



YORK ARCHAEOLOGICAL TRUST

CONSERVATION LABORATORIES

Burdale BUR 07

Assessment of Finds for

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by

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ABSTRACT:

This report concerns the assessment of artefacts recovered during excavations by Dr Julian Richards of the University of York at Burdale, 2007 season. Estimates and recommendations for further work are included.

INTRODUCTION

79 artefacts were delivered to the York Archaeological Trust Conservation Laboratory on 8th June, 2007 for assessment. A second batch of 21 artefacts was brought in on 29th June, 2007. The artefacts consist of 57 iron objects, 3 lead alloy objects, 21 copper alloy objects, 18 objects of osseous material and 1 object described as possibly of silver. The condition of the various classes of material is summarised and indicators of unusual preservation noted. The potential of the assemblage for further analysis and research is discussed, and recommendations made for further investigative conservation and long term storage.

AIMS AND OBJECTIVES

This report aims to meet the requirements of MAP2 (English Heritage, 1991) to produce a stable site archive. This has involved X-radiography and an assessment of the condition, stability and packaging of the finds. Standard YAT procedures were followed; 67 metallic recorded finds were assessed and (with the exception of Lead alloy) X-rayed on 4.5 plates (x6758-6760, 6773 and 6779). An assessment of each find is presented in the tables in the Appendix.

PROCEDURES

The iron, copper, and silver objects, as well as those bone and antler objects with iron rivets, were X-rayed using standard Y.A.T. procedures and equipment. One sheet of film was used, and each plate was given a reference number in the YAT conservation laboratory series. The X-ray number was written on each recorded find bag. Each image on the radiograph was labelled with its recorded finds number. The plates were packaged in archival paper pockets.

All finds were examined under a binocular microscope at X20 magnification. The material identifications were checked and observations made about the condition and stability of the finds, and recorded below.

CONDITION ASSESSMENT SUMMARY

Iron Overall the condition of the iron objects was fair to good, and very little active corrosion was observed. Most objects had a minimal covering of soil and the typical orange/brown corrosion products associated with well-aerated deposits. Very little mineral preserved organic material was observed on any of the objects. The X-rays showed that in the majority of cases the metal cores were present but with thinning and pitting to some degree.

Copper alloy The copper alloy was generally in good condition with almost no active corrosion observed. The cores of the majority of the artefacts, as shown by the X-rays were mostly solid and even.

Lead alloy The lead alloy was in fairly good condition, although objects 4, 17 and 195 had damage to their edges. Active corrosion should be kept at bay by dry storage and removal of paper and card (sources of organic acids) from its vicinity (Cronyn, 1990, 207).

Osseous material The bone and antler, of which the majority were comb fragments, was generally in very good condition. The objects tended to have smooth surfaces and there was very little evidence for cracking or warping. The objects were cleaned of soil and given finds bags with jiffy foam inserts as part of the first aid process. By far the majority of the objects made from osseous materials were probably of antler, rather than bone.

STATEMENT OF POTENTIAL

This report was written without seeing the site, and without the benefit of discussion with other members of the project team.

Indicators of preservation

The lack of bulky corrosion crusts suggests that the burial environment was benign, especially for copper alloy. Mineralisation was occurring particularly along worked edges or broken/fractured regions.

Evidence of technology, craft or industry

There was a significant number of iron knife blades and knife blade fragments in the collection. There were quite a number of different shapes but all were found to be whittle tang knife blades. One knife blade, SF69, was found to have a groove running along the back.

There was one possible iron punch (SF104), such small tools normally being used for non-ferrous metal working or to work wood, leather and bone (Ottaway, 1992, 516). SF243 is a handle from a possible knife or tool, made of an antler tine.

Dating Evidence

The coins (SFs26, 29, 30, 32 and 33) are obvious indicators of date, the majority being initially identified as Roman. Several other objects may be indicative of date such as the different comb forms, almost all of which were of antler, and the copper alloy brooch terminal (SF189) and brooch (SF21). There is also one copper alloy violin-bow brooch (SF19) whose form may be datable.

RECOMMENDATIONS

Recommendations for further work are highlighted in bold in the tables together with an estimate of cost.

Further Investigative Conservation

Investigation for research purposes Further investigative conservation is proposed for the following finds to aid identification and clarification:

SF24 and 206 copper alloy decorative pin heads;
SF24 iron faceted pin head;
SF26 copper alloy coin;
SF39 possible iron handle fragment;
SF43 possible iron textile processing spike;
SF97 sheet or possible object;
SF104 possible iron punch;
SF142 iron strip fragment or possible knife blade fragment;
SF235 iron strip with rivet.

Further work only if requested Selected items could have corrosion removed fully for publication or display and quotes for the items selected can be arranged individually to suit your requirements. Further investigation of the majority of complete knife blades has not been recommended or estimated for in the costs below as the X-ray images are clear enough to determine their shape and form. However, if any knife is required for illustration or photography then quotes can be supplied for total corrosion removal.

Analysis and Specialist Support

To be arranged after the investigative conservation has been completed and not included in the costs itemised in above.

XRF: X-ray fluorescence analysis could be carried out on SF1 and/or SF5 to identify the metal/alloy, if this is found to be necessary.

