394 (12.2 kg) were identified to species. Most fragments (1158) were attributed to Phase 1, only 7 fragments were recovered from Phase 2 contexts and the

rest were split between Phases 3 and 4 (see Table 1).

It was noted that the preservation of material from Mill Mount was very uniform across the whole assemblage and through all phases represented. For the contexts for which detailed preservation records were made (those containing more than 10 fragments), almost all the material was regarded as having fair preservation. A few contexts were recorded as variable, containing some poorly preserved fragments in addition to those with fair preservation. The colour of the material was similarly uniform, with most contexts containing bones that were fawn in colour. A few contexts were recorded as light brown and a few containing a mixture of both colours. The least consistent measure of preservation was angularity (appearance of surfaces broken prior to or during burial). About half the contexts contained fragments with consistently spiky (almost unworn) edges, whilst the remaining half contained a mixture of spiky and slightly battered fragments. The degree of wear on the fragments was not great in any of these cases.

The degree of fragmentation of the bones was about average for a non-waterlogged assemblage. Over half the fragments in most of the contexts were between 5 and 20 cm in greatest dimension and less than a third of contexts had more than half the fragments less than 5 cm. However, fragments greater than 20 cm were scarce suggesting that most bones were fragmented to some degree. It was noted that most of the <5 cm fragments were small pieces of larger bones, rather than bones from small animals. Given the reasonable overall preservation of the assemblage, this suggests that recovery bias may be an issue on this site.

Some form of bone modification was noted in most contexts, with all contexts containing fragments with at least some evidence of fresh breakage (edges broken during or post-excavation), and in a few contexts a considerable proportion of the fragments were affected. The proportion of fragments showing evidence of butchery was also high with over 20% of fragments affected in many contexts. Dog gnawing was noted on a few fragments (0-10%) in about two-thirds of contexts. Evidence of burning was scarce throughout the assemblage, with only a few affected fragments present in a limited number of contexts.

Phase 1 animal remains

The majority of vertebrate remains were recovered from Phase 1 and the details are given in Table 2. Of the total of 1158 fragments recorded, only 246 were identified to species or species group. The most frequently occurring species (in terms of numbers of fragments) were cattle (97 fragments), sheep/goat (53 fragments) and pig (17 fragments). No attempt was made for this assessment to identify the sheep/goat group further, however, at a later stage it would be possible to do this for some of the elements present. Similarly, most equid fragments were not identified to species, except loose teeth, which all showed horse characteristics. It is interesting to note that there were actually more equid and horse fragments combined than pig, indicating both a high proportion of equid bones and a low proportion of pig bones for an assemblage of this date. Most of the equid fragments were from distal limb elements and in particular phalanges. The relatively large number of cat bones is artificially inflated as all bones were from a single context and almost certainly represent a single individual. A few dog bones were also recovered from the site, all from medium-sized (collie/labrador size) individuals.

A reasonable number of fragments (48) were potentially measurable (Table 2). There were proportionately more measurable sheep/goat fragments than cattle, an indication that the degree of fragmentation and particularly evidence of butchery was higher on the cattle bones. A few mandibles and isolated teeth that could give age at death information were recovered, almost all from the major domestic mammals. Only a very small number (10) of bones were from sub-adult or juvenile individuals.

Amongst the bird remains, most fragments were from chicken bones. One of the more unusual species present on the site was the single raven bone. It is quite common to find raven bones from medieval urban deposits but much less common in Roman contexts. This bone was also of interest as showed evidence for cat gnawing, perhaps indicating a cat-scavenged carcass. Single bones identified as possibly goose and gull were also recovered.

Other animal remains present on the site were oyster and limpet shells. The single limpet shell was relatively well preserved with the edges intact. Apart from one valve, most of the oyster shell was much more poorly preserved with most fragments consisting of flakes rather than whole valves. A few examples were noted with barnacle encrustations on the valves.

Phase 2 animal remains

Only 7 bone fragments were recovered from contexts belonging to this phase and all were unidentified. A mixture of large and medium-sized mammal and unidentified fragments were recorded.

Phase 3 animal remains

A total of 421 fragments were recorded from Phase 3, of which 96 were identified to species or species group. Most of these (55 fragments) were from cattle, and the second most abundant species was sheep/goat (24 fragments). Other mammalian species present included pig (6 fragments), ?fallow deer and equid (Table 3). The presence of possible fallow deer fragments is of note, as these would normally be associated with high status, rural sites. However, the elements present (phalanges) could indicate bones contained within a skin brought onto site.

The proportion of measurable bones varied considerably with species with only 2 cattle fragments being measurable, but 14 sheep/goat bones. This was quite a different pattern to that seen in the Phase 1 material. The proportion of unfused and juvenile bones was also different to Phase 1 with a high proportion of the pig bones falling into this category. It is interesting to note that there were no mandibles or isolated teeth that could give age at death information from this phase.

Phase 4 animal remains

A total of 278 fragments were recovered from Phase 4 contexts, of which 52 were identifiable to species or species group. As in the preceding phase most bones were from the major domesticates, with a few from other species (Table 1). The deer fragments were sections of antler, both with sawn surfaces, indicative of antler working waste. There were too few fragments from this phase to analyse the breakdown of 'useful' bones in table form, so a summary is given here. There were 10 measurable bones (6 sheep/goat, 2 dog and 2 chicken), 4 unfused bones (2 cattle, 2 pig), 5 mandibles (3 cattle, 2 sheep/goat) and a single sheep/goat isolated tooth.

4.0 DISCUSSION

Deposits from Mill Mount yielded a relatively small assemblage of bone and a small quantity of marine shells. The largest and potentially most interesting quantity of material was recovered from the Roman levels of Phase 1, which are reasonably tightly dated. A smaller amount of bone was recovered from medieval (Phase 3) layers, but the broad dating of this material means that, unless the dating can be refined, it is of lesser interpretative value.

The uniformity of the preservation throughout the assemblage and the angularity of the broken surfaces suggest that most of the fragments have not been moved around much and hence damaged from the original site of deposition. The small proportion of fragments showing evidence of dog gnawing is also an indication that material was buried fairly rapidly following deposition and not disturbed too much at a later date. In Phases 2 and 4 where there is little evidence of occupation or other activity at the site, the small quantities of material recovered could be residual from earlier phases but there is not definitive evidence of this.

Most of the discussion given here will focus on the Phase 1 material as this is considered to have the most potential for further study. The species present are those that would be expected from a Roman assemblage, with the possible exception of the raven bone discussed in the results section above. The most prevalent remains are those of food species, as is usual on most archaeological sites. Initial observations of the butchery patterns suggest that they follow the standard Roman practice seen in many assemblages (e.g. Maltby 1989; Dobney *et al.* 1996; Johnstone and Albarella 2002).

A reasonable quantity of measurable bones were noted from this period, and whilst there would not be sufficient for meaningful analysis of this assemblage alone, the tight dating of these deposits would mean that a useful archive could be made for inclusion in future synthetic studies of animal bones from Roman York. Similarly, there would not be sufficient numbers of mandibles and isolated teeth giving age at death information for a meaningful analysis to be undertaken on this material, but the information should be recorded in archive form.

The paucity of unfused and juvenile bones from this assemblage is intriguing. Whilst this is unlikely to be due to taphonomic factors, as the overall bone preservation was good enough to expect them to have survived, the paucity of sub-adult bones may be partly due to recovery bias. However, because of the relatively small size of the assemblage it is not possible to rule out the option that there is a real lack of young animals represented on the site and therefore could indicate that this was a consumer rather than producer site.

In Phase 3 more unfused and juvenile bones were recorded although the overall numbers were small. Many of those recorded were young pig bones, and this is an echo of the pattern seen in many medieval urban assemblages. However, there were no mandibles and isolated teeth recovered from this phase. As this is unlikely to be caused by taphonomic factors (teeth being more robust than bones), it could be a factor of the small assemblage size or could be indicative of a consumer site, where primary butchery took place elsewhere. The presence of young pigs does not rule this out as pigs were often kept in back yards, whereas meat from other animals was brought in.

5.0 RECOMMENDATIONS

It is recommended that a limited quantity of further work be carried out on the assemblage from Mill Mount. This would entail the construction an archive of more detailed information about the material from Phase 1 including measurements and age at death data. If the dating of the Phase 3 deposits can be refined a similar archive should also be made of bones from that phase. There would be no advantage in further analysis of the data once an archive has been made, as the assemblage is too small.

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Table 1 Numbers of vertebrate fragments recorded by phase

Species		**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Dog	*Canis familiaris*	4			2	6
Cat	*Felis sylvestris*	15				15
Equid	*Equus* sp.	15		1		16
Horse	*Equus caballus*	3			1	4
Pig	*Sus scrofa*	17		6	6	29
Deer	Cervid				2	2
?Fallow deer	c.f. *Dama dama*			2		2
Cattle	*Bos taurus*	97		55	23	175
Sheep/goat	Caprine	53		24	12	89
?Goose	*Anser* sp.	1				1
?Gull	*Larus* sp.	1				1
Chicken	*Gallus gallus*	4		2	2	8
Raven	*Corvus corax*	1				1
Bird		4				4
Limpet	*Patella vulgata*	1				1
Oyster	*Ostrea edulis*	30		6	4	40
Subtotal		***246***		***96***	***52***	***394***
Large mammal		550	3	241	96	890
MM1		233	2	78	47	360
MM2		1			4	5
Unidentified		128	2	6	79	215
Subtotal		***912***	***7***	***325***	***226***	***1470***
Total		**1158**	**7**	**421**	**278**	**1864**

* - medium-sized mammal

Table 2 Total numbers of fragments and weights from Phase 1

Species		**No. measurable**	**No. of mandibles**	**No. of teeth**	**No. unfused/ juvenile**	**Total no. fragments**	**Weight (g)**
Dog	*Canis familiaris*	2	1	-	-	4	72.4
Cat	*Felis sylvestris*	-	-	-	-	15	14.5
Equid	*Equus* sp.	7	-	-	-	15	1034.9
Horse	*Equus caballus*	2	-	1	-	3	201.3
Pig	*Sus scrofa*	3	2	3	2	17	101.4
Cattle	*Bos taurus*	18	3	6	3	97	4316.6
Sheep/goat	Caprine	13	9	9	4	53	545.8
?Goose	*Anser* sp.	-	-	-	-	1	2.6

Species		No. measurable	No. of mandibles	No. of teeth	No. unfused/ juvenile	Total no. fragments	Weight (g)
?Gull	*Larus* sp.	-	-	-	-	1	1.3
Chicken	*Gallus gallus*	2	-	-	1	4	6.6
Raven	*Corvus corax*	1	-	-	-	1	3.4
Bird		-	-	-	-	4	5.9
Limpet	*Patella vulgata*	-	-	-	-	1	1.7
Oyster	*Ostrea edulis*	-	-	-	-	30	161
Subtotal		***48***	***15***	***19***	***10***	***246***	***6469.4***
Large mammal		-	-	-	-	550	5526
MM1*		-	-	-	-	233	626.9
MM2*		-	-	-	-	1	4.5
Unidentified		-	-	-	-	128	129.4
Subtotal		***0***	***0***	***0***	***0***	***912***	***6286.8***
Total		**48**	**15**	**19**	**10**	**1158**	**12756.2**

Table 3 Total numbers of fragments and weights from Phase 1

Species		No. measurable	No. unfused/ juvenile	Total no. fragments	Weight (g)
Equid	*Equus* sp.	1	-	1	51
Pig	*Sus scrofa*	-	5	6	121.2
?Fallow deer	c.f. *Dama dama*	-	-	2	4.8
Cattle	*Bos taurus*	2	2	55	1947.9
Sheep/goat	Caprine	14	-	24	252.7
Chicken	*Gallus gallus*	2	-	2	3.7
Oyster	*Ostrea edulis*	-	-	6	15.8
Subtotal		***19***	***7***	***96***	***2397.1***
Large mammal		-	-	241	3894.3
MM1		-	-	78	234.2
Unidentified		-	-	6	11.3
Subtotal		***0***	***0***	***325***	***4139.8***
Total		**19**	**7**	**421**	**6536.9**

APPENDIX J SOILS ASSESSMENT

Field Archaeology Specialists Ltd

1.0 INTRODUCTION

A scheme of excavation was undertaken by Field Archaeology Specialists (FAS) Ltd at Mill Mount, York in association with Mike Griffiths and Associates Ltd on behalf of Shepherd Homes Ltd. Fieldwork was undertaken between May 2004 and April 2005. The activity at the site has been assigned to five principal periods and a total of 270 litres of sediment were recovered during excavation. The majority of material derived from pit and ditch features of Period 1 date, although a hearth was sampled and submitted for assessment; during assessment it became clear the feature was of Victorian (Period 5) date (identified by the presence of Victorian glass). During initial assessment a sample of each deposit was processed through flotation in a Sirāf (water recycling) tank to determine preservation; this was deemed to be low for all sampled contexts and the remaining sediment was processed simply in order to recover animal bone and finds.

