Report No. 12588.R03
March 2006

ROMAN MIDDLEWICH COMMUNITY DIG

POST EXCAVATION ASSESSMENT REPORT

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REGISTERED IFA ORGANISATION

ROMAN MIDDLEWICH COMMUNITY DIG

POST EXCAVATION ASSESSMENT REPORT

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PART 1: UPDATED PROJECT DESIGN

1. INTRODUCTION

1.1 Following on from the success of the Roman Middlewich Project between 2000 and 2004, a successful bid to the Local Heritage Initiative, spearheaded by Gifford and Middlewich Town Council, enabled the local community to undertake an ambitious programme of archaeological excavation at Buckley's Field in the summer of 2005, situated in the heart of the Roman settlement at Middlewich.

1.2 The excavation took place between July and October 2005 following an initial archaeological evaluation and programme of geophysical investigation, and was carried out in accordance with a project design prepared by Gifford (Report No 12588.R01).

1.3 This post-excavation assessment report has been prepared in accordance with guidelines set out in the English Heritage document *Management of Archaeological Projects (MAP2)*. It examines the results of the excavation, and details requirements and aims of further analysis.

2. UPDATED PROJECT DESIGN

2.1 Objectives

The excavation was successful in identifying archaeological remains adjacent to King Street. Pre-Roman deposits relating to probable agricultural activity and Roman deposits relating to the use of the fort at Harbutt's field and civilian salt production in the second century AD produced an assemblage of artefactual material which is assessed in detail in this report. These assessments have been used to identify a set of research objectives, each covering an aspect of the site which individual material categories (considered either in isolation or in conjunction) have the potential to address.

- Objective 1: Site Chronology

  Establishing a tight chronology of the stratigraphic sequence will be vital in understanding the history and development of human activity at the site. The pottery assemblage contains a large number of diagnostic pieces, including stamped mortaria and samian sherds which, considered in conjunction with other artefacts including the glass vessels, can be analysed to help determine dates for individual features across the site and identify peaks of activity at particular points in the site's history.

- Objective 2: Environment:

  The analysis of waterlogged and organically rich soil deposits and pit fills on the site will enable the reconstruction of local environmental conditions which prevailed during the Roman and pre-Roman periods in Middlewich. This may also allow an assessment of human impact on the local environment, including the management of woodland, presence of cultivated species etc. In addition, an assessment of any environmental indicators within the thick post-Roman soil present across the site may help to explain its origin and formation process.

- Objective 3: Social Status and Welfare

  Social status of the inhabitants can be determined from the artefacts present, including the forms and types of pottery, glassware and metalwork. Key questions are whether or not these assemblages can be used to distinguish between a distinctly 'military' style occupation in the 1st and 2nd centuries AD and civilian occupation in the later Roman period, and what are the differences between the two? Can the artefactual assemblage be used to establish exactly when the fort at Harbutt's Field was in use and on what scale it operated?

  Another indicator of social status is the nature of the dwellings/structures present on the site, and analysis of these in comparison with other known examples from Middlewich may help to build up a picture of the changing fortune of the settlement.

  The welfare of inhabitants of the site from the earliest Roman occupation through to the later Roman period is represented in the artefactual and structural assemblage, reflecting factors such as diet, occupation and wealth.

- Objective 4: Economy and Industry

  The economy of Middlewich in the Roman period is strongly linked to its status as a salt-producing centre. There are two themes here; the nature of the industrial works (i.e. what was being produced? When and how was it being produced?) and the economic status that these activities afforded the town (i.e. the wealth of the inhabitants, import/export of products and wares reflecting local tastes, welfare etc.) Both of these can be viewed in light of the hypothetical transition of the settlement at Middlewich from military to civilian in the 2nd century AD, and how this shift affected the economy.

- Objective 5: Site Investigation Methodology

  The use of different techniques of prospection during the excavation allowed their suitability to be assessed for this type of site. A deeper analysis of the successes and failures encountered may help to determine future approaches to archaeological excavation in Middlewich, and may have further implications for general site prospection methodologies elsewhere in the region.

2.2 **Tasks**

The following tasks have been identified for the post-excavation analysis programme which address the issues raised in the objectives above. These are summarised in Table 1 below.

- Task 1: Use phased site matrices and artefact analyses to generate full stratigraphic narrative of Trenches 1, 4, 9 and 12.

- Task 2: Chemically analyse subsamples of post-Roman soils to assess geophysics data.

- Task 3: Refine pottery dating, including detailed samian analysis and identification of mortaria stamps.

- Task 4: Spatial analysis of pottery types/distribution to disclose patterns of activity and land use across the site.

- Task 5: Analysis of pottery fabrics/type/source to characterise settlement and aspects of trade and exchange.

- Task 6: Typological analysis of the building material with reference to phased site matrix to elucidate patterns of disposal, changing trends in method of manufacture and status of buildings.

- Task 7: Typological analysis of briquetage and kiln waste to look for trends in method of manufacture and any spatial concentrations.

- Task 8: Identify provenance and types of granite objects/querns.

- Task 9: Analyse plant and invertebrate remains from peat samples to allow detailed environmental reconstruction and interpretation of the archaeological record.

- Task 10: Process residues/flots from bulk sediment samples to address Task 9 above, and identify small-scale artefactual evidence for on-site activities.

- Task 11: Produce a basic archive of the animal bone assemblage. Assess species present by context to refine dietary trends across the site.

- Task 12: Analyse human cremation sample to identify (where possible) age and sex of individual, any indicators specific to welfare/death, and date of urn.

- Task 13: Typological study and possible dating of glass beads.

- Task 14: Typological study and dating of glass vessel sherds, and comparison with the pottery assemblage.

- Task 15: Analysis of the distribution of window glass across the site to identify any concentrations.

- Task 16: The coins should be identified and the size and date of the assemblage compared to known coin sets from Middlewich and patterns of coin loss from Roman sites in general. The coins in poor condition should be assessed for conservation/storage purposes.

- Task 17: Typological analysis of ironwork, with x-rays taken of specific pieces where necessary.

- Task 18: Spatial analysis of iron nails looking for trends in type and concentrations.

- Task 19: Spatial and temporal analysis of deposition patterns for lead casting waste.

- Task 20: Typological analysis of identifiable lead and copper alloy objects.

- Task 21: Typological and spatial analysis of metalworking slag.

- Task 22: Comparative study of full artefactual assemblage from the 2005 community dig with other assemblages from nearby sites to look at differences or similarities and wider patterns.

- Task 23: Synthetic study of sites in Middlewich addressing how Buckley's Field fits into the overall history and development of Roman Middlewich.

Task	Objective				
	1	2	3	4	5
1	✓				
2		✓			✓
3	✓		✓		
4	✓		✓	✓	
5	✓		✓	✓	
6			✓	✓	
7			✓	✓	
8			✓	✓	
9		✓	✓	✓	
10		✓	✓	✓	
11			✓		
12			✓		
13	✓		✓		
14	✓		✓	✓	
15			✓		
16			✓	✓	
17				✓	
18				✓	
19				✓	
20			✓	✓	
21				✓	
22			✓	✓	✓
23			✓	✓	✓

Table 1: Objective/Task Summary

2.3 **Methodology**

2.3.1 Pottery

The coarseware pottery will be analysed by Ruth Leary to address Tasks 3, 4 and 5. In order to fully refine the pottery dating (Task 3) and provenance of material (Task 5), the samian will be analysed separately by Margaret Ward, and the amphorae and mortaria will be analysed by Dr David Williams and Kay Hartley.

Synthesis of the results and interpretation of these analyses will be undertaken by Gifford with input from community volunteers to address Task 4 (site-wide pottery distribution).

2.3.2 Building Material

Analysis of the building material, including differentiation of types and forms with reference to the overall site phasing (Task 6), will be carried out by Gifford and community volunteers with input from building material specialist Dr Phil Mills at the McDonald Institute for Archaeological Research.

2.3.3 Briquetage

As with the building material, Gifford will supervise community volunteers in the typological and spatial analyses of the briquetage, addressing Task 7. This will be done under the guidance of Dr Elaine Morris at the University of Southampton.

2.3.4 Stone objects

Gifford will supervise community volunteers in the sourcing of the stone used to manufacture the querns discovered during the excavation, and typological analysis of the forms present in the assemblage (Task 8).

2.3.5 Environmental samples and Animal Bone

The remaining bulk sediment samples will be sieved by community volunteers under Gifford supervision. The dried residues will also be processed and analysed by volunteers (Task 10). The flots, where present, will be submitted to Palaeoecology Research Services (PRS), County Durham, for more detailed analysis. These will be considered in tandem with the flots that have already been submitted from processing carried out on-site in 2005.

PRS will also undertake both the detailed analysis of plant and invertebrate remains from the peat samples (preliminarily assessed later in this report) and the production of an archive for the animal bone assemblage (Tasks 9 and 11).

Subsamples of relevant environmental samples will be submitted to David Jordan of Terra Nova to assess the effect of soil chemistry on the geophysics data collected in 2005. This also includes thin slice analysis of the monolith sample taken from Trench 9 (Task 2).

2.3.6 Human Bone

The human bone recovered from a cremation in Trench 2 is being analysed by postgraduate students at Liverpool University under the supervision of Dr Jessica Pearson (Task 12).

2.3.7 Glassware

Analysis of the glassware will be carried out by volunteers under the guidance of Gifford archaeologists (Tasks 14 and 15). The glass beads will be analysed by a suitably qualified specialist for dating and typology (Task 13).

2.3.8 Coins

The coin assemblage, though small, will be submitted to David Shotter in order to identify those in suitable condition, and to discuss the implications of such a small assemblage for a site of this size given its location (Task 16). The coins in poor condition will be submitted to Sue Barker at the Conservation Centre, National Museums Liverpool for assessment of stability.

2.3.9 Metalwork

Analysis of the individual metal types (Tasks 17-20) will be undertaken by volunteers, with assistance from Gifford and under the overall guidance of Quita Mould of the Barbican Research Associates. This will include the iron, Copper alloy and lead artefacts.

Those pieces chosen for x-ray will be submitted to Sue Barker at the Conservation Centre, Liverpool (Task 17).

2.3.10 Slag

The metalworking slags will be grouped by type by Dr Mark Adams of National Museums Liverpool. It is anticipated that this will enable the community volunteers to undertake full spatial analysis of the group with assistance from Gifford (Task 21).

2.3.11 Synthesis and Reporting

The final synthesis of those analyses detailed above, site phasing, generating the full stratigraphic narrative and comparison with other sites in Middlewich (Tasks 22 and 23) will be undertaken by Gifford.