Numismatics: The following coins are recommended for referral to a numismatist: SFs26, 29, 30, 32, 33.

Packing and Long Term Storage

Packaging on arrival at the lab The finds arrived packed in finds bags in two plastic containers. Some bags had condensation within them from objects which were not entirely dry. These objects were laid out to air dry and new bags were given where necessary. The bags were also given jiffy foam inserts. Note: the majority of the bags are labelled with biro which will fade quite rapidly, in some cases to the point of illegibility. It is recommended that the bags are re-labelled using a permanent, fade-resistant pen, such as Artline™ marker pens.

Long-Term Storage The metal finds should be stored in a desiccated environment at less than 15% Relative Humidity. The desiccated environment will need to be maintained. The osseous material should be stored in a stable environment of between 50-55% RH.

RESOURCE REQUIREMENTS

The following costs are based on the objects identified above and may not reflect the aims and objectives of the project. It is recommended that requirements for further conservation are discussed with the project director.

Investigative conservation (if all work is requested)	£1092.00
Materials	£ 90.00
XRF analysis (if requested)	£ 100.00
Conservation report	£ 100.00
Administration	£ 80.00
ESTIMATED TOTAL COST (<u>excluding V.A.T</u>)	£1462.00

REFERENCES

Bertholon, R., A Descriptive Method for Metallic Corrosion, unpublished work in prep., ref SOMA, Conservation and Restoration Department, University of Paris 1 Pantheon-Sorbonne, 2000.

Cronyn, J. M., The Elements of Archaeological Conservation, Routledge, 1990.

English Heritage, Management of Archaeological Projects, 1991.

Ottaway, P., Anglo-Scandinavian Ironwork from Coppergate, The Archaeology of York, AY17/6, CBA, 1992.

Ottaway, P. and Rogers, N., Craft, Industry and Everyday Life: Finds from Medieval York, The Archaeology of York, AY17/15, CBA, 2002.

Appendix: Assessment Tables

1. Iron

X-ray	RF	Context	Assessment
6758	18	1064	Labelled as ?Natural concretion/weight. Strong magnetic response and solid image on the X-ray shows this to be iron. Possible object/?pin head. Soil in interstices, no active corrosion. Good condition. Recommendations: no further action.
6758	35	1004	Labelled as Fe loop. Possible 'D'-shaped buckle frame fragment or loop. Good condition, reddish surface with soil over, two ends broken. <u>X-ray</u> shows the metal core of the object to be solid with only minimal degradation. Recommendations: no further action.
6758	36	1005	Labelled as Fe buckle. 'D'-shaped buckle frame in good condition. Reddish surface with soil over and only very small spots of active corrosion and minimal cracking. <u>X-ray</u> shows the metal core to be fairly thick but with degraded edges. Recommendations: no further action.
6759	37	1019	Labelled as buckle. Iron loop, possible buckle frame with very little corrosion on the majority of the surface. Crusty areas of reddish corrosion on one side. Overall condition is good to fair. <u>X-ray</u> shows the metal core to be fairly thin with areas of degradation corresponding to the crusty corrosion areas. Ends are overlapped. Recommendations: no further action.
6759	38	1025	Labelled as Fe ?clasp. Two objects. One broken and bent object with a curved protrusion, breaks are fresh, crusty reddish corrosion but this does not appear active. Good to fair condition. Other object is a possible sheet fragment with large stone inclusions in the corrosion products, again fairly good condition. <u>X-ray</u> shows the metal core of the first object to be patchy and thin and the metal core of the sheet to be almost completely mineralised. Recommendations: no further action.
6759	39	1043	Labelled as Fe loop. <u>X-ray</u> shows the metal core to be fairly solid, with a twisted construction and a rolled over end indicating this to be a handle fragment. Soil over thin reddish corrosion products and spots of active corrosion. Overall condition is good. Recommendations: investigation of cross-section and end to show shape and confirm ID (estimate £66).
6759	40	1179	Labelled as Fe loop. Soil over reddish medium thick corrosion products with areas of active corrosion and minor cracking. One end broken. Overall condition is fair. <u>X-ray</u> shows the metal core to be fairly thick but with areas of degradation to the edges. Possible staple fragment. Recommendations: no further action.
6759	43	1004	Labelled as Fe nail/?heckle pin. Probable textile processing spike (heckle pin). Fair to poor condition with areas of spalling, cracking and bright orange active crusty corrosion. <u>X-ray</u> shows the metal core to be fairly solid but with pitting along the edges. Recommendations: investigate end to identify as textile processing spike (estimate £33).
6759	52	1046	Labelled as iron nail? Possible knife blade fragment with intact tang. Broken at other end although possible perforation may be present. No active corrosion, good condition. <u>X-ray</u> shows the metal core to be fairly thin and patchy. Recommendations: investigate broken end for identification (estimate £33).