1.1 AIMS AND OBJECTIVES

The aim of the excavation was to record and characterise archaeological deposits for the purpose of data retrieval in advance of their destruction through development. The aim of the sediment analysis was twofold: to maximise the amount of data recovered from the excavated sediments and, to establish the character of the archaeological sediments in terms of the presence and preservation of uncharred and charred organic material such as plants and insects that could be further studied toward the elucidation of past diet, living conditions and building materials as well as the reconstruction of site formation processes and waste disposal management.

1.2 METHODOLOGY

Sirāf flotation was used for samples with potential for waterlogged preservation of organic materials, for fine charred organic matter (such as carbonised seeds and grains) or for animal bone and finds. Samples were washed down within a 1mm mesh held inside a water recycling flotation (Sirāf) tank with the light fraction washed over into a 250 micron mesh. Both the heavy and light fractions consisted either of mixed medium gravel, sometimes containing charred organics, animal bone and finds, or fine silt respectively and were dried prior to sorting.

Dried residues from flotation were screened using 2mm and 5mm test sieves, producing three fractions (<2mm, 2-5mm and >5mm), the two densest fractions were sorted exhaustively for cultural material and the remaining residue discarded; the finest fraction was retained but not sorted. Notes were made on the abundance (rare, occasional, common or very common) and retention (discarded, sampled or kept) of these objects.

2.0 ASSESSMENT

The proportions of dry residue components from flotation can be found in Table 1.

F47 Period 5 bonfire

C1100

A 10L sample was processed; the light fraction yielded a quantity of charcoal and the dense residue consisted of coarse gravel, charcoal lumps and modern glass.

F160 Period 1C pit

C1278

A 20L sample was processed; the light fraction consisted of fine silt while the dense residue consisted of mostly fine gravel, with occasional ceramic and animal bone, some calcined.

C1282
A 20L sample was processed; the light fraction was sterile, while the dense residue consisted mainly of coarse gravel and medium pebbles with occasional pottery and bone and rare inclusions of charcoal.

C1293
A 20L sample was processed; the light residue consisted largely of fine silt with some charcoal flecks; the dense residue was mainly large and coarse gravel and pebbles, with a few small fragments of ceramic and occasional fragments of animal bone.

F174 Period 1A ditch
C1219
A 20L sample was processed. The light fraction produced a large amount of charcoal and charred organics. The dense residue consisted of gravel and pebbles with some charcoal, ceramic and animal bone. Small fragments of iron were also present.

C1295
A 20L sample was processed. The light fraction consisted mainly of fine silt, with some charcoal. The dense residue was made largely of coarse gravel with occasional animal bone and some pottery. An iron object was also recovered.

C1323
A 20L sample was processed. The light fraction consisted mainly of fine silt, with a small amount of charcoal. The dense residue of pebbles and gravels contained animal bone and ceramic.

C1332
A 20L sample was processed. The light fraction was largely fine silt, with some charcoal. The dense residue consisted of gravel and pebbles with some animal bone and pottery.

C1333
A 20L sample was processed. The light fraction was sterile. A dense residue of gravel and cobbles contained some ceramic, lumps of limestone, occasional animal bone and some fragments of charcoal. One fragment of glass was also recovered. A small amount of magnetic material was present, although appears to represent decomposition of iron objects rather than industrial residues.

C1334
A 20L sample was processed. The light fraction contained some charcoal flecks. The dense residue consisted of coarse and fine gravel with some pebbles included fragments of animal bone, with some ceramic. Iron fragments were also recovered; a small amount of magnetic material was present, although appears to represent decomposition of iron objects rather than industrial residues.

C1337
A 20L sample was processed. The light fraction consisted of mainly fine silt with a small amount of charcoal. The dense residue consisted of coarse gravel with some larger pebbles and contained ceramic and animal bone.

C1383
A 20L sample was processed. The light fraction consisted largely of fine silt with some charcoal. The dense residue of coarse gravel with some small cobbles contained Roman ceramic and occasional animal bone. A small amount of metal fragments were also recovered.

F176 Period 1C pit

C1328

A 20L sample was processed. The light fraction was largely fine silt with some small flecks of charcoal. The dense residue consisted of fine gravel with some medium pebbles. Animal bone was occasional and pottery was found rarely.

F198 Period 1B cremation

C1427

A 20L sample was processed. The light fraction was sterile; the dense residue consisted of coarse gravel with a fair amount of calcined bone and some ceramic fragments.

Table 1 Summary of material recovered during assessment

FNo	CNo	Fr'n	glass	pottery	metal (fe)	bone	cr bone	shell	charcoal	ch organic	slag/ham
47	1100	>5	o						c		
47	1100	2to5	r								
174	1219	>5		o	r	o			r		
174	1219	2to5		r		o			o		
160	1278	>5	r	o		o					
160	1278	2to5		o		o				r	
160	1282	>5		o		o			r		
160	1282	2to5		r		o					
160	1293	>5		r		o					
160	1293	2to5		r		o					
174	1295	>5		r	o	o					
174	1295	2to5		r		o					
174	1323	>5		o		o					
174	1323	2to5		r		o					
176	1328	>5		r		o					
176	1328	2to5		o		o					
174	1332	>5		o		o					
174	1332	2to5				r					
174	1333	>5		o		o					
174	1333	2to5		o		o		r	r	r	r
174	1334	>5		o	r	o					r
174	1334	2to5		o		o					c
174	1337	>5		r		o			r		
174	1337	2to5		r		o					
174	1383	>5		o		o				r	
174	1383	2to5		r	r	o				o	r
198	1427	>5		r			c				

FNo	CNo	Fr'n	glass	pottery	metal (fe)	bone	cr bone	shell	charcoal	ch organic	slag/ham
198	1427	2to5		r		c					

3.0 RECOMMENDATIONS FOR FURTHER ANALYSIS

Assessment determined the potential of the samples to be extremely low and these have been fully processed and the residues sorted. Further identification of the charcoal and possible charred organics from Period 1 ditch fills F174 could be considered.

APPENDIX K CERAMIC BUILDING MATERIAL ASSESSMENT

Cecily Spall

1.0 INTRODUCTION

A medium assemblage (*c*.29.2kg) of ceramic building material (CBM) was submitted for assessment. The assemblage was recovered during a scheme of archaeological excavation, undertaken by Field Archaeology Specialists Ltd, at Mill Mount, York. Material dating from the Roman to modern period was identified.

2.0 ASSESSMENT PROCEDURE

The assemblage was recorded using a system based on that used by the Museum of London and was undertaken in accordance with the draft Minimum Standards for Recovery, Curation and Publication for Ceramic Building Material issued by the Archaeological Ceramic Building Materials Group (ACBMG 2002).

Each assemblage of CBM was scanned for information about form and date, as well as features of note such as stamps, glazes or imprints. Marks from manufacture were recorded such as signature marks and over- or under-firing. For the purposes of assessment no disposal strategy was implemented, but is recommended along with a catalogue of the Roman and medieval assemblages.

3.0 ASSESSMENT

A summary of the date and form of material identified within features and context can be found in Table 1.

3.1 ROMAN MATERIAL

Roman CBM was common in the assemblage and included several assemblages of likely Roman date, although residual material is also present within later assemblages.

3.1.1 Brick

Roman brick fragments were most common, although some could derive from tegulae, but no distinguishing features were present. Of note was a brick, or possible tegula fragment with a finger-executed signature mark - a common find in York.

3.1.2 Roof tile

Several fragments could be securely identified as tegulae and several intact flange forms were present; several examples of imbrices were also identified within the assemblage.

3.1.3 *Opus signinum*

In addition, two fragments of *opus signinum* were recovered from deposits of Roman date.

3.1.4 Hypocaust brick

Two fragments of Roman brick recovered from the backfill of a Period 1B grave were sooted and burnt and may derive from use in a hypocaust system.

3.1.4 Assessment

Unfortunately, no Roman CBM was diagnostic of date and the entire assemblage must be broadly dated to the 1st to 4th century. The presence of *opus signinum* and hypocuast brick might be indicative of a high-status building, although this is likely to reflect the source of the CBM rather than the presence of a building in the vicinity.

3.2 MEDIEVAL MATERIAL

The medieval material was confined mainly to Period 4 feature ditch F90, which yielded an assemblage weighing nearly 7kg. The entire medieval assemblage consisted of the typical York plain and peg roof tile forms, rare brick, one wall tile fragment and two fragments of glazed floor tile.

3.2.1 Peg and plain tiles

The assemblage was dominated by plain tile fragments which are allocated 'plain' due to the absence of suspensory form evidence, and which are broadly dateable to the late 12th to 16th century. Square-peg tiles were present in the assemblage suggesting that the tiles allocated as plain were actually peg-, not nib-, tiles. By far the majority of roof tile fragments were recovered from Period 4 ditch F90. They were consistently small and fragmentary, but not abraded, and appeared to have been crushed deliberately, possibly for reuse as hardcore.

3.2.2 Brick

Medieval brick was rare in the assemblage, but was generally indicative of a date after the 14th century. A single example of a wall tile was identified, but was recovered residually from a Period 5 pit F215. This form is used to infill timber framing, although clearly a single residual example from the site is not indicative of such a building at the site.

3.2.3 Floor tile

Two small fragments of very abraded late medieval floor tile were identified in the assemblage. Traces of dark brown and light greenish-yellow glaze were preserved on the examples, both of which had bevelled edges. Such tiles are normally dated to the 14th to 16th century, but given the condition of the tiles, their find contexts are likely to belong to the later part of this date bracket.

3.2.4 Assessment

The assemblage is generally indicative of a late medieval date suggested by the presence of brick and monochrome glazed floor tiles. While the roof tile is not indicative of a close date bracket, the fabrics gave the appearance of coarse, ill-sorted fabric, which is normally indicative of a late medieval date in the city.

3.3 POST-MEDIEVAL

A small assemblage of post-medieval material was identified during assessment represented by rare examples of possible pantile and plain or peg roof tile fragments in fabrics indicative of later manufacture.

3.4 MODERN MATERIAL

Modern material was rare in the assemblage and was confined to examples of salt-glazed pipe, which date from the mid-18th century, and unglazed, possibly machine-extruded pipe and brick indicative of a mid-19th century onwards. A moulded brick was also identified in the assemblage and is likely to have been used in a decorative scheme.

Table 1 Summary of assemblage by form and date

Fno	Cno	Forms	Date
-	1000	Post-medieval and medieval plain roof tile fragments	17th+
-	1002	Machine-made brick	mid-19+
-	1003	Roman brick and imbrices, medieval plan roof tile	14th+
-	1004	Roman brick and tegulae, post-medieval pantile	17th+
-	1081	Roman brick and tegulae	1st to 4th
-	1143	Post-medieval and medieval plain roof tile	17th+
-	1153	Medieval plain roof tile	14th+

Fno	Cno	Forms	Date
-	1324	Roman brick	
1	1006	Roman brick	1st to 4th
	1073	Roman brick, imbrices and daub	
8	1076	Roman brick	1st to 4th
	1063	Roman brick	
	1094	Roman brick and *opus signinum*	
14	1025	daub, post-medieval and medieval plain roof tile, moulded decorative brick	mid-19th+
16	1027	*Opus signinum*	1st to 4th
	1121	Roman brick	
36	1084	Medieval plain roof tile	14th+
37	1087	Roman brick	1st to 4th
47	1100	Roman brick, brown glazed floor tile	14th+
48	1116	Roman brick	1st to 4th
51	1107	pale greenish-yellow glazed floor tile, Roman brick and medieval plain roof tile	14th+
54	1110	Medieval plain tile and brick	14th+
56	1112	Roman brick	1st to 4th
59	1118	?Medieval plain tile	14th+
60	1119	Roman brick	1st to 4th
66	1129	Roman brick	1st to 4th
67	1130	Roman brick	1st to 4th
68	1131	salt-glazed and unglazed pipe	mid-19th+
74	1144	Roman brick	1st to 4th
75	1145	Roman brick	1st to 4th
80	1178	Medieval plain tile and Roman brick	14th+
87	1168	Medieval plain roof tile	14th+
89	1203	Medieval plain roof tile and Roman brick	14th+
90	1172	Medieval plain and peg roof tile, brick, Roman brick, tegulae and imbrices	14th+
	1208	Medieval plain roof tile, brick and Roman brick	
91	1173	Tegula flange	1st to 4th
97	1175	Roman brick	1st to 4th
120	1244	Medieval plain roof tile and Roman brick	14th+
147	1299	Roman brick	1st to 4th
146	1225	Roman brick	1st to 4th
160	1249	Roman brick and tegulae	1st to 4th
	1277	Roman brick	
	1278	Roman brick	
	1280	Roman brick and imbrices	
	1282	Roman imbrices	
167	1296	Roman brick	1st to 4th
169	1300	Roman brick	1st to 4th
174	1333	Roman brick, burnt brick/daub	1st to 4th
176	1328	Medieval plain roof tile and Roman brick	14th+
190	1397	Roman brick	1st to 4th
196	1392	Roman brick	1st to 4th

Fno	Cno	Forms	Date
209	1429	Roman brick	1st to 4th
213	1443	Post-medieval plain roof tile	17th+
221	1469	?hypocaust brick	1st to 4th
215	1454	Post-medieval and medieval brick, medieval plain rooftile and Roman brick	17th+

5.0 RECOMMENDATIONS

A full catalogue is recommended for the stratified Roman and medieval material. This will produce an archive capable of integration within a city-wide study of the use of CBM during the Roman and late medieval periods and allow an appropriate disposal strategy to be implemented. The unstratified and residual Roman and medieval material has been examined and has little further analytical potential and could be discarded, likewise the post-medieval material.