PART 2: POST EXCAVATION ASSESSMENT

3. LOCATION, GEOLOGY AND TOPOGRAPHY

3.1 The site, a rectangular field roughly 0.7ha in size and oriented northwest-southeast, is situated between King Street to the east and the canalised River Croco to the west, centred on NGR SJ 705 665 (Figure 1). The site is bounded to the north and east by modern housing, to the south by an overgrown hedgerow leading on to another field, and to the west by a high brick wall, beyond which lies Cheshire House and the Trent and Mersey Canal. The site is approached via a single lane track which runs southwest from King Street, running along the north-western edge of the field. Adjacent to the southern edge of the track between King Street and the site there is a narrow verge of overgrown waste-ground.

3.2 The geology of the site comprises Triassic mudstone with overlying River Terrace Deposits and alluvial sand.

3.3 The site is generally flat at around 33m AOD, but along the southwest edge of the site there is a distinct terrace which slopes down towards the River Croco. As the access track heads towards King Street to the northeast it passes over an obvious camber, which appears to be running parallel with King Street.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 The site lies within the general industrial area of Roman Middlewich, which developed along the fringes of King Street following the establishment of a military fort at Harbutt's Field *c.* 70 AD. The settlement exploited local brine springs for the production of salt, but also carried out metalworking and produced leather for which brine was also necessary. The settlement continued as a centre of salt production following the withdrawal of the Roman army around the middle of the 2nd century AD, and it is suggested that the settlement reached it's zenith around the start of the 3rd century AD, declining eventually in the latter half of that century (Strickland, 2001; 58-59).

4.2 The Roman settlement was not the first at Middlewich. There is strong evidence for salt production and farming in the area in the late Bronze Age and Iron Age, evidenced by finds of pottery and bronze artefacts in the King Street area, as well as the discovery of pre-Roman roundhouses to the south of Harbutt's Field and at Kinderton Street to the south.

4.3 During the early medieval period it appears that the land on the east bank of the River Croco was imparked by the Lords of Kinderton. The medieval settlement was relocated to the west of the Croco at Newton.

4.4 Despite the fact that a significant amount of archaeological investigation has been carried out at sites along King Street since the 1960s, the potential of the current site remained largely unknown until the present campaign of investigation. John Bestwick excavated a number of small trenches in the northern corner of the field between 1972 and 1975 (Site J), but the results were never published. In the few interim reports that were produced he states that evidence for 2nd-3rd century iron-smithing was identified and that an aisled, post-built structure associated with 3rd century pottery was discovered. The exact location of these features is unknown as Bestwick left no plans, but it is probable that such features were present in the area behind buildings fronting onto King Street, which would have formed a focus for industrial activity.

4.5 During excavations immediately to the northwest of the current site prior to residential development in 2002-3 (by Fairclough Homes), a series of industrial features were also identified, including clay- and wicker-lined pits, ditches, kilns and fire pits, bisected by a substantial multiphase cobbled road which appeared to run in a westerly direction from King Street down towards the River Croco. This may have formed a crossroads at the centre of the civic settlement.

4.6 Prior to the current programme of excavation, the site was surveyed twice by Stratascan, initially using magnetometry and then subsequently resistivity. The magnetometer survey indicated that large areas of the site (particularly along the south-western edge of the field) had been affected by modern disturbance, though towards the centre of the field there were a number of linear and 'spike' anomalies. The most significant feature was a wide linear anomaly which crossed the eastern corner of the site on a north-south alignment, and was thought to be a ditch, possibly associated with the Roman road thought to run across this part of the site.

4.7 The results of the resistivity survey were inconclusive. Only one linear feature was visible, equating to a modern concrete-lined service pipe also identified during the magnetic survey. As part of the assessment procedure the validity of these results and the techniques of geophysical prospecting are being assessed (see below).

4.8 The archaeological evaluation carried out following the geophysical survey demonstrated that the slope along the western edge of Buckley's field marks the original bank of the River Croco, with riverine silt identified at the base of the slope. The remainder of the field appeared to be largely archaeologically sterile. However, significant archaeological remains were located in trenches along the length of the eastern edge of the field, comprising waterlogged pits, metalled tracks and clay surfaces of Roman date, sealed by up to 0.5m of homogenous grey silty sand. In the centre of the field a large rectangular feature was also identified. In addition a trench was established adjacent to the access track running from King Street to the site entrance in Buckley's Field, and in this trench the well preserved remains of a metalled road surface were discovered, adjacent to floor surfaces constructed of beaten ash and briquetage. The locations of these features and the corresponding evaluation trenches are shown in Figure 2, and the results are discussed in the evaluation report (Gifford Report No 12588.R02).

5. AIMS AND OBJECTIVES

5.1 Prior to the commencement of works on site, a series of research questions were formulated to be addressed during the excavation. These were as follows:

5.1.1 **Prehistoric Origins:** can we find evidence for pre-Roman occupation/salt making?
Target: Drop-off to river and possible round houses
Technique: Resistivity survey and trenching/area excavation

5.1.2 **Late Roman continuity (and sub-Roman):** Can we find any evidence? Problems with homogeneity.
Target: Upper layers of stratigraphy and artefact retrieval
Technique: Metal detecting, test pits and sieving programme; can we devise a strategy for bringing out any 'ghosts'? e.g. closely gridded phosphate sampling.

5.1.3 **Spatial organisation of backplot area**

Target A: Road to identify nature and date of construction/s, alignment, relate to King Street

Technique: longitudinal and cross-section of road to find buried artefacts for dating purposes; excavate in two places at western and eastern ends; compare to other roads.

Target B: Ditched property boundaries, date and alignment; relate to road and other linears.

Technique: Resistivity survey, longitudinal and cross-section.

5.1.4 **Industrial v Domestic use of area**

Target A: Magnetometer anomalies to characterise metalworking and salt production

Technique: Area excavation; appropriate sampling strategies for metal debris

Target B: Building remains from Bestwick evidence and magnetometer survey

Technique: Trenching/area excavation

5.1.5 **Civil v Military Status**

Target: Artefact retrieval; spatial organisation and Roman surveying

Technique: Area excavation, metal detecting, alignment and interval plotting, coins and imports.

5.1.6 **Palaeoenvironmental Studies**

Target: General environmental background, site specific and feature specific activities

Technique: Soil sampling, flotation and sieving of buried soil beneath road pit and ditch fills

5.1.7 **Location of Bestwick excavation,** and how this can add to our knowledge of previous results

Target: magnetometer anomalies and area of weak positive signal in centre of field

Technique: Trenching/area excavation

5.1.8 **Geophysical effectiveness and soil chemistry**

Target: Survey Buckley's field in general, then more detailed on key areas

Technique: compare results from different techniques; take soil samples (for soil chemistry) test against excavated results in due course.

5.2 In addition to these detailed research aims, a series of more general site objectives were specified also:

5.2.1 To identify the location and nature/condition of archaeological remains within Buckley's Field.

5.2.2 To continue to assess the results of the geophysical survey through targeted trenching.

5.2.3 To instigate a programme of high artefact recovery, particularly in order to recover information from homogenised Roman soils, where traces of archaeological features have been lost through processes of soil erosion.

5.2.4 To provide a programme of training and support for local volunteers to enable full community involvement in the excavation of Buckley's Field.

5.2.5 To create full and proper records of all excavated material.

5.2.6 To take account of and inform local, regional and national research frameworks.

5.2.7 To further understand the history and development of the Roman town of Middlewich, it's origins and subsequent fate.

5.3 The excavation succeeded in addressing these objectives:

5.3.1 Through the initial programme of trial trenching, the archaeological potential of Buckley's Field was determined, allowing the excavation to target the areas of highest archaeological potential and demonstrated that the geophysical survey was largely ineffective.

5.3.2 The intensive programme of metal detecting and spoil sieving which was carried out throughout the dig allowed a high level of artefact retrieval, and all archaeological material was recorded to recognised standards.

5.3.3 The dataset resulting from the site records is sufficient to allow full stratigraphic reconstruction of the site, from which interpretations can be drawn, and these in turn reassessed.

5.3.4 Fundamentally, the excavation was successful in providing a full programme of training and support for the team of community volunteers, who were able to become fully involved in the excavation and interpretation of part of the historic Roman core of Middlewich.

6. METHODOLOGY

Following on from the initial programme of archaeological evaluation at Buckley's Field, a number of areas were identified for detailed excavation during the main excavation. These were as follows (locations shown in Figure 2):

6.1 Trench 1

6.1.1 The deposits uncovered in Trench 1 during the evaluation were excavated stratigraphically by hand by running a section through the southern half of the exposed tracks/roads and ditch/floors.

6.1.2 It was anticipated that through a programme of sieving and metal detection of spoil it would be possible to increase the likelihood of dating the deposits and therefore tightly phasing the sequence.

6.2 Trench 4

6.2.1 Trench 4 was expanded to the southwest and northwest in order to expose the full extent of the rectangular feature in plan. Although initially it was hoped that a section could be excavated across one end of the feature, waterlogging prevented this and so a series of small sondages were excavated at points across the feature instead to determine its depth and make-up. Again, all spoil was sieved and scanned for metal objects to maximise artefact retrieval.

6.3 Trench 9

6.3.1 The features in Trench 9 were excavated stratigraphically by hand in order to determine their function and date.

6.4 Trench 12

6.4.1 An open area trench (Trench 12) was excavated in the northern corner of the site, roughly rectangular in plan running from the north-eastern corner of Trench 5 to the south-western corner of Trench 2 (that is approximately 15m x 18m). In addition the trench was extended from its south-eastern edge to connect with Trench 6. This trench partly incorporated the backfill from John Bestwick's 1970's excavation of Site J.

6.4.2 The modern topsoil was stripped from the whole area by machine under full archaeological supervision, and then subsequent mechanical excavation through the underlying subsoil was stepped in 0.2m deep spits, each a bucket-width wide, starting from the highest point along the north-western edge of the trench and diminishing in height towards the southeast. It was anticipated that the backfill from Bestwick's 1970s trench would be completely removed from the trench, revealing the original excavation area and allowing it to be plotted onto the site plan.

6.4.3 A site grid tied into the Ordnance Survey National Grid was established using a total station and Penmap surveying software. On this basis the trench was subdivided into 1m squares and a sample of these (10 in total) were hand excavated as test-pits through the homogenous subsoil, retrieving artefacts through sieving and metal detection in 100mm spits in order to determine if any stratification was present within this soil. The findings of the test pits were used to facilitate removal of the remainder of the subsoil overburden by machine to expose the underlying archaeological remains.