6759	64	1004	<p>Labelled as Fe blade. Iron fragment with a fresh break near the centre. Patches of active weeping corrosion otherwise very little corrosion. Both ends appear broken and worn. <u>X-ray</u> shows the metal core to be thin with visible striations.</p> <p>Recommendations: no further action.</p>
6759	65	1004	<p>Labelled as Fe blade. Tip section of an iron knife blade. Soil over reddish corrosion products. Broken edge and spots of active corrosion. Fair overall condition. <u>X-ray</u> shows the metal core to be thin with large corrosion pits.</p> <p>Recommendations: no further action.</p>
6759	66	1005	<p>Labelled as Fe blade? Iron fragment, quite heavy with a reddish surface covered with soil. No active corrosion, good condition. <u>X-ray</u> shows the metal core to be thick with thinning at edges.</p> <p>Recommendations: no further action.</p>
6759	67	1018	<p>Labelled as Fe knife. Whittle tang knife blade fragment. Crusty corrosion with soil over. Tang is intact, other end broken. Minor cracking and spots of active corrosion. <u>X-ray</u> shows the metal core to be fairly thick but with thinning along one edge and towards the end of the tang. Back is slightly curved.</p> <p>Recommendations: no further action.</p>
6759	68	1018	<p>Labelled as Fe knife. Whittle tang knife blade fragment in two pieces, the tip having been broken recently. End of the tang is also broken. Areas of crusty corrosion products and spots of active weeping corrosion. Overall condition is fair. <u>X-ray</u> shows the metal core to be thin and patchy, especially along the cutting edge.</p> <p>Recommendations: no further action.</p>
6759	69	1019	<p>Labelled as Fe blade. Whittle tang knife blade in two pieces, the tip having been broken off in a relatively fresh break. Very thin reddish corrosion with areas of loss to spalling. Minimal cracking. Condition is fair. <u>X-ray</u> shows the metal core to be patchy and thin. Groove running along back of blade but does not extend the entire length of the blade.</p> <p>Recommendations: no further action.</p>
6759	70	1050	<p>Labelled as Fe blade. Whittle tang knife blade in two pieces, fresh break near centre with active corrosion. Covered in soil over thin, crusty corrosion products. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be patchy and thin with degradation to the edges.</p> <p>Recommendations: no further action.</p>
6759	71	1050	<p>Labelled as Fe blade? Three iron objects, one stone. Two possible fittings/strips with broken ends and one strip with rounded, perforated ends. All are in fairly good condition with minimal corrosion. Good general condition. <u>X-ray</u> shows the metal cores to be thin with corrosion pits. Larger object is more solid with degradation to the sides.</p> <p>Recommendations: no further action.</p>
6759	72	1066	<p>Labelled as Fe blade. Sand and silt over thin orange brown corrosion products. Areas of active corrosion near hook. Broken at one end. Object is bent into a 'U'-shape. Overall condition is fair. <u>X-ray</u> shows the metal core to be thin and pitted with degradation to the edges. Possible latch/hook or shears blade.</p> <p>Recommendations: investigation of cross-section to reveal shape (estimate £66).</p>
6759	73	1072	<p>Labelled as Fe blade. Soil over orange surface with very little corrosion. Object is very solid and does not appear to have a cutting edge. Overall condition is good. <u>X-ray</u> shows the metal core to be pitted and degraded.</p> <p>Recommendations: no further action.</p>

6759	74	1100	<p>Labelled as Fe blade. Blade of iron whittle tang knife with a slight bend to the end of the tang. Thick layers of soil over thin orange brown corrosion products. Overall condition is good. <u>X-ray</u> shows the metal core to be thin and pitted with areas of the back being completely mineralised.</p> <p>Recommendations: no further action.</p>
6760	75	1157	<p>Labelled as Fe knife. Whittle tang knife blade, thin reddish corrosion products with soil over. Wear and corrosion pits along cutting edge and more crusty corrosion along the back. Areas of active corrosion, especially at the tip where there is substantial loss. Overall condition is poor to fair. <u>X-ray</u> shows the metal core to be thin and severely pitted.</p> <p>Recommendations: no further action.</p>
6760	76	1179	<p>Labelled as Fe blade. Two pieces; the larger is a probable whittle tang knife blade, very little corrosion, some spalling, spots of active corrosion. Fair condition. Smaller piece has similar corrosion. <u>X-ray</u> shows the metal core to be fairly thin with pitting at the edges, split/crack along the back of the blade. Smaller piece has very little metal left in the core.</p> <p>Recommendations: no further action.</p>
6760	77	1180	<p>Labelled as Fe blade. Whittle tang knife blade in two pieces. Bulky soil layers over orange brown corrosion products. No active corrosion. Good condition. <u>X-ray</u> shows the metal core to be thin with striations visible and thinning near the tip.</p> <p>Recommendations: no further action.</p>
6773	78	1061	<p>Labelled as Fe horseshoe. Toe and quarter fragment of an iron horseshoe. Good condition, no active corrosion. Reddish surface with soil over. <u>X-ray</u> shows the metal core to be fairly thin but even. Remains of five nail holes, one of which retains the nail.</p> <p>Recommendations: no further action.</p>
6773	79	1071	<p>Labelled as Fe horseshoe. 'U'-shaped horseshoe. Very solid, good condition, one spot where outer surface has spalled off due to active corrosion. <u>X-ray</u> shows the metal core to be solid. Nails are set in a fuller in a four/three pattern. All seven nails survive.</p> <p>Recommendations: no further action.</p>
6773	80	1188	<p>Labelled as Fe object. Heel fragment of a horseshoe. <u>X-ray</u> shows the remains of four rectangular nail holes, one of which retains the nail. The largest hole is broken through. The metal core is fairly thick but pitted. Overall condition is good. No active corrosion.</p> <p>Recommendations: no further action.</p>
6760	81	1036	<p>Labelled as Iron ring. Small intact iron ring with areas of bulky corrosion. No active corrosion, good condition. <u>X-ray</u> shows the metal core to be mainly intact but with areas of degradation corresponding to the bulky areas of corrosion. Think break in one area.</p> <p>Recommendations: no further action.</p>
6760	82	1062	<p>Labelled as Fe ring. Intact iron ring with very little corrosion. A few areas of crusty reddish corrosion products. Overall condition is good. <u>X-ray</u> shows the metal core to be intact and mostly solid.</p> <p>Recommendations: no further action.</p>
6760	83	1002	<p>Labelled as Metal pin. Iron horse-shoe nail with 'D'-shaped head. Fairly flat with thin and crusty reddish brown corrosion products with inclusions. Good overall condition. <u>X-ray</u> shows the metal core to be fairly solid and intact except for wear to the outer edges and degradation to the tip.</p> <p>Recommendations: no further action.</p>