6.0 ARCHIVE

The assemblage should be retained until full analysis and cataloguing has been undertaken. A copy of this report will be deposited with the site archive and a copy will be held by Field Archaeology Specialists.

References

ACBMG, 2002. *Minimum Standards for Recovery, Curation and Publication of Ceramic Building Material* (Unpublished draft)

APPENDIX L OSTEOLOGICAL ANALYSIS

Malin Holst

1.0 INTRODUCTION

In May 2005, York Osteoarchaeology Ltd was commissioned by Field Archaeology Specialists Ltd to carry out the osteological analysis of thirteen skeletons, two cremation burials and twenty-three disarticulated human bone assemblages. The skeletal remains had been excavated in autumn 2004 during an archaeological excavation at Mill Mount, York (NGR SE 5945 5102) in advance of a housing development.

The site is located beside a known Roman road within the vicinity of a Roman roadside cemetery. All the burials recovered are thought to date to the Roman period. It is believed that the burials date to the second or third century AD (Garner-Lahire, *pers. comm.*).

The skeletons had been interred in coffins, as suggested by ferrous nails and coffins stains. One of the graves contained a double burial, holding both an adult (1087) and the remains of a neonate on the adult's feet (1093). The other skeletons were buried in single graves in supine and extended positions, with the exception of Skeleton 1060, which was interred in a prone position (Table 1). All the skeletons lay with their heads to the west or northwest apart from Skeleton 1091, which lay with the head to the southeast.

Table 1 Summary of archaeological information of complete skeletons

Skeleton No	Feature	Area	Position	Orientation	Date
1012	4	2	Supine extended	West to east	Roman, 2nd to 3rd century
1032	19	2	Supine extended	West to east	Roman, 2nd to 3rd century
1060	29	2	Prone extended	Northwest to southeast	Roman, 2nd to 3rd century
1062	30	2	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1087	37	2	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1093	37	3	Crouched	Northwest to southeast	Roman, 2nd to 3rd century
1091	38	2	Supine extended	Southeast to northwest	Roman, 2nd to 3rd century
1117	48	2	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1210	139	4	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1215	141	2	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1297	167	2	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1441	212	6	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1472	224	8	Supine extended	Northwest to southeast	Roman, 2nd to 3rd century
1394	198	4	Cremation burial	Urned	Roman, 2nd century
1471	160	4	Cremation burial	Urned	Roman, 2nd century

A number of animal bone fragments were found amongst the skeletal remains (with Skeletons 1032, 1060, 1091, 1093) and are thought to have been residual.

Both cremation burials had been buried in urns. Burial 1394 was found in a small grave pit, while the urn and cremated bone of Burial 1471 were found to be re-deposited in a Roman pit (F160), which also contained unburnt human bone.

Disarticulated bone was recovered from twenty-six different features or layers. Upon analysis, it was found that three of these consisted entirely of animal bone and these assemblages were therefore not included in the analysis. The disarticulated human bone was recovered from a variety of layers and features, dating from the Roman period to the modern day (Appendix A).

A further burial, which was found in a stone sarcophagus and had been buried under a thick layer of gypsum, was also found on the site. The burial has not yet been excavated and is therefore not included in the analysis.

1.1 AIMS AND OBJECTIVES

The aim of the skeletal analysis was to determine the age, sex and stature of the skeletons, as well as to record and diagnose any skeletal manifestations of disease and trauma. It was aimed to calculate the minimum number of individuals buried at the site from the inhumed and disarticulated remains.

Initially, the assessment aimed to identify whether all cremated human bone recovered from the burial was human. The skeletal assessment then aimed to determine age and sex, as well as any manifestations of disease from which the individuals may have suffered. Additionally, information was sought regarding the cremation techniques.

1.2 METHODOLOGY

The skeletons and disarticulated remains were analysed in detail, assessing the preservation and completeness, calculating the minimum number of individuals present as well as determining the age, sex and stature of the individuals (Appendix A). All pathological lesions were recorded and described.

The cremated bone was first analysed to determine whether it was human or non-human. The human bone was subsequently sieved through a stack of sieves, with 10mm, 5mm and 2mm mesh sizes. The bone recovered from each sieve was weighed and sorted into identifiable and non-identifiable bone. The identifiable bone was divided into five categories: skull, axial (excluding the skull), upper limb, lower limb and long bone (unidentifiable as to the limb). All identifiable groups of bone were weighed and described in detail.

2.0 OSTEOLOGICAL ANALYSIS

Osteological analysis is concerned with the determination of the identity of a skeleton, by estimating its age, sex and stature. Robusticity and non-metric traits can provide further information on the appearance and familial affinities of the individual studied. This information is essential in order to determine the prevalence of disease types and age-related changes. It is crucial for identifying gender dimorphism in occupation, lifestyle and diet, as well as the role of different age groups in society.

2.1 PRESERVATION

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human skeletal remains is assessed subjectively, depending upon the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion and very few or no breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

Five of the skeletons (38.5%) were well-preserved (Table 2). They had suffered from few post-mortem breaks and little surface erosion. A further five skeletons were in a moderate condition, with moderate surface erosion and bone

fragmentation. Three skeletons were in a poor condition (23%); they had suffered from considerable erosion and fragmentation. The causes for the poor preservation could not always be established; however, in the majority of cases later features cut the grave, which may have contributed to the deterioration of the skeletons.

Table 2 Summary of osteological and palaeopathological results

Skeleton	Preservation	Completeness	Age in years	Sex	Stature	Pathology
1012	Good	0.5	46+	Male	172.8cm	DJD in spine and hips, Schmorl's nodes, osteoarthritis in right elbow, right 1st metacarpal, spine, *enthesopathies*
1032	Moderate	0.6	36+	Male	168.3cm	*Cribra orbitalia*, sinusistis
1060	Good	0.5	38508	-	-	*Cribra orbitalia*
1062	Good	0.8	26-35	Male?	159.3cm	Bone excavations, periostitis of skull
1087	Good	0.75	26-35	Male?	169.3cm	Schmorl's nodes; osteochondritis dissecans in first metatarsals, fractured 2nd right rib, DJD in ribs and spine, periostitis of tibiae, bone excavations
1093	Good	0.4	0-2 months	-	-	-
1091	Poor	0.6	41974	-	-	-
1117	Poor	0.45	41913	-	-	-
1210	Moderate	0.65	0-2 months	-	-	-
1215	Poor	0.5	20+	Female?	167.7cm	-
1297	Moderate	0.8	36-45	Female	162.6cm	Schmorl's nodes, DJD in spine, bone excavations, bifid sternum, *arachnoid granulations*
1441	Moderate	0.75	46+	Male	171.4cm	Spondylolysis, periostitis of tibiae, osteoarthritis in left 1st metatarsal, DJD in elbow, first metacarpals, hips
1472	Moderate	0.75	36-45	Male	170.5cm	Osteitis and periostitis of left tibia, DJD in spine, fused vertebrae, Schmorl's nodes, *enthesopathies*, *cribra orbitalia*

The completeness of the skeletons also varied considerably. The majority of skeletons were 50% or more complete, although the whole skeleton had not survived in any of the burials (see Table 2). The absence of some of the bone from all the graves can also be attributed to intercutting features, which truncated the burials.

The disarticulated remains were generally well-preserved. The assemblage consisted mostly of long bone and skull fragments, as well as occasional axial bones (Appendix A).

Preservation of the two cremated bone assemblages was good, with slight fragmentation and no bone surface or edge erosion (Table 3). Little warping and bone cracking, which occurs commonly during the cremation process, was evident.

Table 3 Summary of the cremated assemblage preservation

Burial No	Feature	Feature Type	Urned?	Inclusions	Bone State	Preservation	Age	Sex	Weight (g)
1394	198	Grave pit	Yes	Charcoal	White to mid grey	Good	Adult	-	18.7g

Burial No	Feature	Feature Type	Urned?	Inclusions	Bone State	Preservation	Age	Sex	Weight (g)
1471	160	Pit	Yes	-	White to mid grey	Good	Juvenile, 7-8 years	-	159.7g

The fragment size of cremated bone is frequently attributed to post-cremation processes. This is because skeletal elements retrieved from modern crematoria tend to be comparatively large before being ground down for scattering or deposition in the urn. Bone is also prone to fragmentation if it is moved while still hot (McKinley 1994, 340).

The majority of bone was derived from the 10mm sieve in both burials (Table 4). Only a small proportion (3%) of bone fragments from Burial 1394 were 5mm in size. However, 47% of bone from Burial 1471 was in the 5mm sieve category or smaller.

Table 4 Summary of cremated bone fragment size

Burial No	10mm (g)	10mm (%)	5mm (g)	5mm (%)	2mm (g)	2mm (%)	Residue	Weight (g)
1394	18.1	97	0.6	3	0	0	0	18.7
1471	84.4	53	70	44	5.1	3	0.2	159.7

The quantity of cremated bone recovered from Burial 1394 weighed 18.7g and from Burial 1471 weighed 159.7g, with a mean of 89.2g. This is considerably less than that produced by modern crematoria, which tends to range from 1000.5g to 2422.5g with an average of 1625.9g (McKinley 1993). Wahl (1982, 25) found that archaeologically recovered remains of cremated adults tend to weigh less (between 250g and 2500g), as a result of the commonly practised custom of selecting only some of the cremated bone from the pyre for inclusion in the burial, thereby representing a symbolic, or token, interment. The burials from Mill Mount produced less than 10% of the quantity of bone expected to remain following burning.

The cremated bone was moderately well-burnt, causing the partial loss of the organic portion of the bone and producing a white to mid grey colour throughout the assemblage. According to McKinley (1989), the body requires a minimum temperature of 500° Celsius over seven to eight hours to achieve complete calcination of the bone.

It was possible to identify most skeletal elements (Table 5). A total of 89% of the bone from Burial 1394 and 93% of Burial 1471 could be identified. The majority of identifiable skeletal elements in the former burial were lower limb fragments, while Burial 1471 contained mostly skull fragments.

Table 5 Summary of identifiable elements in the cremation burial

Burial No	Skull (g)	Skull (%)	Axial (g)	Axial (%)	UL (g)	UL (%)	LL (g)	LL (%)	UIL (g)	UIL (%)	Total ID (g)	Total ID (%)	Total UID (g)	Total UID (%)
1394	2.5	15	2	12	0	0	12.1	73	0	0	16.6	89	2.1	11
1471	44.6	32	9.6	6.5	31.2	21	29	19.5	31.4	21	148.8	93	38605	7

2.2 MINIMUM NUMBER OF INDIVIDUALS

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure in osteological reports on inhumations in order to establish how many individuals are represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements recovered. The largest number of these is then taken

as the MNI. The MNI is likely to be lower than the actual number of skeletons which would have been interred on the site, but represents the minimum number of individuals which can be scientifically proven to be present.

Using the inhumation burials and unburnt disarticulated bone to calculate the MNI, it was found that at least nineteen individuals were represented. A MNI of six adult males, two adult females, two adults of unknown sex, two adolescents, four juveniles and three neonates were present at the site. The bones most commonly found were the left temporals (ear bones) in adults and adolescents, the right proximal humerus for the juveniles and the left proximal ulna and femur for neonates. One of the juveniles was aged around twelve to eighteen months, two juveniles were aged between ten and eleven years and a further juvenile was aged between five and seven years.

It is not possible to calculate the MNI for cremation burials, because only a token selection of bone from the pyre tends to be buried. Double burials can be identified only if skeletal elements are duplicated, or if skeletons of different ages are represented in one burial. In this instance, double burials could not be identified.

2.3 ASSESSMENT OF AGE

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual. Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years), mature adult (ma; 46+) to adult (an individual whose age could not be determined more accurately as over the age of seventeen).