6.5 Excavation and Recording

6.5.1 All undisturbed archaeological deposits were excavated stratigraphically by hand and recorded using Gifford's single context recording system, with levelled plans and sections drawn at scales of 1:20 and 1:10 respectively, a photographic record and index, and context records.

6.5.2 All spoil generated from machining and hand excavation of the trenches was scanned with metal detectors and manually sieved for finds. In addition exposed features and trench surfaces were routinely scanned with metal detectors, and the location of any coherent signals labelled for reference during manual excavation.

6.5.3 Finds were retained and stored by context, unless obtained from spoil in which case they were labelled as unstratified. All finds were processed on site, including washing, drying, weighing and the creation of a bulk finds record with material separated into its individual categories. All delicate artefacts were stored in suitable conditions, off site where necessary.

6.6 Palaeoenvironmental Sampling

6.6.1 Samples were taken from sealed contexts that were waterlogged or had the potential to provide evidence of the conditions under which they were formed. These were stored in 10 litre buckets under suitable conditions and supported with an index and individual sample record sheets.

6.6.2 The sampling strategy was kept under constant review, in consultation with English Heritage's Regional Science Advisor.

6.6.3 The initial processing of the bulk samples was undertaken on-site by the community volunteers.

6.6.4 In addition, a monolith sample from a continuous section of the grey subsoil in Trench 9 was taken for analysis of its micromorphological character.

7. RESULTS

7.1 The results of the evaluation are considered elsewhere in detail (Gifford Report No 12588.R01, 2005), but in summary it was shown that the principal area of archaeological survival in Buckley's Field was along the eastern edge, adjacent to the rear end of gardens facing onto King Street. There was a marked difference between the trenches in this location (No's 1, 2, 4, 5, 6, and 9) and the remainder, which were archaeologically sterile and almost devoid of artefactual material.

7.2 As stated in the methodology, the excavation focussed on Trenches 1, 4, 9 and 12. The archaeological remains in these four trenches can be divided into 14 phases of activity. These are summarised in Table 2 below (earliest first):

Phase	Description	Tr 1	Tr 4	Tr 9	Tr 12
1	Pre-Roman buried soil				✓
2	Pre-Roman cut features				✓
3	Mid-1st century buried soil	✓		✓	✓
4	1st century cut features and surfaces	✓			
5	Late 1st century road construction	✓			
6	Early 2nd century structures, cut features		✓	✓	✓
7	Late 2nd century trackway, ditch and pits, road reorganisation	✓			✓
8	Late 2nd century infill of pits			✓	✓
9	Midden deposits late 2nd-late 3rd century				✓
10	Mid-3rd century cut features	✓			
11	3rd century burning layer	✓			
12	3rd-4th century soil accumulation	✓			
13	Subsoil (post-Roman 'dark earth' deposit)	✓	✓	✓	✓
14	Modern topsoil	✓	✓	✓	✓

Table 2: Phasing of activity in all trenches

7.3 The earliest deposits seen on the site were located in Trench 12, and consisted of a gully and a pit cut into an organically rich buried soil overlying the natural alluvial sand, but sealed by a 1st century AD soil horizon. The stratigraphic position, lack of artefactual material and slightly different alignment of these features when compared to the later Roman deposits all point to a pre-Roman date, though the exact period is unclear.

7.4 The earliest apparent Roman features on the site (Phase 4) were located in Trench 1. Here a shallow ditch was cut across the trench, with a series of thin sand and crushed briquetage/charcoal surfaces located to the east. These may represent part of the floor of a structure, or may have been laid to stabilise the ground for some other purpose.

7.5 Immediately to the west of these features in Trench 1, the first phase of military (?) road construction was seen (Phase 5). This consisted of two parallel ditches some 7m apart running northwards towards the fort at Harbutt's Field. The quarried sand that had formed the central 'agger' and the original metalled surface had been removed by later activity.

7.6 Phase 6 activity was seen in Trenches 4, 9 and 12, representing widespread development in the early 2nd century. In Trenches 4 and 9 this was seen in the excavation of a series of large industrial pits, in particular a rectangular 'tank' in Trench 4 measuring 15m x 5m. In Trench 12 this Phase also included the creation of an industrial outbuilding with clay floors and integral pit (possibly for brine storage). The building seen here may have fronted onto the main Roman road to the east.

7.7 In the mid 2nd century the military road in Trench 1 underwent considerable alteration, as it was levelled and resurfaced with a series of layers of industrial waste (briquetage and charcoal) and a thick surface of compacted pebbles, which extended westwards towards the structures in Trench 12. Here there was further reorganisation of the outbuilding, with the addition of a ditch along the southern side of the building and a trackway (possibly a continuation of the new track in Trench 1) to the north.

7.8 By the late 2nd century the use of the features seen in Trenches 9 and 12 appears to decline (Phase 8), as pits are infilled, and significantly in Trench 12 the clay-floored building becomes buried beneath midden deposits suggesting that the building has fallen out of use. This accumulation of material continued through the 3rd and into the 4th century (Phase 9).

7.9 There is a suggestion that with the decline in use of buildings as far to the west as Buckley's field, the focus of activity in Middlewich shifts eastwards, perhaps hinting at a major reorganisation of the town layout. This is demonstrated in Trench 1 with a series of 3rd century features, including a hearth and two large pits/postholes cut into the metalled road surface (Phase 10) sealed by a burned layer (Phase 11). This was in turn sealed by a thin deposit of earth dated to between the mid-3rd and mid-4th century, indicating that by this time these features, too, had fallen out of use.

7.10 A site-wide phenomenon was encountered in all trenches; the Roman features were sealed by a uniform layer of grey, featureless subsoil up to 0.5m thick (Phase 13). The provenance of this material is unclear. Despite representing the considerable period from the 5th century AD until at least the 18th century, it contained very few artefacts and no discernable features. Indeed the only stratified artefact discovered datable to this period was a silver Charles I half-groat (AD 1631) discovered on the surface of the Phase 7 track in Trench 12 (context 1202). This may suggest that the track persisted as a usable pathway until at least the 17th century.

7.11 The subsoil was sealed by modern topsoil in all trenches, and a layer of redeposited clay in Trench 9 (Phase 14). In Trench 12 this had been disturbed in the 1970s by an open-area excavation carried out under the direction of John Bestwick. The limits of the eastern end of this trench were defined and partially re-excavated as part of this programme of excavation.

8. ASSESSMENT OF THE DATA

8.1 SITE DATA

8.1.1 Quantity

The excavation archive consists of the following:

- 263 context record sheets
- 13 test pit record sheets
- 3 sample record sheets
- 37 pencil drawn plans at scale 1:20
- 35 pencil drawn sections at scale 1:10
- 179 digital colour photographs
- 180 monochrome prints (& negatives)
- 180 colour slides

Also:

- Context index listing contexts 100-199, 200-209, 300-303, 400-420, 700-701, 800-808, 900-914, 1000-1002 and 1200-1298
- Plan index listing plans and section nos. 1-72
- Photographic index listing photographs 1-36 on films 1-5
- Sample register listing samples 1-21
- 28 sheets of site level records
- 33 sheets of A4 site notes (site notebook)

8.1.2 Provenance

With the exception of a prehistoric gully, pit and thin buried soil in Trench 12, the majority of the features identified during the excavation were attributable to the Roman period, with a strong emphasis on the second century.

No features were attributed to the sub-Roman, medieval or post-medieval periods, though a number of modern ceramic field drains were noted.

8.1.3 Range and Variety

The prehistoric features, though scarce, seem to be of agricultural origin, a probable field boundary and a wide pit, possibly a pond.

With the advent of the Roman period there is a rapid increase in the variety of archaeological features noted across the site. The early Roman features are probably military in origin, and include the road leading north to the fort at Harbutt's Field and a series of surfaces to the east of that road in Trench 1.

The second century building seen in Trench 12 is probably industrial in nature, but the associated features attest to both industrial and domestic activity. In particular, surfaces made from beaten industrial waste were identified, and the same material was also being dumped into ditches and pits alongside domestic refuse, including coarseware pottery, food waste, glass vessels and jewellery. Within the Trench 12 building, and also in Trench 4, there were large industrial pits which had later been backfilled with refuse. In the case of Trench 12 this was done with used stable-bedding straw.

Associated with this structure there was the development of a building plot layout, with a track to the north, a ditch to the south and, in evaluation Trench 6, a second trackway marking the southern plot boundary. The distribution of these features is key to understanding zoning within what appears to be a single domestic/industrial plot.

On a broader scale we see steady decline in the use of the land in Buckley's field during the late 2nd-3rd century which seems to be associated with a general shift of the Roman town towards the east. An appreciation and synthesis of the findings from other sites across this part of Middlewich and particularly along King Street will be necessary in order to place these later features, particularly those in Trench 1, in context.

8.1.4 **Condition**

The survival of the archaeological remains across the site varied considerably. There was no evidence to suggest that agricultural activity in the post-medieval period had caused any deterioration to the integrity of the remains, however the homogenous grey subsoil prevalent across the site appeared to have been considerably re-worked, probably through the action of biological organisms, and therefore if any medieval or earlier remains were present, they weren't visible during the excavation.

The structural remains had survived particularly well in all trenches. Clay and briquetage floors not only withstood erosional processes, but also afforded protection to the underlying deposits. This was very clear at the eastern end of Trench 1 where a thin clay surface had protected a very fine sequence of layers and soils beneath.

In places the sandy, free-draining nature of the local soils had a detrimental effect on the preservation of organic remains within soils or fills. This was not uniform, however, as the water table at the site was at or just below the surface of the natural alluvial sand, and so features cut below this level displayed very good organic preservation. In general it should be noted that the preservation of animal bone was poor.

8.2 **GEOPHYSICS RESULTS**

8.2.1 **Introduction**

Geophysical surveys of Buckley's Field were commissioned by Gifford in order to identify potential archaeological features within the proposed excavation area. A magnetometer survey was carried out on 23rd June 2005, and a resistivity survey was carried out on 20th July 2005, the latter taking place during the programme of trial trenching discussed in Gifford Report 12588.R02. Both were undertaken by Stratascan, and the detailed methodology and results of the surveys are detailed in Report No. J2025 (July 2005).

8.2.2 **Provenance, Range and Variety**

The magnetometry survey suggested that despite large areas of magnetic disturbance along the northern and western edges of Buckley's Field, a number of positive and negative features (corresponding to cut features and possible structures respectively) could be identified. These were tested by trial trenching, and the majority of the linear features were identified as modern field drains. The areas of magnetic disturbance, particularly those seen along the western edge of the field, were shown to be substantial

areas of modern waste deposition, including layers of redeposited clay and brick building material. It is presumed that this material was derived from the canalisation of the River Croco.