6760	84	1011	<p>Labelled as Fe pin. The majority of the surface of this possible iron pin is relatively corrosion free but with some areas of more crusty reddish corrosion. The head end has a large and bulky area of corrosion. Overall condition is good. <u>X-ray</u> shows the metal core to be mainly solid and intact but with areas of degradation corresponding to the crusty corrosion areas.</p> <p>Recommendations: no further action.</p>
6760	97	1046 E	<p>Covered in a crusty mix of corrosion products, inclusions and soil. Fair condition. Object is thin and appears to form an 'L'-shape. One edge is slightly bent over. Broken at two ends. <u>X-ray</u> shows the metal core to be thin and patchy.</p> <p>Recommendations: investigation for identification if requested (estimate £100).</p>
6760	104	1295	<p>Labelled as Fe punch? Two objects. Possible punch has soil over very thin corrosion products though there are more crusty, bulky areas with some active spots of corrosion. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be solid and mostly intact with some thinning at the edges.</p> <p>The second object is thin and slightly bent, again with areas of crusty, bulky reddish corrosion with active spots; rest of the object has very little corrosion. Some loss to spalling. Overall condition is fair. <u>X-ray</u> shows this object to have a fairly thin metal core with degradation in the areas of bulky corrosion. Also a possible tool.</p> <p>Recommendations: investigation of ends and cross-section of possible punch to reveal the shape (estimate £66).</p>
6760	112	1012	<p>Labelled as Fe object. Sand and silt over medium thick reddish brown corrosion products. Areas of crusty red and orange active corrosion and there is some loss from spalling. Overall condition is fair. <u>X-ray</u> shows the metal core to be thin with areas of voiding. Spots of possible non-ferrous metal at one end which may be remains of plating or industrial residue in the corrosion products. The object appears to be a loop; possibly a chain link.</p> <p>Recommendations: investigation of possible non-ferrous plating (estimate £100).</p>
6760	113	1018	<p>Labelled as Fe object. Sand and silt over fairly bulky orange to reddish brown corrosion products. Spots of active corrosion and minor cracking. Object is bent into a 'U'-shape. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be reasonably intact but with degradation to the sides. One end is broken. Probable knife blade.</p> <p>Recommendations: investigation of cross-section to confirm identification (estimate £66).</p>
6760	123	1050	<p>Labelled as Fe loop/handle. Soil over thin corrosion products which are bulky in some areas. Spots of active corrosion and some loss to spalling. Object has sub-round cross-sections at the ends and becoming flat towards the centre. Area of loss/wear near the centre. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be fairly solid but with degradation to the edges. The shape of the cross-section would suggest this is handle although with the broken ends this is not certain.</p> <p>Recommendations: no further action.</p>
6760	124	1054	<p>Labelled as Iron object. Probable perforated sheet fragment. Thick layer of sand and silt over thin orange brown corrosion products with small spots of active corrosion. Large area of mineral preserved organic material on one end but this appears to be amorphous and is probably from the burial environment. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be patchy and thin. Remains of two round perforations visible.</p> <p>Recommendations: no further action.</p>