Age estimation of the adult skeletons was based on as many criteria as possible. These suggested that two of the males were young middle adults (Skeletons 1062 and 1087), a further male was an old middle adult (Skeleton 1472) and two men were aged 46 years or older (Skeletons 1012 and 1441), although Skeleton 1012 was probably much older, around 60 years of age (see Table 2). Skeleton 1297, a female, was aged between 36 and 45 years.

Skeleton 1032 was aged 36 years or older. Age determination had to rely on dental wear in this case, but this was found to be unreliable in this population, usually producing a much younger age than the other ageing characteristics. It is possible that these individuals did not eat a particularly gritty diet. Similarly, only the skeletal fusion could be used to determine the age of female Skeleton 1215, suggesting that she was aged at least twenty years, but may have been much older.

Dental development, bone fusion and long bone length suggested that Skeleton 1060 was a juvenile, aged between five and six years. All ageing criteria of this individual corresponded, suggesting that the child had not suffered delayed growth as a result of disease or malnutrition. The age of neonate Skeletons 1093 and 1210 (0-2 months) and adolescent Skeleton 1091 (12-14 years) was determined using the same criteria. In the case of juvenile Skeleton 1117, poor bone preservation meant that few ageing criteria survived, so the age was loosely determined to between ten and fourteen years.

The cremated individuals included an adult whose age could not be more accurately determined (1394) and a seven to eight year old juvenile (1471). The age of the juvenile was determined using the dental development of the single surviving tooth root.

It was not possible to establish age in the majority of disarticulated bone fragments. However, in some cases it was possible to determine age, namely in a juvenile tooth crown (C1003), a juvenile mandible (C1025), a juvenile humerus (C1452), an adolescent tibial shaft (C1004), an adolescent maxilla (C1095), one young middle adult pelvis (C1000), an old middle adult male mandible (C1337) and neonatal remains (C1392 and C1426) (Appendix A).

2.4 SEX DETERMINATION

Sex determination was carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood.

On the basis of the hip and skull characteristics, Skeletons 1012, 1032, 1441 and 1472 were male and Skeleton 1297 was a female (see Table 1). Sex determination was less conclusive in Skeletons 1062 and 1087, both of whom were thought to be probable males on the basis of the cranial sexing characteristics, although the measurements were inconclusive. Similarly, the sex of probable female Skeleton 1215 was only based on one eroded sexing characteristic of the hip and again joint measurements proved to be inconclusive.

It was not possible to determine sex in the immature individuals or in the cremated bone assemblages.

Sex could be established in a number of disarticulated remains (Appendix A). A pelvis fragment from C1000 derived from a female, while leg and arm bone fragments from C1025, skull fragments from C1334 and C1337, and a femoral bone fragment from C1429 belonged to males.

2.5 METRIC ANALYSIS

Stature depends on two main factors, heredity and environment. However, stature can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present. The bone is measured on an osteometric board, and stature is then calculated using a regression formula developed upon individuals of known stature.

In this instance, it was possible to assess stature in all of the adult skeletons (see Table 2). The women were between 162.6cm and 167.7cm tall (see Table 2), with a mean of 165.2cm. This is taller than the Roman mean stature for females (157.4cm) calculated by Caffell (1997), but is within her Roman stature range, which runs from 131.2cm to 172.5cm.

The six males were between 159.3cm and 172.8cm tall (see Table 2), with a mean of 168.6cm. This corresponds with the stature calculated for Roman males (169.0cm) by Caffell (1997) and the individual heights also fit within the Roman male stature range, which runs from 155.7cm to 181.3.cm.

Both the male and female mean stature corresponded closely with that calculated for Roman skeletons recovered from another Roman site in York, 41, Piccadilly (Holst *et al* 1998).

Leg measurements were obtained from the femora and tibiae and used to calculate robusticity indices. The *platymeria* index is a method of calculating the shape and robusticity of the femoral shaft. The femora of Skeletons 1012, 1062 and 1297 were *platymeric* (broad and flat), while the femora of Skeletons 1032, 1441 and 1472 were *eurymeric* (more rounded).

The *platycnemia* index of the tibiae was calculated in order to establish the degree of tibial shaft flatness. The tibial shafts of Skeletons 1032, 1062, 1087, 1297 and 1472 were *eurycnemic* (of average dimensions), while the left tibial shafts of Skeleton 1441 were flatter (*platycnemic*).

Measurements of the arm bones could not detect any clear evidence for left or right-handedness, although this may be partly due to the fragmentary nature of many of the bones, which did not permit thorough comparisons of the measurements.

It was not possible to measure the crania with the exception of that of Skeleton 1472, because severe fragmentation meant that the skulls were too incomplete. This individual's skull was of average dimensions.

Cremated bone shrinks at an inconsistent rate (up to 15%) during the cremation process and it was therefore not possible to measure any of the bones from the two cremation burials.

2.6 NON-METRIC TRAITS

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978).

A total of thirty cranial (skull) and thirty post-cranial (bones of the body and limbs) non-metric traits were selected from the osteological literature (Buikstra and Ubelaker 1994, Finnegan 1978, Berry and Berry 1967) and recorded. The disarticulated bones were also scanned for non-metric traits.

The majority of non-metric traits were observed on the skull. These were anomalies that would not have affected the individual. Cranial traits are more likely to be genetic in origin than those noted on the remaining part of the skeleton, which can often be affected by mechanical stress.

Cranial non-metric traits observed included *mastoid foramen extrasutural* in Skeletons 1062, 1087, 1297 and 1472. A further common trait was *absent zygomaticofacial foramen* (a missing small hole in one of the facial bones), noted in Skeletons 1032, 1060, 1062, 1087 and 1441, as well as bridging of supraorbital notch (a separate foramen above the eye orbit) in Skeletons 1032, 1087 and 1297. Less common cranial non-metric traits included *parietal foramen* (a small hole at the top of the skull) in Skeleton 1297, *ossicles in the lambdoid suture* (an additional bone in the suture at the back of the head) in Skeleton 1472, double anterior *condylar* canal (an additional foramen) in Skeleton 1091 and *accessory supraorbital foramen* (a foramen above the eye orbit) in Skeleton 1032. These minor anomalies were probably genetic in origin.

Common post-cranial traits included *acetabular notches* (a small depression in the hip joint) in Skeletons 1012 and 1297. *Poirier's facets* (extensions of the proximal femoral joint) were also noted in two skeletons (Skeletons 1012 and 1441). Additional facets on the ankle bones (*double inferior talar facets, double anterior calcaneal facets*) and an extension of the back of one of the ankle bones (*os trigonum*) were widespread and were noted in Skeletons 1032, 1087, 1297 and 1472.

Other post-cranial traits observed included *peroneal tubercles* (articular facets) on the calcanei (ankle bones) of Skeletons 1062 and 1087. Additionally, *lateral tibial squatting facets* were noted on the distal tibiae of Skeletons 1032 and 1297. These facets are thought to be caused by habitual squatting, and may therefore be activity-related. None of these traits would have caused any symptoms.

Skeleton 1297 was found to have *exostoses in trochanteric fossa* (bone projections at the femoral neck), indicative of mechanical stress on the *obturator externus* muscle, which laterally rotates the thigh and may therefore by activity-related (Stone and Stone 1990, 159). Another activity-related non-metric trait was *hypotrochanteric fosse* (depressed areas at the back of the femora) at the attachments of the *gluteus maximus* bottom muscle of Skeleton 1297. The depressed areas are thought to reflect strain on the muscle.

Non-metric traits were not observed in the disarticulated or cremated remains, in one of the neonates (Skeleton 1210) or the most poorly preserved individuals (Skeletons 1117 and 1215).

The presence of shared non-metric traits between many of the skeletons may indicate that these individuals were related.

2.7 CONCLUSION

Osteological analysis of the skeletal remains established that this was a mixed cemetery, including individuals of all age groups and both sexes. The individuals from Mill Mount were of average build and size. The presence of mutual non-metric traits suggests that these individuals may have been blood-related.

3.0 PATHOLOGICAL ANALYSIS

Pathological conditions (disease) can manifest themselves on the skeleton, especially when these are chronic conditions or the result of trauma to the bone. The bone elements to which muscles attach can also provide information on muscle trauma and excessive use of muscles.

3.1 CONGENITAL ANOMALIES

Heredity and environment can predispose an individual to congenital anomalies. Congenital malformations are commonly observed in archaeological populations. Most congenital conditions observed in skeletons are simple anomalies, which do not affect the person exhibiting the defect. One of these was noted in the sternum of the old middle adult female (Skeleton 1297), characterised by separation of the lower part of the sternum. This anomaly is relatively unusual and would have had little effect on the individual.

3.2 INFECTION

Evidence for infection was observed in Skeletons 1032, 1062, 1087, 1441 and 1472 (see Table 1). In all individuals with the exception of Skeletons 1032 and 1062, the infection was characterised by superficial inflammatory lesions on the surfaces of the tibiae (Plate 1); tibiae are the most likely bones to show evidence for inflammation because they are more vulnerable to knocks than other parts of the body. The type of skeletal lesion (lamellar bone) on the skeletons' shin bone suggested that the inflammation was receding.

Plate 1 Skeleton 1472, striated lamellar bone and raised osteitis (arrow)

Inflammatory lesions on human bones can be indicative of infectious diseases, such as leprosy and syphilis, and of non-specific localised infection, such as varicose veins, leg ulcers or trauma to the shins. However, the lesions only form in the bone if the inflammation is chronic and long-standing (Roberts and Manchester 1995, 125). Evidence for infection was common before the introduction of antibiotics and is therefore frequently observed in populations derived from archaeological contexts.

In the case of male Skeleton 1472, the inflammatory lesions only affected the left tibia and were associated with osteitis. Osteitis is an infection of the compact bone and can be observed in the form of swelling on the outer and inner bone surface (Plate 1). This, together with the fact that the infection was unilateral suggests that it was more severe in this individual. The infection may have been caused by soft tissue injuries, with bacteria entering the skin, or haematomas (blood clots) forming beneath the skin, which may have provided a breeding ground for bacteria (Dandy and Edwards 1998, 305).

Tibiae with inflammatory lesions were also identified in the disarticulated bone assemblage, including right tibiae from C1000, C1004 and C1429 (Appendix A). The periosteal inflammation of a right tibia from disarticulated assemblage C1000 was also associated with osteitis.

Skeleton 1062, a middle-aged male adult, showed evidence for mild inflammatory lesions in the form of porosity on the outer part of the skull. This is indicative of a mild scalp inflammation, the cause of which could not be determined.

Male Skeleton 1032 had suffered from chronic sinusitis, which was manifested in the form of new bone formation in the right maxillary sinus. Sinusitis is a good indicator of endemic respiratory stress (viruses or pollution), as it is the body's first response against airborne particles and pathogens (Merret and Pfeiffer 2000).

3.3 METABOLIC CONDITIONS

Skeletons 1032, 1060 and 1472 suffered from fine pitting of the eye orbits, termed *cribra orbitalia* (see Table 1). A disarticulated orbit from modern pit F14 also showed evidence for *cribra orbitalia*. The lesions were only observed in the right orbits. The condition tends to develop during childhood and often recedes during adolescence or early adulthood. It is thought to be related to iron deficiency anaemia, which was one of the most common metabolic conditions in the past. Symptoms of iron deficiency anaemia include gastro-intestinal disturbance, shortness of breath, fatigue, pallor and palpitations (Roberts and Manchester 1995, 167).

The causes of iron deficiency anaemia are complex, as factors affecting the development of anaemia include environment, hygiene, and diet (Stuart-Macadam 1992, 160). All of these factors can affect the pathogen load (bacteria) in a population, which often contributes to a high prevalence of iron deficiency (*ibid*). In single individuals, other causes of iron deficiency include severe blood loss following injury and destruction of red blood cells (Kent 1992, 2), cancer and parasitic gut infection (Roberts and Manchester 1995, 166).

The lesions were very mild in juvenile Skeleton 1060 and male Skeleton 1472. They were much more severe and were concentrated in a circular area in male Skeleton 1032 (Plate 2). The crude prevalence rate (15.4%) of individuals suffering from *cribra orbitalia* at Mill Mount was higher than the Roman average (8.05%), as well as the prevalence rate by orbit, which was 21.4% in the Mill Mount population compared with the Roman average of 16.9% (Roberts and Cox 2003, 141).

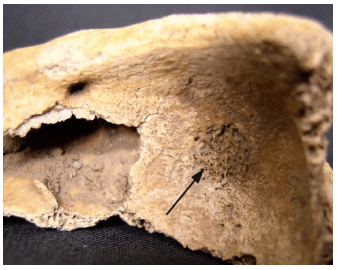

Plate 2 Skeleton 1032 with circular *cribra orbitalia* pitting in the left eye orbit

3.4 DEGENERATIVE JOINT DISEASE

The term joint disease encompasses a large number of conditions with different causes, which all affect the articular joints of the skeleton. Factors influencing joint disease include physical activity, occupation, workload and advancing age, which manifest as degenerative joint disease and osteoarthritis. Alternatively, joint changes may have inflammatory causes in the *spondyloarthropathies*, such as sceptic or rheumatoid arthritis. Different joint diseases affect the articular joints in a different way, and it is the type of lesion, together with the distribution of skeletal manifestations, which determines the diagnosis.