The principal feature identified from the magnetometer survey- a linear anomaly thought to possibly be associated with a road or trackway in the eastern corner of the site- was shown to be a shallow linear depression in the natural sand, possibly of archaeological origin but lacking in material culture association with other archaeological features.

This survey also identified a series of near-surface ferrous 'spikes', thought to be associated with iron-working activity, first identified by John Bestwick in the 1970s. Trial trenching, particularly in Trenches 4 and 7, failed to identify the origin of these spikes, and it seems probable that these features were of modern origin.

The initial resistivity survey failed to identify any archaeological features which did not correspond to known features of modern origin, although data collected at a higher density of 0.5m-centred readings located a possible pit. Unfortunately, in the current programme of excavation, time and resources did not permit the investigation of this feature.

8.2.3 **Discussion**

With reference to the results of the evaluation and subsequent excavation of trenches across Buckley's field, the geophysical data was examined by David Jordan of Terra Nova Ltd to assess how effective the techniques of prospection were, and whether or not the results adequately predicted the below-ground archaeological remains.

The magnetometer survey did succeed in locating modern disturbance, services and drains, but failed to locate any of the archaeological features identified in Trenches 4 and 12, including the large rectangular cut feature in Trench 4, and the clay floor surface and location of Bestwick's site J trenches in Trench 12. Similarly, the resistivity survey identified modern services, but did not show any detail of the known archaeological features within the survey area.

It is likely that a series of factors contributed to this, and these are (in order of significance):

- The archaeology was too deeply buried; across the site the majority of the archaeology was buried beneath around 0.5m of homogenous subsoil and modern topsoil.
- Much of the more susceptible material lies in broad horizontal spreads (e.g. clay floor in Trench 12) at depth, which will tend to have less effect on the local field gradient than a shallow and vertically more extensive deposit – like a ditch fill.
- Many of the features are unlikely to have produced any significant geophysical contrast
- there are obvious sources of noise and distraction – brick debris, pipes etc – which make it much harder to see weak detail

It was also noted that some of the lines of magnetometer data at the northern edge of Buckley's Field were saturated beyond the plotting limit, while adjacent lines (corresponding to individual transects walked during the survey) were not. It was therefore suggested that careful replotting of the data might allow further information to be extracted around the fringes of the survey.

The interpretation drawing produced from the replotted data indicated additional features in the northwest corner of the site corresponding to anomolies identifiable within plotting parameters +/-30nT to +/-50nT. It seems unlikely that these features are significant, given that they lie within a known area of modern disturbance, but it is important to note that interrogating the data has produced additional information which may have been of potential significance.

8.2.4 **Recommendations**

The geophysical techniques used for prospection on this type of site are the subject of ongoing research by David Jordan, and the results from Buckley's Field are being considered as part of that study. In addition to analysis of the relationship between the geophysics data and the known stratigraphic sequence on the site, subsamples of bulk sediment samples taken from contexts within the geophysical survey area will be analysed to assess the suitability of the soil morphology for known prospection techniques. This will also include thin-section analysis of a monolith sample taken from the Roman and post-Roman soil profile in Trench 9, which may also help to characterise the nature and development of that soil (Task 2).

8.3 **POTTERY**

8.3.1 **Introduction**

The ceramic assemblage was assessed by Ruth Leary in order to provide a preliminary overview of the types of materials present and to spot-date individual contexts to assist with the overall phasing of the site. The full assessment report is included in Appendix A.

8.3.2 **Factual Data**

The pottery was scanned in context groups by trench. Presence/absence of fabrics and forms were noted and each context was given a spot date range based on this rapid scan.

8.3.3 **Quantity and provenance**

There were c.3635 sherds of pottery. The quantities of pottery sherds recovered from the excavated areas and trenches are shown in Table 3. Around 330 sherds of samian ware were identified.

Trench	Sherd count (approx)
1	132
2	29
4	511
5	17
9	177
8	26
12	2743

Table 3: quantity of pottery from features in excavated trenches

Out of 84 features, 9 had more than 100 pottery sherds. All but one of these larger groups came from trench 12. Three were cleaning groups, one was from above clay floor 1208, another from the road surface, and two came from ditch 1221 and one from the final fill of pit 1247. A large group also came from pit 402 in trench 4. 48 groups had less than 10 sherds of pottery.

Much of the pottery comprised large, unabraded sherds, including material from the cleaning layers. A similar phenomenon was encountered at excavations carried out on the other side of King Street (Leary forthcoming) where at least eight of the complete or near complete samian bowls came from buried soil and upper soil levels on the site. Such a concentration of large sherds within these layers suggests they represent rubbish deposits of some kind, perhaps middens, not otherwise distinguishable from the buried soil. There is some evidence that some of these deposits were incorporated into the tops of earlier features as in the case of fill 1210 in pit 1247 which contained considerably less pottery in the lower fills.

8.3.4 **Range and variety of material**

Wares

The pottery was examined by eye and sorted into ware groups on the basis of colour, hardness, feel, fracture, inclusions and manufacturing technique.

The range of wares represented on the site (see Table 10, Appendix A) fits into the pattern being established for the region by the quantification of recently excavated groups by researchers and adds detail to our understanding of the ceramic supply network in the North West.

Amphorae supply is dominated by the Dressel 20 oil amphorae, and the presence of Gallic wine amphorae were established in smaller quantities. To these may be added a small number of Verulamium amphorae, possibly also containing wine, and a number of unsourced large flagons which are similar in vessel form to wine amphora from north Gaul.

The mortaria assemblage included late first-early second century vessels from Verulamium (St Albans). Other sources include Wilderspool, Wroxeter, Mancetter-Hartshill and unknown producers on the Cheshire Plain. Three stamped mortaria were noted.

The quantity of fine wares apart from samian, such as colour coated and fine table wares, was low although white and white-slipped wares, mostly flagons, were common. In contrast to the King Street site most of the roughcast beakers were probably imports from the Argonne with rather less of the locally produced ones from Wilderspool. This may reflect a difference in site chronology. A small number of mica-dusted wares were identified, probably from Holt or perhaps Manchester, and a group of thin, black-walled sherds of imported Terra Nigra eggshell ware were present.

The white and white-slipped wares included vessels from the Verulamium region, probably Mancetter-Hartshill, Holt, Wilderspool and probably Manchester. Detailed study of the white-slipped fabrics may distinguish the products of different kilns.

The grey and oxidised wares are typical of the Cheshire Plain and most of the late first-early second century material is likely to come from the Middlewich kiln. Some types

were particularly well matched at Northwich though this may be due to contact between potters or similar backgrounds rather than exchange of pots. Other vessels could be attributed on the grounds of fabric and form as probable products of the Wilderspool kilns. In addition to the local pottery, small amounts of Severn Valley type sherds were present. A good proportion of the Antonine groups comprised BB1 jars, bowls, dishes and mugs from Dorset (10.25%) with rather small amounts in the early Hadrianic groups.

Uncommon traded wares included a Malvernian jar, a BB2 jar of the late second-third century, shell-tempered and coarse gritted wares from Northamptonshire, late South Midlands shelly wares, probably from Bedfordshire, small amounts of Nene Valley colour-coated ware and late pink grogged ware (Tomber and Dore 1997 PNK GT). All these fabrics, except the BB2 ware, were found in small quantities on the King Street site (Leary forthcoming) and represent small scale trade, gift exchange or personnel movement. A small amount of Derbyshire ware was present in the form of bodysherds. This is unusual in the north west, although it has been found at Nantwich and Melandra but not at Manchester or Chester. The ware has been identified by other workers at Middlewich (Strickland 2001, 37).

Forms

The grey ware medium-necked jars were predominantly neckless, everted-rim jars typical of the Flavian-Trajanic period with a ratio of around 4:1 to the necked, everted-rim jars more common in the Flavian period. This is the reverse of the situation found on the King Street site where the necked jars were more common and the samian ware suggested a Trajanic decline in occupation.

Eight rusticated jars were present. Only grey ware two rebated-rim jars were identified. A number of the early globular jar/beaker with ring and dot decoration were identified as well as jars with combed wavy line decoration in the style of the South Wales grey ware vessels (Webster 1973 , fig. 108 no. 13.2 dated late first to early second century). The grey ware bowls and dishes included a number of carinated bowls similar to one made at Wilderspool (Hartley and Webster 1973 no. 52), three reeded-rim bowls and a variant with a flat rim, carinated bowls with upright upper walls and everted rims, a Dr37 copy very similar to one found previously on King St and to a type made at Northwich (Jones 1972 fig. 11 no. 16) and flanged, hemi-spherical bowls. Other types made in grey ware included lids, narrow-necked jars and flasks and ring-necked flagons probably made at the Middlewich kiln. Most of these types were common in the late first to early second century and there were very few grey ware types of later date. A narrow-necked jar in a coarser grey ware with everted rim and a zone of vertical groove decoration would fit a date in the late second century or later and a bodysherd with acute lattice burnish may be copying the BB1 jars. A small number of grey ware plain-rim dishes copy the BB1 vessels.

Fine oxidised wares were used to make similar neckless, everted-rim jars of late first-early second century type, a cup copying samian form 27, roughcast ware beakers, bead and flange, hemi-spherical bowls, lids and narrow-necked, everted-rim jars. The sandier oxidised wares were used to produce narrow- and wide-mouthed jars copying the Severn Valley ware range. These were made at Wilderspool and possibly other centres on the Cheshire Plains and seem to increase in popularity from the mid/late-second century onwards.

A group of Severn Valley ware narrow- and wide-mouthed jars were identified in forms dated to the second to third centuries and an example of Webster type F (1977). These are markedly finer in texture than the locally made copies and included the charcoal tempered Severn Valley ware identified by Evans *et al* 2000. The narrow-necked jars included one with a zone of oblique burnished lines. These date from the mid/late second century.

One very unusual vessel from trench 12 (feature 1281) in a sandy oxidised ware was of unknown origin. This was straight-sided with a flat rim and very large diameter. In fabric it compared well with Wilderspool products but in form it looked more like a pancheon. Roman parallels for the form could not be found. Another unusual form came from trench 9 feature 908. This was in grey ware and comprised a sherd from a long, narrow necked vessel (140mm diameter) with plain rim and bulbous body and rather thick walls. This seemed a particularly crudely made vessel and may represent deterioration in potting skills.