6760	125	1054	<p>Small amounts of soil over thin corrosion products which are crusty in some areas. Object is bent into a 'U'-shape. Spots of active corrosion but overall condition is good. <u>X-ray</u> shows the metal core of the object to be fairly thick but thinning out towards one side. Both ends broken. Probable knife blade.</p> <p>Recommendations: investigation of cross-section to reveal shape (estimate £66).</p>
6760	126	1082	<p>Labelled as Fe object. Sand and silt over medium thick orange brown corrosion products with some spots of possible active corrosion. Overall condition is good. <u>X-ray</u> shows the metal core to be patchy and thin with degradation to the edges. Possible knife blade.</p> <p>Recommendations: 2-3 cross-sections to identify shape and aid identification (estimate £100).</p>
6760	127	1062	<p>Labelled as Fe sheet frag and X-ray confirms this. There is a thin layer of soil over thin orange brown corrosion products. A few spots of possible active corrosion. All edges broken. Overall condition is good. <u>X-ray</u> shows the metal core to be thin and patchy with some areas of complete mineralisation.</p> <p>Recommendations: no further action.</p>
6773	128	1071	<p>Labelled as Fe object. Appears to be two pierced strips riveted together. One end is broken and bent with active corrosion at the bend. Otherwise good condition with very little corrosion, surface is reddish brown with soil over. <u>X-ray</u> shows the metal core to be fairly thick and even with some thinning at the edge. Rivet is round.</p> <p>Recommendations: no further action.</p>
6760	133	1121	<p>Labelled as iron object. Soil over orange surface with very little corrosion. The object is very solid with oval cross-section becoming flatter towards one end. Overall condition is good. <u>X-ray</u> shows the metal core to be solid with slight damage to the edges.</p> <p>Recommendations: no further action.</p>
N/A	138	1188	<p>Labelled as Fe object. Roughly one half of a very large iron horseshoe with a clip at the front of the toe surviving. Very solid, very little corrosion, reddish brown surface with soil over. Good condition.</p> <p>Recommendations: no further action.</p>
6760	142	1213	<p>Labelled as Fe strip. Covered in a yellowish thin corrosion crust with soil over. No active corrosion. Good condition. <u>X-ray</u> shows the metal core to be thin and pitted. Both ends appear broken. The shape suggests this may be a knife blade fragment or strip fragment.</p> <p>Recommendations: investigation of cross-section to aid identification (estimate £66).</p>
6760	190	1002	<p>Labelled as Fe blade. Blade of iron whittle tang knife. Surface covered in a crusty mix of corrosion products, soil and inclusions. Some spots of active corrosion. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be degraded along the back and almost completely mineralised at the tip.</p> <p>Recommendations: no further action.</p>
6773	193	1002	<p>Labelled as Fe chisel? Possibly a tool. Good condition, very little corrosion, reddish surface with soil over. Cross-section near head is rectangular, becoming flatter towards the tip. Head is rectangular. <u>X-ray</u> shows the metal core to be solid and even.</p> <p>Recommendations: no further action.</p>

6779	226	1443	<p>Labelled as Fe object. Iron knife blade fragment. Some soil over thin but occasionally crusty orange corrosion. Areas of active corrosion and some spalling and cracking especially at one end. Overall condition is fair to poor. <u>X-ray</u> shows the metal core to be fairly thick but with degradation at the edges. Striation faintly visible running down centre.</p> <p>Recommendations: no further action.</p>
6779	233	1233	<p>Labelled as Fe pin. Some soil over uneven corrosion. Whole surface is uneven, cracked and spalling with areas of bright orange active corrosion. Overall condition is poor. <u>X-ray</u> shows the metal core to be thin and patchy. Both ends are broken, one slightly bent.</p> <p>Recommendations: no further action.</p>
6779	235	1040	<p>Soil with inclusions over uneven reddish surface. Some spalling has taken place. Overall condition is fair to poor. Cross-section seems to be triangular. <u>X-ray</u> shows the metal core to be fairly thick but patchy. Rivet visible at one end, going through object.</p> <p>Recommendations: investigation of cross-section around rivet to aid identification (estimate £66).</p>
6779	238	1382	<p>Soil with inclusions, including possibly mineral preserved organic material, over thin reddish/yellow corrosion products. Areas of mineralisation visible at surface. Overall condition is fair to poor. <u>X-ray</u> shows the metal core to be relatively thick and even but with almost complete mineralisation of one end.</p> <p>Recommendations: no further action.</p>
6779	244	1472	<p>Labelled as Knife blade. Complete iron whittle tang knife blade. Soil over possible areas of mineral preserved organic material and very thin corrosion products. No active corrosion. Overall condition is good. <u>X-ray</u> shows the metal core to be relatively even and intact thought with thinning and mineralisation along cutting edge.</p> <p>Recommendations: no further action.</p>
6779	248	1472	<p>Labelled as Fe pin. Complete iron pin, end possibly broken. One area of crusty reddish corrosion with cracking, otherwise good condition with soil over thin corrosion products. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be fairly even though with some pitting and degradation to the edges and end.</p> <p>Recommendations: investigation of shape of head (estimate £33).</p>
6779	249	1472	<p>Labelled as Metal. Possible iron textile processing spike. Covered in a crusty mix of corrosion products, inclusions and soil. Some spalling due to active corrosion. Overall condition is fair. <u>X-ray</u> shows the metal core to be thick but with areas of degradation at the sides. Object appears to have a burred end which may suggest attachment to wool comb plate.</p> <p>Recommendations: no further action.</p>
6779	255	1472	<p>Labelled as Metal. Possible iron sheet or strip fragment. Soil and mineral preserved organic material probably from the burial environment. No active corrosion, good general condition. <u>X-ray</u> shows the metal core to be thin, patchy and almost completely mineralised.</p> <p>Recommendations: no further action.</p>
6779	263	1287	<p>Labelled as Metal. Possible iron nail. Very little corrosion, though some reddish crusty areas. No active corrosion. Good condition. <u>X-ray</u> shows the metal core to be fairly solid but somewhat uneven and thinning at the end.</p> <p>Recommendations: no further action.</p>