3.4.1 DJD

The most common type of joint disease observed tends to be degenerative joint disease (DJD). DJD is characterised by both bone formation (osteophytes) and bone resorption (porosity) at and around the articular surfaces of the joints, which can cause great discomfort and disability (Rogers 2001).

All the adults with preserved spines suffered from vertebral DJD (Skeletons 1012, 1087, 1297, 1441 and 1472). The lack of vertebrae in Skeletons 1032, 1062 and 1215 meant that the spines of these adults could not be studied for pathology. The lesions were relatively mild in the majority of skeletons, with the exception of the two mature adults, where they were moderate to considerable (Plate 3). However, in Skeleton 1472, an old middle adult male, the osteophytes on the lower thoracic vertebrae were so severe that the vertebrae fused along the spinous processes and vertebral bodies, with a flowing 'candle wax' appearance. The spaces between the vertebral discs were retained. It is possible that this condition was due to

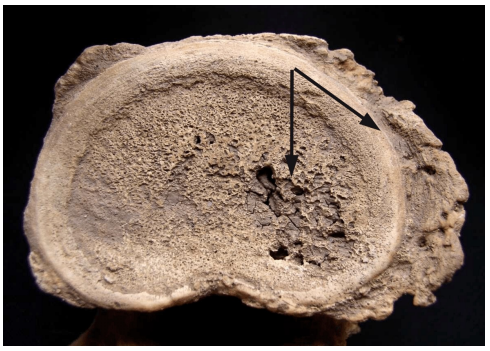

Plate 3 DJD in lumbar vertebra of skeleton 1012 with osteophytes and porosity

DJD, or it might have been caused by other degenerative diseases, such as DISH. However, the severe erosion and fragmentation of this spine did not permit more precise identification of the condition.

The intervertebral discs are the 'shock absorbers' of the spine, but these can degenerate as a result of gradual desiccation, which then causes transmission of the stress from the vertebral discs to the articular facets and ligaments (Hirsh 1983, 123). Spinal osteophytes (outgrowths of bone) form in response to the constant stress that is placed on the spine as a result of human posture (Roberts and Manchester 1995, 106) to compensate. Increasing stress or activity can therefore lead to increased size and prevalence of osteophytes (*ibid*). Spinal joint disease was common in the Roman period, affecting 14% of the population (Roberts and Cox 2003, 145).

DJD was also noted in other joints, including the hips of Skeletons 1012 and 1441, the ribs of Skeleton 1087 and the elbows and thumbs of Skeleton 1441.

3.4.2 Osteoarthritis

Osteoarthritis is a degenerative joint disease characterised by the deterioration of the joint cartilage, leading to exposure of the underlying bony joint surface. The resulting bone to bone contact can produce polishing of the bone termed 'eburnation', which is the most apparent expression of osteoarthritis. Osteoarthritis can be the result of mechanical stress and other factors, including lifestyle, food acquisition and preparation, social status, sex and general health (Larsen 1997, 179).

Plate 4 First metatarsal of Skeleton 1441 with eburnation

The two mature adult males suffered from osteoarthritis. The distal first metatarsal joint (big toe) of Skeleton 1441 showed evidence for eburnation (Plate 4). It is probable that both age and possible trauma had contributed to the onset of this condition. Modern studies have found no correlation between the expression of osteoarthritis and the severity of pain (Cockburn *et al* 1979). It is therefore not clear, whether this man would have suffered discomfort as a result of the lesion in his toe.

Plate 5 Radius and ulna of Skeleton 1012 with enlarged joints and eburnation as a result of osteoarthritis

Skeleton 1012 exhibited more widespread osteoarthritis, in some of the lower vertebral facets, the right thumb and particularly severely in the right elbow. Marginal osteophyte formation caused the whole elbow joint to become grossly enlarged with eburnation at the joint surfaces of the humerus, ulna and radius (Plate 5). The radial and coronoid fossae of the distal humerus were unusually depressed (Plate 6), indicative of ligamentous trauma.

It is likely that this individual suffered dislocation of the elbow caused by a fall on the outstretched hand, with the lower part of the humerus sliding forward over the coronoid process (the anterior part of the ulnar elbow joint). In cases of such injuries, full restoration of movement is rare and full extension of the joint usually impossible (Dandy and Edwards 1998, 199). The presence of eburnation suggests, however, that the joint was still being used after the injury occurred. Use of the bone caused bone to bone rubbing, eventually producing eburnation or osteoarthritis. It is possible that eburnation of the right thumb was also related to the underlying injury.

Plate 6 Humerus of Skeleton 1012 with eburnation and muscular trauma (arrow)

3.4.3 Schmorl's Nodes

A different condition which affects the spine is Schmorl's nodes. Schmorl's nodes are indentations in the upper and lower surfaces of the vertebral bodies, most commonly in the lower thoracic vertebrae (Hilton *et al* 1976). Schmorl's nodes can result from damage to the intervertebral discs, which then impinge onto the vertebral body surface (Rogers 2001), and may cause necrosis (death) of the surrounding tissue. Rupture of the discs only occurs if sufficient axial compressive forces are causing pressure on the central part of the discs; frequent lifting or carrying of heavy loads can cause this.

Plate 7 Schmorls nodes in lumbar vertebra of Skeleton 1472

Schmorl's nodes were observed in the lower spines of Skeletons 1012, 1087, 1297 and 1472, three males and a female (Plate 7). The high prevalence of Schmorl's nodes in this assemblage might be attributed to the physical stresses these individuals underwent in their daily activities. Schmorl's nodes were common in the Roman period, with a crude prevalence rate of 8.9% (Roberts and Cox 2003, 147).

3.4 TRAUMA

3.4.1 Fractures

The type and distribution of broken bones depends on the environment the population lived in and is therefore often population-specific. Factors influencing fracture frequency include rough terrain, hard physical labour or dangerous work and interpersonal violence.

The neck (vertebral end) of the second right rib of young middle adult male (Skeleton 1087) exhibited a fracture, which was well-healed (Plate 8). Tomczak and Buikstra (1999, 255) found that impact from the back tends to fracture ribs near the spine. Upper rib fractures are associated with extreme force (*ibid*). Isolated rib fractures can heal quickly and are nowadays often treated in the same way as severe bruises (Dandy and Edwards 1998, 159). It is therefore likely that this individual had sustained the rib injury from the back with some force. No other evidence for trauma was noted in this individual, suggesting that it was related to an isolated accident. Approximately 3.3% of ribs from the Roman period are fractured and this type of trauma has been found to be four times as common in males as compared with females (Roberts and Cox 2003, 156).

Plate 8 Rib fracture in Skeleton 1087

A further fracture was noted in the disarticulated human bone. A left scapula fragment from a modern pit (F14) exhibited a well-healed fracture to the blade of the bone (flat part). Fractures of this type are relatively rare, as the muscles attaching to the scapula usually tend to protect the bone. However, the shoulder blade can be fractured through direct trauma (Dandy and Edwards 1998, 186).

3.4.2 Activity-Related Trauma

Occasionally, it is possible to infer trauma to the soft tissue on the bones, in the form of ligamentous or muscular trauma. This is expressed through the formation of bony processes (*enthesopathies*) at the site of ligament attachments. Additionally, it is possible to observe bone defects at the site of muscle insertions, which are the result of constant micro-trauma and are usually activity-related (Hawkey and Merbs 1995, 334).

The majority of muscular trauma was noted in the arms, particularly the humeri of this group. Skeletons 1087 and 1441 exhibited bone defects or *enthesopathies* at the attachment sites of *pectoralis major* on the humerus. This muscle attachment was also well-developed in those adults who did not exhibit trauma at this site. Further upper arm muscle trauma was noted

in Skeleton 1087 at the attachment sites for *teres major*. Trauma to *deltoid* was observed on the right clavicle of Skeleton 1472. These muscles are responsible for movements of the upper arm and shoulder (Stone and Stone 1990). The right arms of Skeletons 1087 and 1441 exhibited trauma at the attachment site of *triceps*, which extends the forearm, and aids in adduction.

Evidence for activity-related strain to the lower limbs was also observed. Skeletons 1032, a middle-aged male, and 1297, a middle-aged female had non-metric traits at the ankle, indicative of periods of squatting. Skeletons 1062 and 1087, young males, and older male Skeleton 1472 had bone defects at the attachments of the *soleus* muscle, which flexes the foot downwards (Stone and Stone 1990, 185); this type of trauma may also be related to squatting.

Skeleton 1012 showed evidence for muscular trauma in the form of *enthesopathies* on the knee and pelvis for *rectus femoris*, a muscle that extends the leg at the knee joint and flexes the thigh at the hip joint (Stone and Stone 1990, 166). This male skeleton also showed evidence for muscular strain on the femora for *gluteus maximus* (Plate 9), the main muscle of the bottom (extends and laterally rotates the hip joint and extends the trunk), and for *adductor magnus* and *adductor brevis*, (adduct the thigh at the hip and assist in lateral rotation) (*ibid*, 177-8). Skeletons 1297 and 1472 also exhibited a bone defect at the attachments for *gluteus maximus*.

Plate 9 Enthesopathy for *gluteus maximus* on left femur of Skeleton 1012

Skeleton 1472, a middle-aged male, also had muscular trauma at the attachments of *popliteus* (rotates the leg medially and flexes the leg) and *psoas major* and *iliacus*, which flex the thigh at the hip joint.

Spondylolysis refers to a condition which is characterised by the separation of a vertebra into two parts, the vertebral body and the spinous process (Merbs 1996). This occurs mostly in the lumbar vertebrae and is the result of genetic predisposition and repetitive stress or fatigue fracturing, often caused by mechanical loading of the spine. It may also be congenital in origin, but in that case it tends to affect the cervical vertebrae. The condition may cause pain, but this is not the case in all patients (Albanese and Pizzutillo 1982, 499). Skeleton 1441, a mature adult male suffered from *spondylolysis* of the fifth lumbar vertebra (Plate 10). The spinous process was separated entirely from the vertebral body. The occurrence of the condition in the lower part of the spine suggests that in this instance, it was activity-related. In the Roman period, *spondylolysis* is relatively rare, with a crude prevalence rate of 0.04% (Roberts and Cox 2003, 152).

Plate 10 Spondylolysis of 5th lumbar vertebra of Skeleton 1441

3.4.4 Circulatory Disorders

Osteochondritis dissecans is characterised by necrosis (death) of part of the joint area, with separation of a small bone fragment from the joint surface, which can become completely disconnected and remain as a loose body within the joint capsule, or may be reabsorbed or reattached. The condition tends to have little effect in adolescents, who are most likely to suffer from *osteochondritis dissecans*. Adults with the condition, on the other hand, can suffer pain, interlocking and instability of the joint (Clanton and DeLee 1982, 59). The initiating mechanism for *osteochondritis* is now thought to be multifactoral, but is related to trauma at a susceptible location (Frederico *et al* 1990). A young middle adult male (Skeleton 1087) suffered from *osteochondritis* in both big toes. This condition is relatively uncommon in the Roman period, with a crude prevalence rate of 0.4% (Roberts and Cox 2003, 152).

A disarticulated proximal femur from a modern pit (F14) displayed some shortening of the femoral neck, also termed *coxa vara*. This condition can have a number of different causes, but is usually related to poor blood supply in the hips.

3.5 NEOPLASTIC DISEASE

The most common tumours observed in palaeopathology are benign tumours, especially ivory or button osteomas. Osteomas are small, dense and round, protrude from the bone and form within the bone surface (periosteum) (Capasso 1997). They produce no pain and are most frequently noted on the skull, especially the frontal or parietals (sides of the skull), and can occur in single or multiple forms. The frequency of osteomas has been found to rise with increasing age.

A disarticulated skull from a modern pit (F14) exhibited two small ivory button osteomas on the frontal bone (forehead). The tumours were incorporated into the skull bone and hardly visible.

3.6 MISCELLANEOUS PATHOLOGY

Arachnoid granulations are small, well-defined depressions on the inner (endocranial) surface of the skull. They tend to cluster at the frontal and parietal, especially at the border between these three skull parts (Mann and Murphy 1990, 26). They are common in all populations and have a tendency to increase in number and depth with advancing age. The cause for the formation of *arachnoid granulations* has not yet been understood. Older females tend to be predominantly affected, especially following menopause, although males do exhibit the lesions as well. Skeleton 1297, an old middle adult female, exhibited small clusters of *arachnoid granulations* on the endocranial (inner) surface of the frontal bone.