The BB1 jar types comprised necked jars of Hadrianic-early Antonine type with fairly upright necks and at least six with burnished wavy lines on the neck, a feature which declined after the mid-second century. Three BB1 everted-rim jars of a type more common in the second half of the second century were identified. Two BB1 jars of third century date with obtuse lattice burnish were present and five jars with splayed everted rim dating to the third century. Several rather globular BB1 jars with bead or short everted rims were present, typical of the Hadrianic-Antonine period, and a small handled jar was identified, a type previously found in a possible Roman grave at Kinderton (Strickland 2001 fig. 48). The BB1 bowls and dishes comprised flat-rim types with acute lattice decoration, seven plain rim dishes including one with the later style of intersecting arcaded burnishing, one grooved flat rim bowl of the late second – third century and one bead and flange bowl of the mid third-fourth centuries. The evidence of the BB1 types point overwhelmingly to occupation in the Hadrianic to early Antonine period, with a decline in the second half of the second century, and very little activity in the third or fourth centuries.

The beakers included rough cast beakers in CC, GR and OA fabrics, an indented MG beaker, fine OA and GR ring-and-dot beakers and a TN EGGS carinated beaker.

The flagons comprised ring-necked flagons and a plain necked flagon with everted rim, all in white-slipped ware, and a large, rebated rim flagon or amphora in white wares copying the Gallic amphora forms but British made. One of the ring-necked flagons had a distorted mouth suggesting the possibility of local manufacture.

Fragments of 10 lids, two in BB1, five in grey ware, one in FLB and two sandy oxidised examples were found. One FLB tazze was found in context 419, trench 4. This had clear signs of sooting inside.

Two sherds bore unusual post-firing graffiti. Both were oxidised bodysherds and one bore a Y-shaped design with distinct circular terminals and the other had a crudely executed lattice pattern incised inside the body. One large SV sherd from a narrow necked jar seemed to have some kind of large perforation on the shoulder. Around 20 sherds were burnt or scorched and two had burnt matter adhering to them.

Just over 310 sherds of samian were examined and these included three stamped sherds, two with rivet holes, both still containing lead remains, a sherd made into a small

counter and a basal sherd with the base chipped away to within the circumference of the footring.

8.3.5 **Chronology**

The types of fabrics and forms identified in the assemblage date from the Flavian period to the late third to fourth century. The quantity of neckless, everted-rim jars and everted-rim jars with rebated necks suggests activity in the later Flavian-Trajanic period. The imported TN beakers sherds and the ring-and-dot beakers would suggest some earlier Flavian elements to the group. The analysis of the samian ware provides a more sensitive tool refining the dating.

Types such as the mica-dusted ware, the Verulamium region white ware mortaria and flagons/amphorae, the neckless, everted-rim jar, the flat and reeded-rim bowls and some of the amphora rim forms suggests Trajanic or Trajanic to Hadrianic activity. The majority BB1 forms are of Hadrianic-early Antonine type with little which must date after the mid-second century. A small number of BB1 jars indicated a date in the second half of the second century and the late BB1 jars with obtuse lattice defined by a shoulder groove date from AD 240 or after. The grooved flat-rim BB1 bowl/dish may also be of late second or 3rd century date and the bead and flange bowl dates from the mid third century or later. Only two Nene valley colour coated ware sherds were present. One came from a beaker with barbotine dots of mid/late second-third century date and the other from a castor box lid with rather curved profile suggesting a date in the third century at least.

Spot-dates for individual contexts are shown in Table 11, Appendix A.

8.3.6 **Function and site status**

The quantities of samian tableware and amphorae indicate a site supplied at levels comparable to military and military associated sites but detailed assessment is not possible without full quantification of forms and fabrics.

8.3.7 **Statement of potential:**

The Pottery

8.3.8 Fabric analysis

Although the pottery has been grouped into broad ware groups, it will be important to analyse the fabrics in detail and distinguish pottery from local kilns such as Wilderspool (Hartley and Webster 1973, Hartley 1981 and 1997), Walton-le-Dale (unpublished report by J. Evans), Holt (Grimes 1930, Greene 1977), Northwich (Hanson 1972) and Manchester (unpublished Severn St kiln). The mortaria stamps and aspects of the fabrics should be identified with the help of the leading specialist, Kay Hartley, and uncertain amphorae identifications should be referred to specialist Dr David Williams. Such fabric studies will clarify the trading links maintained by the inhabitants of Roman Middlewich and add to our understanding of ceramic supply and exchange in the North West as well as the supply of commodities such as wine, fish sauce and olive oil to the site (Task 5).

8.3.9 Specialist analysis

It is recommended that Dr David Williams and Kay Hartley are employed as consultants in the study of the mortaria and amphorae. Both are leading experts and willing to be consulted regarding the stamps and any fabric queries. Name stamps on the rim not only tell us the suppliers but also give significantly more precise dating evidence than unstamped ceramics so are important for the chronology of the site. The samian should be studied by a samian specialist (Task 3).

The Site

8.3.10 Site chronology

Further study of the pottery with detailed identification of the fabrics and forms will refine the dating of the features on the site. In particular, the combination of this further work with detailed analyses of the stratigraphic relationships of the features is likely to improve the dating of the individual components of the site. A combination of the dating evidence from the coarse wares and samian with this detailed stratigraphic analysis will permit more detailed phasing (Task 3).

8.3.11 Spatial analysis

A study of the distribution of the pottery types may disclose patterns within the site. This should be carried out as part of the post-excavation study and should be combined with a study of the distribution of other finds, including the samian and also items such as the glass vessels, bone pins, counters in other materials etc. This may well reveal areas of specialised activity within the trenches, domestic or industrial areas as well as clarifying the sequence of activities carried out in different zones of the site (Task 4).

8.3.12 Nature of occupation and aspects of trade and exchange

Initial work on the assemblage suggests that it has military characteristics. Detailed comparison with other sites in the region will elucidate this aspect of the site and add significantly to our understanding of a group of “proto-military” sites in the region which may have served as military depots rather than forts, in the case of Middlewich ensuring a regular salt supply to the Roman army. Quantified study of these ceramic assemblages is adding significantly to our understanding of them revealing characteristics such as high levels of samian supply, particularly decorated samian, and a high tableware component, even for military sites. Nationally agreed research frameworks (Willis 1997) for Roman pottery have identified the North West as a region where the quantification of assemblages is a priority. Other priorities identified include the need to clarify ceramic supply to the army during Flavian-Trajanic period through the study of suitably dated groups, the study of larger groups from the military sites which tended to be kept clean, the study of supply mechanism operating in the region, and differences in supply to different types of sites. All these areas of research can be addressed to some degree at Middlewich. The detailed cataloguing of the fabrics and forms will study the nature of the Flavian-Trajanic wares and types. The analyses of the larger groups from the pits, ditches and accumulation layers provide significant groups. The traded material already identified from the site has already added to the evidence from Middlewich King Street for movement of small numbers of jars from Northamptonshire and Derbyshire, and has also provided further evidence for a low incidence of wine amphorae along King Street compared with Chester or the Welsh sites (Evans 2002).

8.3.13 **Regional or greater significance to pottery studies**

The assemblage is significant on a regional level in terms of:

- the potential data relating to trade and exchange patterns
- ceramic supply in the Flavian-Trajanic period and the products of the Middlewich kiln
- The character of the site as a specialist “proto-military” establishment similar to Walton-le-Dale and Wilderspool but producing salt.
- The character of the third –fourth century activity.

At a national level, this group of proto-military sites have great significance in terms of the nature of military quarter mastering of the north and it is essential to characterise them both structurally and artefactually.

The pottery from this region has international links with the Roman province of Raetia and Upper Germany and this has been demonstrated ceramically in the form of red slipped/painted finewares and mortaria (Hartley 1981 and 1997). Raetian mortaria are present at Middlewich and study of the forms and fabrics may reveal other links with Raetia.

8.3.14 **Storage and curation**

The pottery is predominantly stable.

8.3.15 **Bibliography**

See Appendix A for full bibliography.

8.4 **BUILDING MATERIAL**

8.4.1 **Introduction**

The building material has been assessed by Gifford to quantify and characterise the group recovered during the excavation. The building material was quantified by context, and notes made on the presence of diagnostic pieces within each. The results are presented in Table 4 below. Unless otherwise stated, all are Roman forms. Where no diagnostic pieces were present, no notes have been recorded.

8.4.2 **Quantity**

In total 511 fragments of building material (principally tile and brick fragments) weighing 30.7kg were collected. 444 of these were from stratified contexts, and a further 67 fragments were recorded as unstratified.

Tr	Ctxt	No.	Notes
1	U/S	21	1 tegula flange
1	102	4	1 imbrex, 1 tegula flange, 1 tegula bdy, 7 micaceous sandstone frags.
1	103	2	-
1	104	1	-
1	108	5	1 brick fragment
1	122	1	2 tegulae bdy

Tr	Ctxt	No.	Notes
1	153	1	-
1	157	1	Salt glazing on small frag- splashed brine from kiln?
1	167	1	Tegula flange?
1	175	1	V. high fired brick- kiln furniture?
2	U/S	1	-
4	TP3	1	-
4	402	3	Large brick pieces, 1 with possible area of burning (kiln furniture?)
4	407	3	-
4	410	2	-
4	411	1	Painted/plastered stone?
4	416	2	-
4	418	5	3 coarse, gritty fabric brick, 1 with splashed salt glaze
4	419	1	High fired coarse brick- poss. kiln furniture
5	U/S	5	-
5	501	3	1 tegula flange
6	U/S	6	1 tegula, 1 micaceous sandstone
8	U/S	7	1 imbrex, 2 tegulae flanges
8	802	13	-
8	805	4	-
9	U/S	23	Modern floor tile, modern brick
9	905	10	-
9	907	5	-
9	908	5	1 tegula flange, 3 tegulae bdy (1 with dog paw and 1 with kitten paw print)
9	911	3	2 tegulae bdy
12	U/S	21	4 tegulae flanges, mostly non-diagnostic
12	1204	15	-
12	1206	13	2 brick
12	1210	2	1 tegula bdy
12	1212	7	-
12	1213	11	1 tegula, 1 imbrex, 1 micaceous sst with nail hole
12	1214	7	2 tegulae flanges, 2 frags of high-fired coarse brick
12	1215	2	-
12	1216	32	2 imbreces, 20+ tegulae, 1 brick (all unabraded)
12	1217	71	4 tegulae, 1 imbrex (unabraded)
12	1218	1	1 tegula
12	1220	3	-
12	1222	1	-
12	1223	1	-
12	1231	37	2 tegulae
12	1232	1	Tile?
12	1233	1	-
12	1237	2	1 tegula
12	1242	4	-
12	1258	1	High-fired, coarse brick, grass impressions on one side- possible kiln furniture
12	1266	19	1 imbrex, 1 tegula
12	1267	3	2 tegulae, 1 thin tile?
12	1271	1	-

Tr	Ctxt	No.	Notes
12	1275	7	4 coarse brick with salt glaze splashes- brine?
12	1281	19	8 tegulae
12	1282	8	1 tegula
12	1284	2	Brick
12	1286	2	-
12	1288	2	-
TOTAL		444	

Table 4: Building material quantities

8.4.3 Provenance, Range and Variety

Of the roofing materials, Roman imbrex and tegula forms are the most abundant within the assemblage, with micaceous sandstone present in much smaller quantities. It is likely that a large proportion of the non-diagnostic fragments were also of the imbrex and tegula varieties, but their size and lack of surfaces preclude identification. It is worth noting that in the majority of contexts the tile is probably residual, being badly abraded. However there are a number of contexts which contained large quantities of intact tile fragments, including pit fills 908 and 911 in Trench 9, and ditch fill 1216 in Trench 12. It seems likely that these fills in particular represent original deposition of discarded roofing material.