6779	275	1472	Labelled as Fe buckle? Two objects, both fragments of possible square buckle frames. Both have two broken ends but these are not fresh and they do not appear to fit together. Both have soil over medium thick corrosion products. The larger of the two is in slightly worse condition with some spalling and active corrosion. <u>X-ray</u> shows the metal cores to be patchy and thin. Recommendations: no further action.
6779	280	1471	Labelled as Fe? Pin. Small pin/nail with lead alloy head as shown by the <u>X-ray</u> . No active corrosion. Good condition. Recommendations: no further action.
6779	286	1258	Labelled as Fe ?blade. Probable iron strip fragment. Slightly bent. Soil over medium thick corrosion products, no active corrosion. Good overall condition. <u>X-ray</u> shows the metal core to be patchy and thin. Recommendations: no further action.

2. Copper Alloy/Other metals

X-ray	RF	Context	Assessment
6758	1	1004	Labelled as Ae sheet?? Small and very thin fragment of white metal sheet, corrosion products and the nature of the cracking would suggest lead but the X-ray image is very faint. Possibly tin. Fragile and cracking with soil over light grey/white surface. Recommendations: XRF analysis to confirm material if context warrants this (cost £50.00).
6758	5	1054	Labelled as ?silver frag. Small fragment of white metal, possibly tin or aluminium. No X-ray image and very little corrosion suggests this is not silver. XRF analysis would determine the metal/alloy if necessary. Recommendations: XRF analysis to confirm material if context warrants this (cost £50.00).
6758	11	1155	Small copper alloy decorated strip fragment. Dark green surface with some pitting and some spots of possible active light green corrosion. Fair to good condition. X-ray shows the metal core to be thin and pitted with a row of incised decorative half-moon shapes running down either side. Recommendations: no further action.
6758	12	1186	Labelled as Cu alloy? Small fragment of copper alloy. Covered in soil with inclusions over light green powdery corrosion in places. Losses to the edges. <u>X-ray</u> shows the metal core to be thin. Recommendations: no further action.
6758	15	1054	Labelled as ?bronze ringlet. Small, very thin ring which does not show up on the X-ray. Soil over dark brown surface. Probably copper alloy. Overall condition is good. Recommendations: no further action.
6758	16	1067	Labelled as Ae finger ring. Complete copper alloy finger ring with the remains of a glass setting. Surface is blueish green to brown and smooth with soil in interstices. Good condition. The glass fragments are opaque and yellow. Recommendations: no further action.

6758	19	1094	<p>Labelled as Cu brooch. Complete copper alloy violin bow brooch. Fair to good condition, surface is mostly a smooth green patina but with areas of pitting and lighter green powdery corrosion. <u>X-ray</u> shows the metal core to be solid and even.</p> <p>Recommendations: no further action.</p>
6758	20	1072	<p>Labelled as Ae buckle. Small square copper alloy probable buckle frame. Good condition, no active corrosion; smooth green patina. <u>X-ray</u> shows the metal core to be solid and even.</p> <p>Recommendations: no further action.</p>

6758	21	1063	<p>Labelled as Ae gilt hinge. Probable copper alloy brooch with missing pin. Remains of catch plate visible. Surface is uneven with areas of pitting and loss to spalling with reddish cuprite showing through. Areas of fresh yellow metal showing in some areas with file/wear marks and this is probably the alloy of the brooch itself as opposed to gilding. Overall condition is fair. <u>X-ray</u> shows the metal core to be fairly even though thinning in some areas. Two round perforations visible near the spring.</p> <p>Recommendations: no further action.</p>
6758	22	1057	<p>Labelled as Cu pin. Complete copper alloy pin bent into a 'V'-shape. Decorative head. Smooth green patina with some pits. Overall condition is good. <u>X-ray</u> shows the metal core to be solid and even.</p> <p>Recommendations: no further action.</p>
6758	23	1059	<p>Labelled as Ae pin. Complete copper alloy pin with decorative head with ring and dot motif. Slightly bent. Smooth blueish green surface, good condition, no active corrosion. <u>X-ray</u> shows the metal core to be solid and even, thinning at the head.</p> <p>Recommendations: no further action.</p>
6758	24	1072	<p>Labelled as Ae faceted pin head. Complete polygonal pin head with dot ornament. Shank missing. Soil over black and green surface. No active corrosion, good condition. <u>X-ray</u> shows the metal core to be solid and even.</p> <p>Recommendations: soil removal to reveal decoration if required for illustration or photography (estimate £33).</p>
6758	25	1102	<p>Labelled as Ae pin. Relatively complete copper alloy pin with decorative head and break to the tip. Surface is covered in soil over a smooth green/brown surface. Some fresh wear marks on the shank. Good condition. <u>X-ray</u> shows the metal core to be solid and even with slight pitting to the surface.</p> <p>Recommendations: no further action.</p>
6758	26	1018	<p>Labelled as Roman coin. Complete copper alloy coin. Soil over dark green smooth patina with crust in places, good condition no active corrosion. <u>X-ray</u> shows the outlines of a motif but this is not clear.</p> <p>Recommendations: refer to numismatist, could have corrosion removed if required (estimate £66).</p>
6758	28	1054	<p>Labelled as copper alloy frag. Very small fragment of copper alloy which is fragile with an uneven surface. Fair condition. <u>X-ray</u> shows the metal core to be mineralised.</p> <p>Recommendations: no further action.</p>
6758	29	1058	<p>Labelled as Ae coin. Probably silvered/tinned copper alloy Roman coin. Wear to the edges but otherwise good condition with some crusty areas of corrosion over blueish green patina. <u>X-ray</u> shows the motifs on both sides and some lettering.</p> <p>Recommendations: referral to numismatist.</p>
6758	30	1060	<p>Labelled as Ae coin. Complete copper alloy coin with wear to the edges. Good condition, no active corrosion, soil over brown patina. <u>X-ray</u> shows the metal core to be intact with motifs clearly visible as well as some lettering.</p> <p>Recommendations: referral to numismatist.</p>
6758	32	1072	<p>Labelled as Ae coin. Complete copper alloy coin with wear to the edges. Motifs on both sides clearly visible. Some pitting to the surface which has soil over a dark brown/black patina. No active corrosion, good overall condition. <u>X-ray</u> shows the metal core to be fairly thin with a void towards one side.</p> <p>Recommendations: referral to numismatist.</p>