3.7 CONCLUSION

Childhood stress in the form of iron deficiency anaemia was noted in three individuals, two males (Skeletons 1032 and 1472) and a five to six year old child (Skeleton 1060) as well as a disarticulated juvenile skull from modern pit F14. The prevalence of the lesions was much higher than the Roman average, suggesting that perhaps the pathogen load of this population was high, which in turn is often responsible for iron deficiency anaemia.

This was also indicated by the presence of inflammatory lesions on the tibiae of three males (Skeletons 1087, 1441 and 1472) and three disarticulated tibiae, which may have been due to ulcers, trauma to the shins, varicose veins, or to infectious diseases such as leprosy or syphilis. Further evidence for infection was noted in the form of chronic sinusitis in Skeleton 1032, who also exhibited evidence for iron deficiency. It is possible that his chronic sinusitis was caused by exposure to pollution. Further evidence for inflammation was noted in the skull of a young middle adult male (Skeleton 1062), it is not clear what had caused the inflammation.

The skeletal evidence suggests that the older members of this population suffered from degenerative disease, which was mostly concentrated in the spine, hips, elbows, hands and ribs and is thought to have been age-related. The two mature adult males also suffered from osteoarthritis, which is likely to have been secondary to traumatic injuries that had occurred some time before death. The arthritic lesions in the right elbow of Skeleton 1012 were particularly severe, and it is thought that the arthritis was exacerbated due to continued use of a dislocated joint.

Trauma to the spine and muscles of the arms and thighs suggest that the adults carried out physical work that placed strain on the spine, rotator cuff and those muscles that control movement of the hips. Evidence for habitual squatting was noted in four individuals and may have been work-related. Activity-related trauma was not seen in any of the children, suggesting that the activities were only carried out by adults. In other Roman populations, evidence for physical strain is often already observed in the adolescents. The separation of the vertebral arch and body in a middle adult male (Skeleton 1441), which appears to be related to lower spine flexibility, could have been caused by activity-related strain.

It is possible that the well-healed rib fracture of Skeleton 1087 and a disarticulated scapula fracture were caused by work-related accidents. Both injuries were produced by a strong force from the back. Alternatively, these fractures may have been caused by other accidents or through inter-personal conflict.

Two benign tumours were noted in a disarticulated skull. These are common in archaeological contexts and would have

had no affect on the individual.

4.0 DENTAL HEALTH

Analysis of the teeth from archaeological populations provides vital clues about health, diet and oral hygiene, as well as information about environmental and congenital conditions. Many of the jaws were incomplete as a result of post-depositional factors. Skeletons 1012, 1117, 1210 and 1215 had no surviving teeth. Of the total 170 tooth positions present, 141 permanent teeth and fourteen deciduous teeth were recovered. Ten additional tooth crowns were recovered, which were in the process of erupting. These included eight permanent teeth in Skeleton 1060 and two deciduous teeth in Skeleton 1093 (Table 6). The four third molars of Skeleton 1062 were not present and it was not clear, whether these were impacted in the jaw, or had simply not developed.

Table 6 Summary of dental pathology

Skeleton No	Number of teeth present	Calculus	Caries	Abscesses	DEH	Infractions	Wear	Periodontitis
1032	24 permanent	8	1	1	3	2	Moderate	Moderate
1060	14 deciduous, 8 permanent erupting	-	-	-	-	-	-	-
1062	27 permanent	21	1	-	5	-	Moderate	Slight
1087	30 permanent	14	2	1	20	1	Slight	Slight
1093	2 deciduous erupting	-	-	-	-	-	-	-
1091	25 permanent	-	-	-	7	-	Slight	-
1297	17 permanent	11	1	-	6	-	Slight	Slight
1441	1 permanent	-	-	4	-	-	Considerable	Considerable
1472	17 permanent	11	1	-	6	-	Slight	Considerable

A single tooth was recovered from the juvenile cremated assemblage (Burial 1471).

Nine teeth had been lost ante-mortem, while a further twelve teeth had been lost post-mortem. The ante-mortem tooth loss was probably caused by dental abscesses in the case of Skeletons 1032, 1062, 1087 and one of the four teeth lost ante-mortem in Skeleton 1441. All the abscesses were well-healed at the time of death.

Dental wear tends to be more common and severe in archaeological populations than in modern teeth. Severity of the dental wear was assessed using a chart developed by Smith (1984). Each tooth was scored using a grading system ranging from 1 (no wear) to 8 (severe attrition of the whole tooth crown). Dental wear was largely moderate, and the worst wear was observed in the older adults – particularly Skeletons 1032 and 1441. The teeth of the adolescent, which had relatively recently erupted teeth, exhibited little wear (see Table 6).

Calculus (dental plaque) is commonly observed in archaeological populations whose dental hygiene was not as rigorous as it is today. Calculus mineralises and forms concretions on the tooth crowns, along the line of the gums (Plate 11). Calculus was observed in the 41.9% of teeth, and was slight to moderate. The calculus prevalence rate at this site corresponded with the Roman mean of 43.4% (Roberts and Cox 2003,

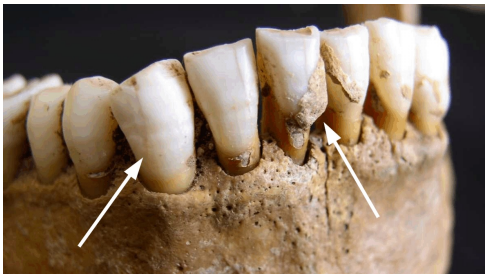

Plate 11 Mandible of Skeleton 1062 with calculus and DEH

132).

Periodontitis (receding gums) was slight in the majority of individuals, but severe in Skeletons 1441 and 1472 (see Table 6). It could not be determined whether this was related to the old age in the case of Skeleton 1441, or calculus deposits, which often irritate the teeth, as this male only had one surviving tooth. Skeleton 1472 suffered from extensive calculus deposits, which probably aggravated the periodontal disease, causing the gums to recede considerably.

It is possible that a bump or fall caused the infractions (dental chipping) of the first and upper right incisors of Skeleton 1032 (Plate 12) and the upper right second premolar of Skeleton 1087. Wear on the chipped parts of the three teeth implies that these injuries had occurred some time before death.

Plate 12 Maxilla of Skeleton 1032 with severe dental wear and infractions

Skeletons 1032, 1062 and 1087 suffered from one dental abscess each, while Skeleton 1441 had four dental abscesses (see Table 6), which were located around the roots of the teeth. The infections were localised, causing holes to form at the base of the tooth roots, which had released pus from the bone into the mouth. It is probable that the infections were extremely painful. Even today, with the availability of antibiotics, dental abscesses can be very persistent. In the past, however, they must have played a more significant role, debilitating and causing extreme pain, weakening the immune system and, if the infection entered the bloodstream, causing fatal septicaemia. In this case, all six abscesses were well-healed, suggesting that the individuals had survived the infections. The teeth affected by the abscesses had been lost ante-mortem, but it is probable that the infections had developed as a result of caries lesions (cavities).

Cavities are multifactoral in origin, but develop as a result of aggressive bacterial attack in the presence of sucrose (Hillson 1996, 282) and fermentable carbohydrates (Roberts and Manchester 1995, 47). Skeletons 1032, 1062, 1297 and 1472 suffered from one caries lesion each, while Skeleton 1087 had two lesions (see Table 6). In the majority of cases, the lesions affected the first molars, but the second molars were involved in Skeletons 1297 and 1472. The teeth at the back of the mouth are hardest to clean and are therefore most likely to be affected by caries. This gives a prevalence rate of 3.9% of caries lesions in this population, which is much lower than the overall Roman prevalence rate of 7.5% (Roberts and Cox 2003, 132).

Three individuals (1062, 1087 and 1297) had crowded anterior teeth, indicative of limited space in the gums for the number of teeth present. In all cases, crowding affected the mandible, causing overlapping of the canines and the incisors or premolars (Plate 13). The presence of crowding in these individuals may suggest a familial link, which supports the same theory indicated by presence of several common non-metric traits.

Plate 13 Mandible of Skeleton 1297 with crowding and DEH

The most prevalent dental pathology in this population was dental enamel *hypoplasia* (DEH). DEH is the manifestation of lines, grooves or pits on the crown surface of the teeth (see Plates 11 and 13), which represent the cessation of crown formation. The defects are caused by periods of severe stress during the first to seventh year of childhood, including malnutrition or disease. DEH was observed in 47 teeth (20.3%), all of which were anterior teeth, with the exception of two premolars in adolescent Skeleton 1091. The prevalence of DEH at Mill Mount was considerably higher than that reported for the Roman reported, at 9.1% (Roberts and Cox 2003, 140).

The dental health of the population was relatively good, with a normal Roman calculus prevalence rate, and low caries rate. Wear was generally moderate, few infractions were noted and periodontal disease was widespread, but largely slight to moderate in severity. Although six dental abscesses were noted, all of these were well-healed, implying that the individuals

had survived the infections.

The most common dental pathology was DEH, which was seen in all six individuals with permanent anterior teeth. All of these individuals had more than one DEH line on the teeth, implying that they had suffered from several episodes of stress during childhood. Male middle adult Skeleton 1087 was affected most severely; he had twenty teeth with DEH. The evidence suggests that all of these individuals had experienced hardship during childhood.

5.0 MORTUARY PRACTICE

Both cremation burials at Mill Mount are thought to date to the third century AD and had been interred in urns. The inhumed skeletons found at Mill Mount were interred in single flat graves. They are thought to date to the second or third century AD. All the skeletons were buried in a similar manner, in supine extended positions, with the arms beside the body or crossed over the abdomen or chest. The skeletons were orientated with the heads to the west or northwest and the feet to the east or southeast (see Table 1). The exceptions to the rule were three of the children, who were buried in different positions or orientations. Juvenile Skeleton 1060 was buried in a prone position, while adolescent Skeleton 1091 was interred with the head to the southeast and the feet to the northwest, in the opposite direction to all the other skeletons. A neonate Skeleton 1093 overlay the feet of a young middle adult male Skeleton 1087 in a crouched position.

The presence of both cremation burials and inhumations suggests that this cemetery spans the period of transition between the earlier cremation rite and the later funerary custom of inhumation, which has often been associated with conversion to Christianity. However, these individuals were not interred in the classic Christian burial orientation with their heads to the east, so that they could face the rising sun on the Day of Judgement.

The burial ritual at Mill Mount corresponds with that frequently observed during the mid Roman period. The majority of burials during this period tend to lie on their backs, with extended legs and the arms in a variety of relatively orderly positions (Clarke 1979, 352). The direction of orientation varies considerably between different cemeteries.

Similarly, orderly burial, which often followed the same orientation and could be in rows, was the most common form of burial in the majority of cemeteries, although exceptions, such as Trentholme Drive in York, (Wenham 1968) do exist. It has been argued that orderly burial became increasingly widespread towards the later Roman period, particularly in the fourth century AD (Clarke 1979, 352). Although of an earlier date, this organised manner of burial was also practised at Mill Mount.

The skeletons were buried in coffins without exception, as suggested by preserved nails or coffin stains. This was not observed at Trentholme Drive, a cemetery just to the south of Mill Mount, where many of the skeletons had been buried in shrouds (Wenham 1968).

Many Roman cemeteries showed evidence for burial in family plots. This has been indicated by the presence of individuals of different ages and sexes in the same area, but also clusters of non-metric traits (which can suggest family relationships). Such family groupings have been most obvious in the large cemeteries, such as Cannington in Somerset (Rahtz *et al* 2000, 63). It is possible that the small group buried at Mill Mount also represents a family plot, and this could be verified by the presence of mutual non-metric traits and other physical characteristics.

6.0 DISCUSSION AND SUMMARY

Osteological analysis of the skeletal assemblage from Mill Mount has provided a glimpse into the lives of the people buried there. The small group of inhumed skeletons included two mature males, two old middle-aged males and two younger middle-aged males. Two females were recovered, one of whom was at least twenty years old, while the other was middle-

aged. The population also included five children, comprising of two neonates, two juveniles and an adolescent. According to the disarticulated human bone analysis, two adults of undetermined sex, as well as a further adolescent and neonate, and two juveniles had been buried on the site.

The average age at the Mill Mount cemetery was 21 years, which is relatively young compared with other Roman cemeteries. It is possible that the cemetery represents a family plot, and this was verified by the presence of shared genetic skeletal traits and evidence for dental anomalies, such as tooth crowding.

In common with most other Roman cemeteries, the Mill Mount assemblage represented a relatively orderly plot, where graves were generally aligned along the same orientation. All individuals were buried in extended supine positions, with the exception of one juvenile, who was buried on the front. The skeletons had been buried in wooden coffins, held together with ferrous nails, many of which survived *in situ*. The crouched skeleton of a neonate was found within the coffin of a middle-aged male, placed on his feet.