The tegulae fell into two distinct groups, those with hand-moulded flanges, and (less commonly) wire-cut flanges with acute angles at the top of the flange. The latter type was more common in contexts from Trench 9.

Brick fragments too large to be classified as roofing material are also apparent in a number of contexts. Six of these have irregular patches of salt-glaze on their surfaces suggesting that the material was used either in the construction of a brine kiln, or used as kiln furniture onto which brine had splashed during the boiling process. Some of these were made in a very coarse fabric containing grit, sand and possibly shell, and had strong patterns of oxidation/reduction or were almost purple in colour suggesting very high firing, again indicative of use within a kiln.

Two tegulae fragments from context 908 in Trench 9 had impressions of animal paw prints, those of a dog and a small cat or kitten. No graffito, signature or tally marks were noted on any of the pieces.

There was no medieval building material found during the excavation, and only a small quantity of post-medieval/modern material was recovered from the topsoil during the initial opening of the trenches.

8.4.4 Discussion

In broad outline the building material assemblage is sufficient to indicate that standing buildings with ceramic-tiled roofs were present in the close vicinity of the site during the Roman period. The range of roofing materials and method of manufacture may represent changing technologies/fashions or economic conditions in Middlewich and the wider region during the Roman period.

Initial comparison of the assemblage with the phased site matrix suggests that small quantities of residual roofing/building material were being deposited within ditches and pits from around the late 1st-early 2nd century. However it is not until the mid-2nd century

that larger quantities are seen, for example in pit 908/911 and ditch 1216 as mentioned above. Each of these may represent single demolition/rebuilding events.

The use of micaceous sandstone as a roofing material does not occur until the late 3rd-4th century, and seems to be localised in the north-eastern corner of the site, with examples recovered from contexts 102 and 1213.

The possible kiln furniture/very coarse brick is interesting, as this appears in some of the earliest contexts on site. These include context 175 (sand make-up layer for crushed briquetage floor) in Trench 1, and pit 1275 and gully 1258 in Trench 12. This would suggest the presence of a salt kiln nearby in the pre-Roman or very early Roman periods. This material is also present in 2nd century contexts, including floor surface/make-up layer 157 in Trench 1 and fills 418/419 of pit 403 in Trench 4.

8.4.5 **Recommendations**

The group should be studied further to establish the full range of roofing materials used throughout the history of occupation of the site. Taken on its own it is unlikely that the group will be datable, but considered in tandem with the ceramic assemblage and other materials from the phased stratigraphic sequence, it should be possible to further identify trends in the types of materials being used through time, which in turn may reveal information regarding techniques of manufacture, sourcing of natural building material, status of dwellings and the fortune of the settlement as a whole. Further spatial/temporal analysis of contexts with particularly high concentrations of building material may help to establish periods of reconstruction/demolition adjacent to the site (Task 6).

The distribution of kiln waste should be compared with that of the briquetage, again to establish zones or patterns of deposition (Task 7).

8.5 **BRIQUETAGE**

8.5.1 **Introduction**

The briquetage has been assessed by Gifford. In total the excavation produced 17kg of briquetage (611 fragments) from 54 stratified Roman contexts split between Trenches 1, 2, 4, 8, 9 and 12.

8.5.2 **Fabrics**

Two main fabrics have been identified; the first containing a high proportion of voids from the organic temper that was mixed in with the clay to prevent cracking during the frequent variations in temperature within the brine kiln, the second a coarse sandy fabric.

8.5.3 **Forms**

The first fabric type was ubiquitous in all trenches, and three principal forms were identified; flat ‘pan’ fragments c. 11mm thick with bevelled edges and rounded corners and distinct zones of oxidation and reduction (Bestwick Class E; 1974;69), ‘bar’ fragments with a cross-sectional dimension of c. 50mm x 50mm (Bestwick Class B), and ‘brick’ fragments upward of 200mm in length, though no complete pieces of this form

were found. These may have been smaller fragments of 'fire bars' used to support brine pans within the kiln, which could be upward of 0.6m in length.

Only one form of the second fabric was identified- flat 'pan' fragments less that 10mm thick, some with rebated edges, perhaps to accept a support or lid. This latter form was predominantly found towards the southern end of the site, and Trench 9 in particular. One piece of this fabric at least had cat/kitten footprints embedded in the surface, suggesting that the material had been left to dry in the open before use.

In Trenches 1 and 12 several floor surfaces had been formed from crushed briquetage and charcoal- presumably kiln waste. Here it was not possible to identify form as the fragments were too small.

8.5.4 **Discussion**

The quantities of briquetage seen on this site, both deposited as waste within sealed contexts and used as a flooring material in Trenches 1 and 12, are strongly indicative of salt production in the vicinity during the 2nd and 3rd centuries AD. Although no direct evidence for a kiln was found, the association of briquetage within features of an industrial nature such as pit 402 in Trench 4, and pit 1247 and ditch 1221 in Trench 12 is very suggestive. As with other materials on site, the briquetage should be subjected to typological study, and tied in to the overall phasing of the site to assess whether fabric/form can be seen to change through time, and to pinpoint areas or zones of activity across the site. Any correlations with the building material identified earlier as having been used in kilns should be analysed in more detail (Task 7).

8.6 **STONE ARTEFACTS**

8.6.1 A total of 14 stone objects were recovered from the excavation, weighing 13.7kg.

8.6.2 There were 2 identifiable granite quern fragments with worn surfaces recovered from pit fill 911 in Trench 9 and cleaning layer 1212 in Trench 12. Further small granite fragments, possibly derived from quern stones, were found in track surface 116 in Trench 1, pit fill 908 in Trench 9, and ditch fill 1216 and cleaning layer 1218 in Trench 12.

8.6.3 A single block of red sandstone weighing 9kg was found in the spoil of Trench 9. This was shaped and contained a series of grooves, possibly rope wear-patterns or deliberate working. The date of this piece is unclear.

8.6.4 The granite objects should be studied further to identify their provenance, and the recognisable quern fragments should be looked at in detail to identify type/form (Task 8).

The unstratified red sandstone from Trench 9 is almost certainly locally sourced. Since no other red sandstone objects were found in Roman contexts anywhere else on the site, it seems likely that this piece is later in date. This should be looked at further to determine its function and potential age.

8.7 ENVIRONMENTAL SAMPLES

8.7.1 Introduction

Three bulk sediment samples (classified as 'GBA'/'BS' sensu; Dobney et al. 1992) were submitted to Palaeoecology Research Service Ltd (PRS), County Durham, for an assessment of their bioarchaeological potential.

The samples came from fills at the base of a large pit (approximately 4 m in diameter and over 1.5 m deep) within an industrial building of late 2nd to 3rd century date. The primary fill was a yellow organic-rich layer resembling horse manure, but which could perhaps be thatch (Context 1257). This was overlain by a thin lens of black organic material which was fibrous and grassy in appearance (Context 1280). Overlying this was a thick fill of brown 'peaty' material (Context 1278) which contained wood and leather off-cuts, as well as the trunk of a silver birch tree. All of the deposits were below the water table.

A further 11 bulk samples were collected, 7 of which were processed on-site. These were from contexts 142, 908, 1215, 1220, 1222, 1265 and 1287 in Trenches 1, 9 and 12.

8.7.2 Methods

The sediment samples were examined in the laboratory and their lithologies recorded using a standard pro forma. Subsamples were processed by paraffin flotation broadly following the methods of Kenward et al. (1980; 1986) for the recovery of plant and invertebrate macrofossils.

Plant remains in the processed sample fractions (residues and flots) were recorded briefly by 'scanning' using a low-power microscope, identifiable taxa and other components being listed on paper. Nomenclature for plant taxa follows Stace (1997). The residues were primarily of uncharred organic remains (preserved by anoxic waterlogging) and recorded wet.

The flot was also examined for insect and other invertebrate remains using a low-power microscope (to x40). Nomenclature for insect follows Kloet and Hincks (1964-77).

The samples were examined for the eggs of intestinal parasitic nematodes using the 'squash' technique of Dainton (1992). Assessment slides were scanned at 150x magnification with 600x used where necessary. Although primarily for the detection of intestinal parasitic nematode eggs, the 'squash' technique routinely reveals other microfossil remains, and where present these have been noted.

The remaining 7 bulk samples were washed in a floatation tank, with coarse residues collected in a 1mm mesh and the floating fraction passed through a 500 micron sieve. The processed flots have been preliminarily assessed for organic content, the full analysis will be included in further work.

8.7.3 Results

The results are presented in context number order. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method

and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample numbers.

Context 1257 [organic primary fill of pit within late 2nd to 3rd century Roman building]
Sample 11/T (2 kg/4.5 litres sieved to 300 microns with paraffin flotation; all of the submitted sediment was processed, but a further 4 kg was retained by the excavator)

Moist, dark grey (externally) to light to mid orange-brown (internally), brittle, layered and compressed, slightly sandy slightly clay, fine and coarse herbaceous detritus and amorphous organic sediment. There were some areas where clay and silt formed a greater, but still minor, part of the deposit. Stones (2 to 6 mm) were present and 'straw' was abundant in the sample.