6758	33	1074	Small disc or coin, probably of copper alloy. Soil over black and greenish surface with very small spots of probable cuprite showing through in some areas. Condition is fair to good. <u>X-ray</u> shows a pitted surface. No motif visible but some contours suggest this may be a coin. Recommendations: referral to numismatist.
6758	189	1002	Labelled as brooch terminal. Terminal section from copper alloy penannular brooch. Decorative grooves near terminal. Soil over a light green surface with some areas of powdery corrosion which may be active. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be solid and even. Recommendations: no further action.
6779	206	1471	Labelled as Ae pin. Complete copper alloy pin with decorative head. Slightly bent. Soil over green patina, with some areas of light green powdery corrosion which may be active as well as areas of fresh metal. Overall condition is fair to good. <u>X-ray</u> shows the metal core to be intact and even with a slight thickening near the tip and a decorative head with perforations. Recommendations: investigation of head to reveal decoration (estimate £66).
6779	215	1101	Labelled as Ae pin. Complete copper alloy pin with solid head. Soil over greenish brown surface which is slightly crumbly in places. Bend with cracking near centre. Fair general condition. <u>X-ray</u> shows the metal core to be solid and even except for the crack in the centre. Recommendations: no further action.
6779	245	1472	Labelled as Bronze ring. Small copper alloy ring. Surface has soil over a fragile and slightly crumbly light green surface. Overall condition is fair. X-ray shows the metal core to be even and solid. Recommendations: no further action.

3. Lead Alloy

X-ray	RF	Context	Assessment
N/A	4	1011	Labelled as Pb lump. A piece of lead alloy folded sheet. Surface is in relatively good condition with soil over a yellowish corrosion crust. Edges are damaged with reddish lead oxide showing through in layers. Recommendations: no further action.
N/A	17	1003	Labelled as Pb weight. Lead alloy probable weight. Surface is in relatively good condition with soil over a yellowish corrosion crust. Edge at one end is damaged with reddish lead oxide showing through in layers. Horizontal edge is overlapped. Recommendations: no further action.
N/A	194	1002	Labelled as Pb. Lead alloy sheet fragment/waste. Good condition, no active corrosion. Slightly pitted blackish surface. Edges curved up. Recommendations: no further action.
N/A	195	1002	Labelled as Pb. Lead alloy folded sheet fragment/offcut. Soil over dark grey surface with spots of white corrosion which could be active. Some pits and damage to edges where reddish lead oxide is showing through. Sheet is thick. Recommendations: no further action.