The skeletal remains were in a poor to good condition and often incomplete. This was caused by later features, which truncated the graves.

The cremation burials contained an adult and a juvenile, who had been moderately well cremated. Both individuals had been interred in urns and although one of the urns had been disturbed by a later feature, the bone was well-preserved.

Evidence for age-related conditions was noted in the older female in the form of internal cranial pitting and in a disarticulated skull in the form of two benign tumours. Age-related degenerative disease was observed in all of the adults with spines, as well as some hip joints, ribs, elbows and thumbs. More severe joint disease in the form of osteoarthritis was noted in the two mature adult males, in the right elbow, thumb and spine of Skeleton 1012 and the big toe of Skeleton 1441. It is probable that the lesions were secondary to traumatic injuries that had occurred earlier in life. The presence of two high impact fractures, which were inflicted with some force from the back, may be related to inter-personal violence, or to accidents, which could be work-related.

Evidence for trauma to those muscles responsible for moving the arm and shoulder was noted in all adults. Some individuals also showed evidence for habitual squatting or for strain to those muscles moving the hips and thighs. This, together with the joint disease noted in the adults, as well as strain-related injuries to the spines of three males and a female adult, suggest that these people carried out physically demanding activities. It is likely that involvement in these activities began in early adulthood and was continued throughout life. This is unusual, as activity-related strain is often seen in children from other Roman cemeteries. It is also feasible that the inflammation on the shins of three males and three disarticulated tibiae was caused through a work-related incident.

Alternatively, it is possible that the inflammatory lesions in these individuals were related to other non-specific infections, or to infectious diseases, such as syphilis or leprosy. The high prevalence rate of iron deficiency anaemia in this population certainly suggests exposure to a high pathogen load during childhood. This is also supported by the presence of dental enamel *hypoplasia*, which was noted in all individuals with surviving permanent anterior teeth. The evidence suggests that this population was subject to episodes of malnutrition or disease between six months of age and seven years. This theory is further supported by the relatively high incidence of neonatal deaths, as well as and the presence of two young juveniles. It is likely that these children succumbed to these periods of stress.

Dental hygiene was relatively good in this population, with an average Roman rate of plaque and low number of cavities and dental abscesses. The small number of cavities might be due to good tooth cleaning practices, or may have been related to a diet low in sugar and carbohydrates.

The presence of the small Roman cemetery at Mill Mount provides an insight into Roman health in York, as well as Roman mortuary rituals. The funerary rites practiced at Mill Mount suggest that a small local group, perhaps representing a family, had been interred in a regular manner. The individuals were buried in wooden coffins, regardless of their age. The skeletal evidence suggests that children suffered from episodes of stress, perhaps related to a high pathogen load, or to malnutrition, causing some children to die. Children or adolescents were, however, not involved in heavy physical work – this was reserved for the adults. Injuries, inflammations and degenerative joint disease were the price paid for the physical habitual activities carried out by these adults.

7.0 FUTURE RECOMMENDATIONS

It is recommended that the individuals excavated at Mill Mount undergo radiocarbon dating. Targeted radiocarbon dating of skeletons and cremated remains would provide accuracy in assigning different skeletons to different phases of the Roman period. Analysis of the sarcophagus burial from the site and its comparison with the skeletons discussed in this report would provide further information on burial ritual and social status.

It is also recommended that the burials are compared with those recently excavated at Driffield Terrace and 89, The Mount and those from earlier excavations at Trentholme Drive. All of these burials belong to the cemeteries clustered around The Mount and comparisons of the different parts of the cemeteries could considerably enhance our understanding of Roman life in York.

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Appendix A Osteological and Palaeopathological Catalogue

Inhumed Skeletons

Skeleton Number	**1012**
Preservation	Good
Completeness	50%, sternum, lower vertebrae, arms, hands, sacrum, pelvis, femora, right patella
Age	46+ mature adult
Sex	Male
Stature	172.8 ± 3.27 cm
Non-Metric Traits	Acetabular crease (bilateral), Poirier's facet (bilateral)
Pathology	Spinal DJD, DJD in hips, Schmorl's nodes, *enthesopathies*, osteoarthritis in right elbow, right 1st metacarpal, spine
Dental Health	None

Skeleton Number	**1032**
Preservation	Moderate
Completeness	60% skull, humeri, right clavicle, ulnae, radius, femora, tibiae, patellae, fibulae, feet, parts of left hand
Age	36+
Sex	Male
Stature	168.3 ± 3.37 cm
Non-Metric Traits	Absent zygomaticofacial foramen (left), bridging of supraorbital notch (left), accessory supraorbital foramen (left), lateral tibial squatting facet (bilateral), double inferior talar facet (bilateral), os trigonum (bilateral)
Pathology	Sinusitis, *cribra orbitalia*
Dental Health	calculus on 8/24 teeth, moderate to severe wear, caries 1/24, DEH on 3/24 teeth, infractions of upper left first and second incisors, dental abscess at mandibular left 1st molar, moderate periodontitis

	Right Dentition								Left Dentition							
Present	P	-	-	-	-	P	P	P	P	P	P	P	P	P	-	-
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	L	L	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	4	-	-	-	5	6	6	7	7	6	5	4	4	5	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	Pu	P	P	PM	P	P	P	P	P	P	Pu	AM	P	P
Calculus	-	-	-	Fa	Fa	-	Sd	Sd	Sd	Sl	Sb	-	-	-	Ml	-
DEH	-	-	-	-	-	-	-	-	-	L	-	-	-	-	-	-
Caries	-	-	La	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	2	3	4	2	3	2	3	4	4	3	2	3	2	4	3	2

Skeleton Number	**1060**
Preservation	Good

Skeleton Number			**1060**							
Completeness			50% skull, clavicles, scapulae, humeri, left radius and ulna, left hip, left proximal femur							
Age			5-6, juvenile							
Sex			undetermined							
Stature			-							
Non-Metric Traits			Absent zygomaticofacial foramen (bilateral)							
Pathology			*Cribra orbitalia*							
Dental Health			The first and second molars are erupting, no dental pathology							
Present	P	P	P	NP	P	PM	NP	P	P	-
Calculus	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-
Wear	1	2	3	-	3	-	-	3	2	-
Maxilla	**e**	**d**	**c**	**b**	**a**	**a**	**b**	**c**	**d**	**e**
Mandible	**e**	**d**	**c**	**b**	**a**	**a**	**b**	**c**	**d**	**e**
Present	P	P	P	NP	P	P	NP	P	P	P
Calculus	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-
Wear	1	2	3	-	3	3	-	3	2	1

Skeleton Number								**1062**									
Preservation								Good									
Completeness								80%, all but most of spine, ribs and most of pelvis									
Age								26-35, young middle adult									
Sex								Male?									
Stature								159.3 ± 3.37 cm									
Non-Metric Traits								Mastoid foramen extrasutural (bilateral), absent zygomaticofacial foramen (left), septal aperture (bilateral), peroneal tubercle (left)									
Pathology								Periosteal inflammation of skull, bone excavations									
Dental Health								Calculus on 21/27 teeth moderate wear, caries 1/27 teeth, DEH 5/27 teeth, slight periodontitis, slight crowding at canines									
	Right Dentition								Left Dentition								
Present	NP	P	AM	P	P	P	P	P	P	P	P	P	P	P	P	P	NP
Calculus	-	Sd	-	Fm	-	-	Sm	-	-	-	-	Fl	Fl	Hb	Sa	-	
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	Sd	-	-	
Wear	-	2	4	3	4	4	5	5	5	5	4	4	3	3	2	-	
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Present	NP	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NP	
Calculus	-	Fa	Fa	Fd	Fd	Sb	Sb	Fa	Mb	Fa	Fa	Fa	Fd	Sa	Sa	-	
DEH	-	-	-	-	-	-	L	L	L	L	L	-	-	-	-	-	
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Skeleton Number				**1062**													
Wear	2	3	4	2	3	2	3	4	4	3	2	3	2	4	3	2	

Skeleton Number	**1087**
Preservation	Good
Completeness	75% skull, arms, ribs, vertebrae, tibiae, fibulae, feet, parts of left hand
Age	26-35 years, young middle adult
Sex	Male?
Stature	169.3 ± 3.37 cm
Non-Metric Traits	Mastoid foramen extrasutural (bilateral), absent zygomaticofacial foramen (left), bridging of supraorbital notch (right), peroneal tubercle (bilateral), double anterior calcaneal facet (bilateral), double inferior talar facet (bilateral)
Pathology	Schmorl's nodes, fractured 2nd right rib, osteochondritis dissecans in both 1st metatarsals, bone excavations, enthesopathies, slight DJD in ribs and spine, periosteal inflammation of tibiae
Dental Health	Calculus on 14/30 teeth, slight to moderate wear, DEH of 20/30 teeth, caries 2/30 teeth, infraction of upper right 2nd premolar, abscess of left maxillary 2nd molar, slight periodontitis, anterior crowding

	Right Dentition								Left Dentition							
Present	P	P	Pu	P	P	P	P	P	P	P	P	P	P	Pu	AM	AM
Calculus	-	-	-	-	-	-	-	-	Sb	Sb	Sb	Sb	-	-	-	-
DEH	-	-	-	L	L	L	L	L	L	L	L	L	L	-	-	-
Caries	-	-	La	-	-	-	-	-	-	-	-	-	-	La	-	-
Wear	3	4	-	4	2	4	3	4	4	3	4	3	4	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Calculus	Fa	Fa	Ml	-	-	-	-	Sl	Sl	-	-	-	-	Ml	Fa	Fa
DEH	-	-	-	L	L	L	L	L	L	L	L	L	L	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	3	4	5	3	2	4	3	4	4	3	4	2	3	5	4	3

Skeleton Number	**1093**
Preservation	Good
Completeness	40% Parts of skull, ribs, left arm, left hand, vertebrae, pelvis, left proximal femur
Age	Neonate, 0-2 months
Sex	undetermined
Stature	-
Non-Metric Traits	Supracondyloid process (left)
Pathology	None
Dental Health	None

Present	-	-	-	-	-	-	-	-	-	-
Calculus	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-

Skeleton Number			**1093**							
Maxilla	**e**	**d**	**c**	**b**	**a**	**a**	**b**	**c**	**d**	**e**
Mandible	**e**	**d**	**c**	**b**	**a**	**a**	**b**	**c**	**d**	**e**
Present	E	-	-	-	-	-	-	-	-	E
Calculus	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-
Wear	1	-	-	-	-	-	-	-	-	1

Skeleton Number	**1091/1099**
Preservation	Poor
Completeness	60%
Age	12-14, adolescent
Sex	Undetermined
Stature	-
Non-Metric Traits	Double anterior condylar canal
Pathology	None
Dental Health	DEH 7/25 teeth, slight wear

	Right Dentition								Left Dentition							
Present	-	P	P	-	P	P	P	-	P	-	P	P	-	P	P	-
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	L	-	-	L	-	L	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	1	2	-	2	2	1	-	2	-	2	2	-	2	1	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	E	P	P	P	P	P	PM	P	P	P	P	P	P	P	P	E
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	L	-	-	-	-	L	L	L	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	1	1	2	1	2	2	-	3	3	3	2	2	1	2	1	1

Skeleton Number	**1117**
Preservation	Poor
Completeness	45% shafts of arm bones, femora, tibiae, right patella
Age	10-14, juvenile
Sex	undetermined
Stature	-
Non-Metric Traits	-
Pathology	-
Dental Health	-

Skeleton Number	**1210**
Preservation	Moderate
Completeness	65% parts of skull, right scapula, right humerus, left arm, some vertebrae, ribs, pelvis, femora, tibiae, fibulae, left hand
Age	Neonate, 0-2 months
Sex	undetermined
Stature	-
Non-Metric Traits	-
Pathology	-
Dental Health	-

Skeleton Number	**1215**
Preservation	Poor
Completeness	50% left humerus, radii, right ulna, femora, acetabuli, femora, tibiae, parts of fibulae, feet
Age	20+
Sex	Female?
Stature	167.7 ± 3.72 cm
Non-Metric Traits	-
Pathology	-
Dental Health	-

Skeleton Number	**1297**
Preservation	Moderate
Completeness	80% all but right scapula, right hand, left ulna, parts of ribs and vertebrae
Age	36-45, old middle adult
Sex	Female
Stature	162.6 ± 3.66 cm
Non-Metric Traits	Parietal foramen (right), mastoid foramen extrasutural (left), bridging of supraorbital notch (right), double atlas facet (left), acetabular notch (bilateral), hypotrochanteric fossa (left), exostosis in trochanteric fossa (left), lateral tibial squatting facet (right), double anterior calcaneal facet (bilateral), double inferior talar facets (bilateral)
Pathology	Schmorl's nodes, DJD in spine, bifid sternum, bone excavations, *arachnoid granulations*
Dental Health	calculus on 11/17 teeth, 1/17 caries, DEH at 6/17 teeth, slight to moderate wear, slight periodontitis, dental crowding