The bulk of both the residue (1.4 litres) and the flot (~25 ml) consisted mostly of 'straw-like' material and small plant fibres. There were also wood fragments, twiglets, bud scales, possible herbivore dung, some charcoal and a few rootlets. Twigs and leaves of heather (*Calluna vulgaris* (L.) Hull) were very common. Other identifiable plant remains included caryopses of bent (*Agrostis*), stems and leaves of mosses (*Bryophyta*), utricles and nuts of sedge (*Carex*), achenes of cornflower (*Centaurea cyanus* L.), cereal pericarps, nutlets of wild basil (*Clinopodium vulgare* L.), hemp-nettle (*Galeopsis*) and selfheal (*Prunella*), achenes of dock (*Rumex*), and calyces and pods of clover (*Trifolium*). All of these remains, except for a very few sedge utricles (which were charred) were preserved by anoxic waterlogging.

There were a few variably preserved invertebrate remains in the flot. Some beetle sclerites (e.g. of Cercyon analis (Paykull) and ?Monotoma picipes Herbst) were very well preserved and there were also some fragile remains present (e.g. wing fragments), whereas other macrofossils were heavily eroded (though fragmentation was generally quite low). Other remains present included sclerites of staphylinid beetles and some fly puparia.

The microfossil 'squash' was mostly fragments of plant tissue, with some pollen grains/spores and a very small inorganic content. No eggs of intestinal parasitic nematodes were seen.

Context 1278 ['peaty' fill of pit within late 2nd to 3rd century Roman building]
Sample 9/T (2 kg/3.8 litres sieved to 300 microns with paraffin flotation; all of the submitted sediment was processed, but a further 4 kg was retained by the excavator)

Moist, mid to dark grey-brown to very dark grey (with some areas which were mid to dark orange-brown internally), brittle, layered and compressed, slightly sandy silty clay fine and coarse herbaceous detritus and amorphous organic sediment. There was a minor component of light to mid grey clay silt. Stones (2 to 20 mm), fly puparia, wood, 'straw' and rootlets were present in the sample.

Plant material formed most of both the residue (1.8 litres) and the flot (~15 ml) and was mainly of tiny wood fragments, 'straw-like' items and other plant fibres. There was also a smaller amount of possible herbivore dung. As in the previous context, there were a large number of twigs and leaves of heather. Other leaves included those of mosses and bracken (*Pteridium aquilinum* (L.) Kuhn). Seeds, fruits and other parts of the inflorescence of the following taxa were encountered: foxtail (*Alopecurus*), meadow-grass (*Poa*), and other representatives of the grass family (*Poaceae*); orache (*Atriplex*), brome (*Bromus*), sedge, cornflower, mouse-ear (*Cerastium*), hemp-nettle, rush

(*Juncus*), ribwort plantain (*Plantago lanceolata* L.), tormentil (*Potentilla erecta* (L.) Raeusch.), selfheal, buttercup (*Ranunculus* subg. *Ranunculus*) and chickweed (*Stellaria media* (L.) Vill.). The only remains of cultivated plant species were glume bases of spelt wheat (*Triticum spelta* L.). All of the remains mentioned were preserved by waterlogging.

The flot contained a substantial assemblage (forming perhaps 30% to 50% of the total volume) of highly variably preserved invertebrate remains. Many of the remains were very well preserved but still more were reduced to 'filmy' scraps of cuticle. There were numerous beetle remains, including those of Cercyon analis, Cryptopleurum ?minutum (Fabricius), various staphylinids (including Omalium rivulare (Paykull)), ?Monotoma picipes, Anobium punctatum (Degeer) (the woodworm beetle), some Carabidae, a ?spider beetle (cf. Ptinidae) and weevils (Curculioindae). There were also many fly puparia and mites (Acari), some sculpted and other ants (Formicidae) and remains of fragile structures in the form of wing fragments.

The microfossil 'squash' was mostly fragments of plant tissue, with very many pollen grains/spores and a small inorganic content. No eggs of intestinal parasitic nematodes were seen.

Context 1280 [lens of black fibrous organic material in pit within late 2nd to 3rd century Roman building]
Sample 12/T (1 kg/1.4 litres sieved to 300 microns with paraffin flotation; approximately 0.5 litres of unprocessed sediment remain)

Wet, very dark grey-brown to black, unconsolidated to slightly sticky (working more or less soft), slightly sandy slightly clay silt. Stones (2 to 20 mm) and twigs were present and fine and coarse herbaceous detritus was abundant in the sample.

Both the residue (600 ml) and the flot (~10 ml) were, again, largely composed of plant remains. More than half of the plant material was charred or partially charred. It was composed of wood fragments, twiglets, bark, charcoal, 'straw-like' fragments, fibres, rootlets, bud scales and possible herbivore dung. Charred remains included brome, sedge, common knapweed (*Centaurea nigra* L.), hulled barley (*Hordeum distichon/vulgare*), rush (*perianths*), selfheal and dock. There were also remains preserved in a waterlogged state, including those of corncockle (*Agrostemma githago* L.), mosses, bedstraw (*Galium*), hawkbit (*Leontodon*), gypsywort (*Lycopus europaeus* L.), meadow-grass and clover.

The flot gave only a few invertebrate remains most of which were of fly puparia. There were also some mites, ants and a few beetle remains (including Cercyon analis, staphylinids and ?Monotoma picipes). Preservation of the remains was, again, highly variable, with some being very well preserved and others no more than heavily eroded ('filmy') scraps.

The microfossil 'squash' was mostly of charred (approximately two-thirds) and uncharred (most of the remaining third) organic detritus, with a small inorganic content. No eggs of intestinal parasitic nematodes were seen.

8.7.4 Discussion and statement of potential

In Contexts 1257 and 1278, all or almost all of the plant material was waterlogged, whereas in Context 1280 (intermediate between the two others) there was a

considerable proportion of charred remains. All of the plant remains recovered from the three contexts – whether preserved by waterlogging or charring – were in an excellent state of preservation and represented taxa of various habitats. The assessment showed that the three contexts contained substantial and diverse assemblages of plant taxa, with good potential to provide information for environmental reconstruction.

Lumps of compacted and layered short plant fragments which are likely to be herbivore dung were found in all three contexts. This together with the abundant 'straw-like' material suggests that 'stable manure' (sensu Kenward and Hall 1997) was probably a major component of the sediments.

In Contexts 1257 and 1278 remains of heather (*Calluna vulgaris* (L.) Hull) were conspicuously frequent. This species is characteristic of heath land and may have been imported with turves (perhaps for roofing) or to serve as bedding (for animals or humans). It may conceivably also have been used as a dye plant (Kenward and Hall 1995). In the present archaeological context, the most likely utilisation would seem to be as bedding for animals.

Finds of cultivated plant were relatively rare. Context 1280 gave a rather small number of charred hulled barley grains. The records of spelt wheat from Context 1278 correspond well with the date of the building (late 2nd to 3rd century) in which the pit was situated, as this was an important cereal in the Roman period, but becomes rare thereafter.

Invertebrate remains were present in all three of the examined deposits and abundant in the flot from Context 1278 (Sample 9). Each of the assemblages exhibited highly variable preservation, but included some very well preserved remains. Remains of the beetle Cercyon analis were recovered from all three deposits. This species lives in decaying organic matter of various kinds (including dung and compost) and supports the suggestion that the lumps of compacted and layered short plant fragments seen were of herbivore dung. The presence of Omalium rivulare and Cryptopleurum ?minutum in Context 1278 lend further support, again indicating the presence of decaying organic material and specifically dung, respectively. The presence of animal dung would also explain the fly puparia present in all three of the samples.

The only identifiable microfossils recorded from the 'squash' subsamples were pollen grains/spores—numerous in Context 1278, present in Context 1257 and absent from Context 1280. In particular, no eggs of intestinal parasitic nematodes were seen.

Although the sampled feature was located within an industrial building, there was no evidence of waste from industrial activity. The plant and invertebrate assemblages recovered suggested that the deposits consisted largely of waste (e.g. soiled bedding material, traces of cereals – perhaps from fodder) cleared from the housing of domestic animals.

The site processed flots all yielded preserved/charred plant remains to an extent. Contexts 142, 908, 1222 and 1265 were particularly rich, and it is anticipated that these samples have a good potential to provide environmental information. Additional samples are yet to be processed, and these may also provide useful information. Fill 1272 of possible pre-Roman pit 1273 in particular was noted for its rich organic content.

8.7.5 **Recommendations**

Further analysis of the plant and invertebrate remains from each of the three contexts would allow more precise environmental reconstruction and a more detailed interpretation of the archaeological context (Task 9).

All of the remaining sediment from Contexts 1257 and 1280 should be processed to recover additional invertebrate remains. The remains from the current subsample from Context 1278 are sufficient for analysis, but additional rounds of paraffin flotation should be applied to the residue to ensure that as many invertebrate macrofossils as possible have been recovered.

The remaining bulk samples from the excavation should be processed and the flots submitted for assessment and further analysis where necessary (Task 10).

8.7.6 **Retention and disposal**

All of the remaining material, together with the plant and invertebrate macrofossils recovered from the processed subsample, should be retained for the present.

8.7.7 **Archive**

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

8.7.8 **Acknowledgements**

The authors are grateful to Laurence Hayes, of Gifford and Partners Ltd, for providing the material and the supporting information.

8.8 **TIMBER**

8.8.1 **Introduction**

Three samples of waterlogged timber from the excavation were submitted to Ian Tyers of ARCUS for assessment and potential dendrochronological dating. All of the samples were timbers from pit 1247 in Trench 12; sample 19 was suspected to be a silver birch trunk, while samples 20 and 21 were stakes which appeared to have been driven through the silver birch trunk.

8.8.2 **Range, variety and condition**

Sample 19 was positively identified as a halved (split) silver birch trunk. Both samples 20 and 21 were identified as oak stakes, each were quartered pieces of very small trees (or possibly a single tree). All of the samples contained heartwood, sapwood and bark, and were in good condition having been preserved in the peaty, waterlogged fills of pit 1247.

8.8.3 **Discussion**

It was not possible to date sample 19. Silver birch does not grow annual rings in a consistent way, and there are no comparable datasets of the species for this period or any other. In this instance the timber was from a halved small young tree. There were no obvious tool marks to suggest sawing or working of the timber, so either any marks had been eroded through use, or more likely the tree had been split down its grain. This is a simple, low-tech approach, but is good for retaining the strength in the timber as it does not require crossing the grain of the wood.

Birch is not a widely used timber in any period. It is too weak and soft, so it would perhaps suggest this object was only meant for temporary use, as it would not have lasted with any strength for very long buried or above ground. This would seem to preclude it from having a structural function.