4. Bone/Antler

X-ray	RF	Context	Assessment
N/A	147	1009	Labelled as bone comb. Antler end tooth plate fragment from a double sided comb. Most of the teeth are intact. Good condition, smooth surface mottled light colour. Broken on one side. Very slight iron staining from a rivet. Recommendations: no further action.
N/A	148	1019	Labelled as bone needle. Probable bone pin/needle tip. Broken at one end otherwise good condition. Smooth surface with tool marks. Mottled colour. Recommendations: no further action.
N/A	149	1036	Labelled as worked bone. Arrived at lab in slightly damp conditions and small spots of white mold had started to grow. This was removed using Industrial Methylated Spirits. Antler pin in two halves. Perforated head. Slightly mottled colour on surface which is smooth with only small scratches in some places. Good condition. Recommendations: no further action.
N/A	150	1046	Labelled as bone comb. Two fragments of bone comb side plates. Both have incised line decoration in some areas and both have broken ends. Very good condition, very smooth light yellow/white surfaces. Remains of grooves on edges. Recommendations: no further action.
N/A	151	1049	Labelled as bone needle. Perforated antler object, good condition. Soil in interstices. Marks and scratches on the surface. Broken end. Recommendations: no further action.
N/A	152	1054	Labelled as bone needle. Probable antler pin in good condition. Smooth surface with tool marks visible. Mottle colour. No perforation at the 'head' end. Slight scratches to the surface. Recommendations: no further action.
N/A	153	1054	Labelled as bone comb. Two fragments of probable antler comb tooth plates. One fragment has an iron rivet attached. Also a thin piece of iron, possibly a nail, wire or pin fragment, broken at both ends. The antler is in good condition with teeth intact. Smooth surface, mottled in colour with tool marks visible under magnification. Recommendations: no further action.
6758	154	1054	Labelled as bone comb. Six pieces of the same double sided antler comb. Surfaces of the side plate fragments are smooth and decorated with incised lines. The fragments are a dark brown mottled colour. Very good condition. Two iron rivets survive attached to tooth plate fragments. <u>X-ray</u> shows the metal core of the rivets to be solid and even. Recommendations: no further action.
6758	155	1109	Labelled as bone comb. Two pieces of bone comb, both with the remains of two rivets. The bone itself is in good condition with very little cracking. Soil in interstices and the corrosion of the rivets has stained the area around the rivet hole but only very slightly. <u>X-ray</u> shows the metal core of the rivets to be thin and mineralised. Recommendations: no further action.
6758	156	1158	Labelled as bone comb. Four pieces of antler comb, three with remains of iron rivets. The pieces do not join. The antler is in good condition structurally, though with scratches and marks to the outer surfaces. Soil in interstices. Slight iron staining around the rivets. <u>X-ray</u> shows the metal core of the rivets to be solid and intact. Recommendations: no further action.

6758	157	1421	<p>Labelled as bone comb. Arrived at the lab wrapped in damp tissue and still slightly moist. Collection consists pieces of at least three separate antler combs with iron rivets including tooth plates, side plates and end plates as well as individual, broken teeth. The antler of all the pieces is generally in fair to good condition with wear to some of the pieces and some pieces having a scratched and marked surface, in one or two cases severely so. There is soil in interstices and slight iron staining from the rivets. <u>X-ray</u> shows the metal core of the rivets to be solid and intact. There were also two small bones found with the comb fragments: these are possible bird bones.</p> <p>Recommendations: pieces of the different combs could be joined for publication/illustration if required (estimate £66).</p>
6758	158	Test pit J, layer 2	<p>Labelled as comb frag. Fragment of double sided probable antler comb with three tooth plates, one of which is loose and incomplete. One complete iron rivet survives and part of another at one broken end. <u>X-ray</u> shows the iron rivet to be fairly solid with thinning at the edges. Most of the teeth are broken. Scratches to the surface but otherwise good condition.</p> <p>Recommendations: no further action.</p>
6779	196	1203	<p>Labelled as Fe object (with bone comb). Fragment of probable bone comb side plate with iron rivet attached. The bone is in fair to good condition, the interior surface has remains of cancellous structure and this is slightly cracked in places. Outer surface is smooth. Broken at both ends. Rivet is cracked and the <u>X-ray</u> shows the metal core to be quite thin and mineralised.</p> <p>Recommendations: no further action.</p>
N/A	197	A1009	<p>Labelled as bone comb. Probable antler comb side plate fragment. Broken at both ends. Ridges on both sides visible and remains of two round rivet holes at either end. Good condition, smooth surface. Mottled colour.</p> <p>Recommendations: no further action.</p>
N/A	198	1054	<p>Small fragment of probable antler comb tooth plate. Good condition. Broken at one end. Mottled colour and relatively smooth surface.</p> <p>Recommendations: no further action.</p>
6779	242	1471	<p>Labelled as bone comb. 3 fragments of antler double-sided comb. Two pieces are tooth plate fragments. The side plates have vertical linear decoration. One of the in situ tooth plates is loose. Two rivets survive, one in one of the tooth plate fragments. Overall condition is good. <u>X-ray</u> shows the metal core of the rivets to be solid and even and round in shape.</p> <p>Recommendations: no further action.</p>
6779	243	1496	<p>Labelled as Knife handle – decorated! Decorated handle made from an antler tine with the tip removed. There is the remains of an iron tang set into the end. The other end has scratched decoration running all the way round and a round perforation that goes through the antler at an angle. This end is slightly hollowed but most of the spongy bone is in situ. The surface of the antler is slightly damaged but otherwise the object is in good condition. <u>X-ray</u> shows the metal core of the tang/object to be fairly thick but with striations and degradation to the edges.</p> <p>Recommendations: no further action.</p>
6779	250	1472	<p>Labelled as comb. Probable bone comb fragment consisting of the centre of the comb with two side-plates held together with two iron rivets and with remains of three tooth plates surviving, though with all teeth broken. Incised line decoration, on one side this is in a diamond pattern of double lines. Surface is somewhat cracked and uneven. Overall condition is fair. <u>X-ray</u> shows the metal core of the rivets to be solid and even though with a slight crack to one rivet.</p> <p>Recommendations: no further action.</p>