	Right Dentition								Left Dentition							
Present	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-
Calculus	-	-	-	Fa	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Skeleton Number				**1297**												
Calculus	Fa	Fa	Fa	Fd	Fd	Fl	-	-	-	-	-	-	Sm	Fl	Sl	Fd
DEH	-	-	-	-	-	L	L	L	L	L	L	-	-	-	-	-
Caries	-	Mb	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	2	3	5	3	3	2	4	4	4	4	3	4	4	5	4	2

Skeleton Number	**1441**
Preservation	Moderate
Completeness	75% parts of skull, left clavicle, arms, lower vertebrae, legs, pelvis, hands and feet
Age	46+ mature adult
Sex	Male
Stature	171.4 ± 3.27 cm
Non-Metric Traits	Absent zygomaticofacial foramen (left), Poirier's facet (bilateral)
Pathology	Spondylolysis of L5, periostitis of tibiae, osteoarthritis in 1st left metatarsal, DJD in elbow, thumbs, hips
Dental Health	calculus on 1/1 teeth, considerable periodontitis, severe wear, 4 abscesses

	Right Dentition								Left Dentition							
Present	-	-	-	-	-	-	-	-	PM	PM	PM	AM	PM	AM	-	-
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	-	-	-	-	-	-	-	AM	PM	PM	PM	PM	PM	P	AM	AM
Calculus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-

Skeleton Number	**1472**
Preservation	Moderate
Completeness	75% all but left arm, left hand and left femur
Age	36-45, old middle adult
Sex	Male
Stature	170.5 ± 3.37 cm
Non-Metric Traits	Ossicle in lambdoid (bilateral), mastoid foramen extrasutural (right), absent anterior calcaneal facet (bilateral), os trigonum (left)
Pathology	Schmorl's nodes, DJD in spine with fusion, osteitis and periostitis in left tibia, enthesopathies, bone excavations, *cribra orbitalia*
Dental Health	calculus on 11/17 teeth, 1/17 caries, DEH at 6/17 teeth, slight to moderate wear, considerable periodontitis

	Right Dentition								Left Dentition							
Present	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-

Skeleton Number				**1472**												
Calculus	-	-	-	Fa	-	-	-	-	-	-	-	-	-	-	-	-
DEH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Maxilla	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Mandible	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Present	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Calculus	Fa	Fa	Fa	Fd	Fd	Fl	-	-	-	-	-	-	Sm	Fl	Sl	Fd
DEH	-	-	-	-	-	L	L	L	L	L	L	-	-	-	-	-
Caries	-	Mb	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wear	2	3	5	3	3	2	4	4	4	4	3	4	4	5	4	2

Present - Tooth presence; am - ante-mortem tooth loss; pm - post-mortem tooth loss; p - tooth present; - - jaw not present;
Caries - Calculus; F - flecks of calculus; S - slight calculus; M - moderate calculus; H - heavy calculus; a - all surfaces; b - buccal surface; d - distal surface; m - mesial surface; l - lingual surface; o - occlusal surface;
DEH - dental enamel *hypoplasia*; l - lines; g - grooves; p - pits;
Caries - caries; s - small lesions; m - moderate lesions; l - large lesions;
Wear - dental wear; numbers from 1-8 - slight to severe wear

Table 1 Disarticulated Bone

Feature	**Context**	**Area**	**Context Type**	**Bones**	**Age**	**Sex**	**Other**
-	1000	1	Topsoil	Pelvis	30-34	Female?	
2	1003	2	Recovery Context	tibia	Adult	-	Shaft
				Pelvis	Adult	Male?	Acetabulum
				Ulna	Adult	-	Shaft
				Humerus	Adult	Male	Shaft
				Tooth	17-25	-	2nd mandibular molar
				Tooth	Juvenile, 6-7	-	2nd maxillary molar
-	1004	3	Recovery Context	1st proximal foot phalanx	Adult	-	All
				2nd proximal hand phalanx	Adult	-	All
				Left temporal	Adult	M?	
				3 parietal fragments	Adult	-	
				2 rib shaft fragments	-	-	Left and right
				6 fibula fragments	Adult	-	Shaft
				Clavicle	Adult	-	Left shaft
				Scapula	Adult	-	Left medial border
				Tibia	Adult	-	Right proximal epiphysis
				Tibia	Adult	-	Proximal epiphysis
				Tibia	Adult	-	Right shaft
				Tibia	Adult	-	Right shaft; lamellar bone on medial surface
				Tibia	Adult	-	2 tibia shaft fragments
				Tibia	Adolescent	-	Right distal shaft
				3 Ulnae	Adult	-	3 left proximal shafts
				Ulna	Adult	-	1 right proximal shaft
				Ulna	Adult	-	Shaft

Feature	Context	Area	Context Type	Bones	Age	Sex	Other
				Humerus	Adult	-	Right shaft fragment
				2 Humeri	Adult	-	2 right distal shaft
				Femur	Adult	-	Left proximal shaft
				3 Femora	Adult	-	3 right proximal shafts
				4 femora	Adult	-	4 shaft fragments
				2 femora	Adult	-	2 distal shaft fragments
				Femur	Adult	-	Distal epiphysis
				Femur	Adult	Female	Left head
				2 femora	Adult	-	2 neck fragments
				Unidentified	-	-	6 long bone fragments
1	1006	2	Recovery Context	4th metatarsal	Adult	-	Left, all
				5th proximal hand phalanx	Adult	-	All
				Femur	Adult	-	Shaft
				Skull	Adult	-	1 fragment
-	1022	2	Definition spit over grave F4	Femur	Adult	-	Shaft fragment
				Rib	Adult	-	Shaft fragment
14	1025	2	Modern? pit	Vertebra	Adult	-	5th lumbar
				1st metacarpal	Adult	-	Right, all
				2nd metacarpal	Adult	-	Right, all
				Femur	Adult	-	Right proximal shaft
				Femur	Adult	Male	Left proximal, *coxa vara*
				Tibia	Adult	Male?	Right proximal shaft
				Humerus	Adult	-	Shaft
				Humerus	Adult	Male?	Right distal epiphysis
				Clavicle	Adult	-	Shaft
				Ulna	Adult	-	Left shaft
				Scapula	Adult	-	Right acromion with DJD at facet
				Scapula	Adult	-	Glenoid and medial border
				Scapula	Adult	-	Left spine with fracture, well-healed
				4 Ribs	Adult	-	4 left heads and necks
				6 ribs	Adult	-	6 shaft fragments
				Skull	Juvenile	-	12 skull fragments of the same cranium, includes orbit with *cribra orbitalia*
				Mandible	Juvenile, 1-1.5	-	Right 1st, 2nd molars, canine, 2nd incisor, all deciduous, probably belongs to skull above
				Skull	Adult	-	17 cranial fragments, 5 with ectocranial porosity, 1 with 2 button osteomas
				Skull	Adult	Male	Right temporal

Feature	Context	Area	Context Type	Bones	Age	Sex	Other
				Skull	Adult	Male	4 occipital fragments, 2 with porosity
16	1027	2	Roman ditch, 1st -3rd century	Humerus	Juvenile, under 5	-	Right proximal shaft
				Tibia	Juvenile, under 5	-	Left distal shaft
				Fibula	Juvenile, under 5	-	Proximal shaft
				Fibula	Juvenile, under 5	-	Distal shaft
36	1084	3	Victorian path	Femur	Adult	-	5 shaft fragments
45	1096	3	Roman pit, late 2nd century	Femur	Adult	-	Shaft
				Unidentified	-	-	3 fragments
44	1095	2	Modern? scoop	Skull	Adolescent	-	All, 68 fragments, including orbits
				Maxilla	Adolescent, 14 years	-	All incisors and canines, maxillary premolars, both left maxillary and mandibular 1st and 2nd molars, maxillary left 3rd molar
				Skull	Neonate	-	1 fragment
				Unidentified	-	-	5 fragments, 1 burnt
45	1096	3	Roman pit, late 2nd century	Pelvis	Adult	-	Right ischium
				Patella	Adult	-	Left and right patella, pair
				Carpal	Adult	-	Left capitae
				2nd proximal hand phalanx	Adult	-	All
				Intermediate hand phalanx	Adult	-	All
-	1097	3	?	Tibia	Adult	-	4 shaft fragments
56/60	1112/1119	3	Anglo-Scandinavian pit, 9th -10th century	Humerus	Adult	-	Left distal epiphysis
				Humerus	Adult	-	Shaft
				Radius	Young adult	-	Left distal bone
				5th metatarsal	Adult	-	Right shaft
-	1153	4	Recovery context	4th metatarsal	Adult	-	Left all
90	1208	4	Medieval ditch, 15th -16th century	Unidentified	-	-	5 long bone shaft fragments
142	1295	4	Roman ditch	Scapula	Adult	-	Medial border
160	1280	4	Roman pit, 2nd-3rd century	Ulna	Adult	-	3 shaft fragments
176	1328	4	Roman pit, 2nd- 3rd century	Tooth	Adult	-	Right maxillary 2nd incisor
174	1337	4	Roman ditch, 3rd century	Femur	Adult	-	Left proximal shaft

Feature	Context	Area	Context Type	Bones	Age	Sex	Other
				Mandible	Old middle adult	Male	1st, 2nd right incisor, right canine present, right 2nd and 3rd molar lost ante-mortem, left premolars lost ante-mortem, left 1st and 2nd molars present, right 2nd premolar is present with large cavity, all other teeth lost post-mortem
196	1392	4	Roman pit, 2nd century	Femur	Foetus/neonate	-	Distal shaft
				Ulna	Foetus/neonate	-	Left proximal
				Fibula	Foetus/neonate	-	Shaft
204	1422	4	Roman posthole, 2nd century	Unidentified	-	-	4 long bone shaft fragments
206	1426	4	Roman posthole	Skull	Foetus/neonate	-	Left and right petrous temporals
				Skull	Foetus/neonate	-	Sphenoid
				Skull	Foetus/neonate	-	Both orbits
				Skull	Foetus/neonate	-	4 cranial fragments
				Femur	Foetus/neonate	-	Right and left femur
				Humerus	Foetus/neonate	-	Right humerus shaft
209	1429	7	Post-medieval construction cut	Humerus	adult	-	Left shaft
				Humerus	Adult	-	Left shaft
				Humerus	Adult	-	Left proximal shaft
				Femur	Adult	Male?	Left proximal shaft
				Femur	Adult	-	Right shaft
				Clavicle	Adult	-	Right medial half
				Tibia	Adult	-	Right shaft with lamellar bone on medial and posterior surface, in 14 fragments
				Tibia	Adult	-	Right shaft, lamellar bone on all surfaces
215	1452/1454	7	Modern? pit	Femur	Juvenile	-	Proximal left third
				Femur	Juvenile	-	Right shaft
				Pelvis	Juvenile	-	Left and right ischiae, acetabuli, parts of iliae
				Clavicle	Adult	-	Right lateral quarter
				Clavicle	Juvenile	-	Right medial third with large costoclavicular ligament bone excavation
				Scapula	Adult?	-	Medial border
				Skull	Adult	-	Left temporal

Feature	Context	Area	Context Type	Bones	Age	Sex	Other
				Skull	Juvenile	-	Left temporal
				Skull	Adult and juvenile	-	7 cranial fragments
				Humerus	Juvenile, 11-12 years	-	Right, all
				Ulna	Juvenile	-	Right proximal half
				Radius	Juvenile	-	Right shaft
				Humerus	Juvenile	-	Distal shaft
				Humerus	Juvenile	-	Right proximal shaft, bone excavation for pectoralis major
				Humerus	Juvenile	-	Tiny shaft fragment
				3rd metatarsal	Juvenile	-	Left bone
				Humerus	Adult	-	Right proximal shaft with slight pectoralis major bone excavation
				Humerus	Juvenile	-	2 shaft fragments
				Mandible	Juvenile, 10-11 years	-	Left canine, first premolar, 1st and 2nd molars
				3rd metacarpal	Juvenile	-	Right all
				Skull	Juvenile	-	19 cranial fragments
				Skull	Adult	-	1 cranial fragment
				Humerus	Adolescent?	-	Right shaft
				Humerus	Adult	-	Right distal epiphysis
				Humerus	Adult?	-	Right distal shaft
				Humerus	-	-	Shaft fragment
				Ribs	-	-	2 shaft fragments
				Ulna	Juvenile	-	Shaft fragment

FIELD ARCHAEOLOGY SPECIALISTS LTD

UNIVERSITY OF YORK
KING'S MANOR
YORK YO1 7EP

TELEPHONE (01904) 433952
FASCIMILE (01904) 433935
E-MAIL arch18@york.ac.uk