Samples 20 and 21 were initially thought to have been driven through the silver birch trunk, but there were no signs of working on the latter, and it is suggested that the oak stakes had merely been deposited adjacent to the silver birch trunk. Unfortunately neither of these had enough rings to secure a date for the felling of the wood, and as with sample 19 there were no signs of tooling.

8.8.4 **Potential for further work**

The timbers were not datable or diagnostic of any particular function, and therefore there is no potential for further analysis of this group.

8.9 **ANIMAL BONE**

8.9.1 **Introduction**

The hand-collected animal bone has been examined by Gifford to assess its potential for further analysis. For each context the bone was quantified, examined for signs of butchery, burning or gnawing, and notes made on species present (where possible), state of preservation and colour variability. The results are given in Table 12, Appendix B.

8.9.2 **Provenance, Range and Variety**

A total of 959 fragments of animal bone weighing 5.3kg were recovered during the excavation. Thirty two of these were from unstratified spoil, the remainder were divided between 56 sealed archaeological deposits. No shell was recovered.

Higher concentrations of animal bone were noted in the following contexts:

- Road surface 103 (Trench 1)
- Layer 104 (Trench 1)
- Buried soil 183 (Trench 1)
- Pit fill 402 (Trench 4)
- Pit fill 908 (Trench 9)
- Ditch fills 1216 and 1221 (Trench 12)
- Pit fill 1243 (Trench 12)

The dominant species present were sheep/goat, cattle and pig. To a much lesser degree chicken, deer, horse and dog bones were also present.

8.9.3 Condition

In general the assemblage is in a poor to very poor state of preservation, with the exception of material from contexts 122, 908, 912 and 1223.

Thirty four contexts exhibited colour variation in the bone content of that feature, indicating a degree of residuality in the make-up of those contexts. Burning was evident in 28 contexts and from all trenches. In only 12 contexts were there signs of butchery, predominantly knife cut marks on sheep/goat leg bones, but 4 later contexts in Trench 12 (1216, 1218, 1255 and 1282) contained bones that had been chopped/sawn. Dog gnawing was evident on bones from contexts 906, 1216 and 1223.

8.9.4 Discussion

All of the identifiable vertebrate remains were from domestic animals. Most of these were sheep/goat, and cattle to a lesser degree, with little variation in the species present in each context throughout the Roman period. The majority of bones present in the assemblage (mostly limb bones and meat cuts) represent domestic consumption, rather than butchery or secondary processing (such as tanning) from which a higher proportion of non-meat cuts and head bones would be expected.

A basic archive of the vertebrate assemblage should be produced for the stratified material in Trenches 1, 4, 9 and 12 (Task 11). A detailed study of the species present by context and phase may help to identify subtle variations in local diet through time, and this should be compared to other assemblages from sites in the vicinity in order to draw comparisons.

8.10 HUMAN BONE

8.10.1 The cremated human bone recovered from context 208 (Trench 2) was submitted to Dr Jessica Pearson at Liverpool University for identification and analysis (Task 12). The results of this analysis are pending.

8.11 GLASS

8.11.1 Introduction

The glass from the excavation has been quantified and assessed by Gifford with the assistance of Dr Andy Towle to determine its potential for further analysis.

8.11.2 Provenance, Range and Variety

In total 55 fragments of glass were retained, weighing 214g. Of these only 4 fragments were unstratified, and these were all sherds of post-medieval bottle glass. The remainder were from stratified Roman contexts in Trenches 1, 4, 8, 9 and 12.

Nine fragments are classified as window glass, all of which were from Trench 12 with the exception of a single fragment from Trench 9. A further 39 fragments of vessel glass

were recovered from those trenches listed above. The majority were body sherds from thick-walled square-blown storage vessels, though thin sherds of beaker glass were also present.

Finally three decorative glass beads were recovered from Trenches 4 and 12. The first of these was a faiance melon bead from context 419 in Trench 4. This has lost its original vitrified outer surface, though the colour and finish is still visible running through the bead. A second small melon bead of dark-blue glass was recovered from ditch 1215 in Trench 12. The third was a small, faceted cylindrical bead in green glass recovered from midden deposit 1217 in Trench 12.

8.11.3 **Potential**

Though the assemblage is not large, there are a number of interesting pieces within the assemblage which warrant further analysis. Firstly the beads require further study in terms of typology, date and technology of manufacture (Task 13). Secondly the vessel glass group contains a number of diagnostic pieces, including rims and handle and shoulder joins, and these should be identified by type and where possible date of manufacture (Task 14).

The results of these further analyses should be considered alongside the ceramic assemblage to assist in refining the dating and phasing of the site's stratigraphic sequence. This will also improve understanding of the economic status of people dwelling at the site, and activities taking place on the basis of the function of vessels present in the assemblage.

The window glass is largely undiagnostic, but further analysis of the spatial and temporal distribution of the fragments will help to establish patterns of deposition across the site (Task 15).

8.12 COINS

8.12.1 A total of 15 coins were recovered from the excavation, of which 3 were Roman and 5 were English. The remainder were in too poor a condition to identify. The majority were discovered through metal detecting of the spoil heaps, and are therefore unfortunately unstratified.

Trench	Context	Cu Alloy	Silver	Notes
4	U/S	3	-	George V penny (1931), Victorian half penny (1862), unrecognisable disc
8	U/S	1	1	Roman bronze coin, silver English coin (Elizabeth I?)
9	U/S	2	-	Both in bad condition, one poss. Roman, one post-medieval
9	906	1	-	Bronze coin, very bad condition
10	U/S	1	-	1942 penny. Very poor condition
12	U/S	2	2	2 Roman denarii (one possible silver plated forgery). 2 copper coins in very bad condition
12	1202	-	1	1631 Charles I half-groat
12	1213	1	-	Bronze coin (Roman?) very bad condition

TOTALS	11	4	

Table 5: Coins recovered from the excavation

8.12.2 The numismatic assemblage is unlikely to refine any dating of the stratigraphic sequence given the low frequency of stratified coins. However the group can be usefully compared to known coin assemblages from other sites in the area in order to establish wider patterns of habitation and the nature of the settlement, and should therefore be submitted to a specialist in order to identify and catalogue the group (Task 16).

The coins in poor condition may be identifiable through conservation, so these should be submitted for further assessment, and should also be assessed for stability in long-term storage (Task 16).

8.13 IRONWORK

8.13.1 Introduction

The iron objects recovered from the excavation have been assessed by Gifford. These have been quantified by context, with notes made on the forms present. The results are presented in Table 13, Appendix C.

8.13.2 Quantity, Provenance, Range and Variety

A total of 709 Iron objects were found during the course of the excavation. Thirty eight of these were unstratified; the remaining 671 were from sealed archaeological deposits in Trenches 1, 4, 9 and 12. Artefact retrieval was greatly increased by the use of metal detectors during the excavation.

Particular concentrations of iron objects were noted in the following contexts:

- Pit fill 108 (Trench1)- 11 objects
- Pit fill 402 (Trench 4)- 7 objects
- Layer 905 (Trench 9)- 9 objects
- Metalled surface 1206 (Trench 12)- 39 objects
- Pit fill 1210 (Trench 12)- 28 objects
- Ditch fill 1216 (Trench 12)- 45 objects
- Midden deposit 1217 (Trench 12)- 176 objects
- Ditch fill 1222 (Trench 12)- 28 objects
- Ditch fill 1223 (Trench 12)- 30 objects
- Layer 1231 (Trench 12)- 58 objects
- Layer 1281 (Trench 12) 10 objects

Of the 709 iron artefacts, the vast majority were nails (590, or 83.2% by count of the total assemblage), many of which had been deliberately bent, presumably to secure the nail to the timber into which it had been driven.

The remainder of the objects are summarised in Table 6 below:

Object	No.
Bolt	2
Rivet	2

Non-finger ring	2
Key?	1
Knife handle	3
Door fitting	3
Jews harp	1
Penannular brooch	1
Unidentified	104
Total	**119**

Table 6: Summary of iron objects

8.13.3 **Discussion**

The iron objects were generally in poor to very poor condition, with 104 objects (14% of the total assemblage) corroded beyond recognition. The majority of the group were nails, and these probably relate to structures that stood on or in the vicinity of the site in the Roman period. The location of these objects may positively correlate with deposited building material on the site, and any connection should be looked at in detail (Task 17). In addition there are a number of different nail types which should be identified and analysed to see if there are any trends in terms of zones or times of deposition (Task 18).

The remaining identified objects are few in number, however there are a few interesting items, including the brooch and Jews harp, and it is recommended that these should be identified by type, catalogued and selected items drawn.

The large quantity of unidentified objects should be looked at in detail and selected items x-rayed to aid identification.

8.14 **LEAD OBJECTS**

8.14.1 **Introduction**

The lead objects were assessed by Gifford. For each context the quantity of lead casting waste, sheet lead or identifiable objects was recorded, making notes on form where applicable. The results are given in Table 7 below.

Tr No	Ctxt	Casting waste	Sheet Lead	Object	Notes
1	103		1		Single strip of folded sheet lead
2	U/S	2	1	1	Lead weight with concentric ridge design 40mm diam.
3	U/S	1			Moulded to shape of crucible base
4	U/S	17	7	3	Lead collar (square bore 7mm diam.) Crude loom weight, strip rivet.
4	402	6	1	2	Handle (solid core, folded sheet lead sheath), poss. mount w/ circular hole
4	404		1		
6	U/S		1		Thin strip
7	U/S	5			
8	U/S			1	Musket ball
9	U/S	7	1	2	Poss handle (as 402), loom weight

9	905		2		
9	906	2			
9	908	1			
9	911	1			
10	U/S	3	2	3	Musket ball, loom weight, rivet
11	U/S	5	3		
12	U/S	74	18	8	Part of lead ingot, 3 weights, 2 rivets, 1 chape, 1 mount,
12	1215	1			
12	1217			1	Loom weight
12	1246			1	Bent cylindrical handle?
12	1231	2			Large piece of casting waste
12	1281	1			
12	1282	8			
TOTALS		**136**	**38**	**22**	

Table 7: Lead object count by context

8.14.2 **Quantity, Provenance, Range and Variety**

In total 196 lead objects were recovered from the excavation, weighing 5.5 kg. Thirty one of these were from 13 stratified Roman contexts in Trenches 1, 4, 9 and 12, the remainder were unstratified. This reflects the fact that the majority of the artefacts were collected during metal-detecting on the spoil heaps or during machining. Artefact retrieval has undoubtedly been increased by the use of metal detectors.

The largest group of objects is the lead casting waste (136 out of 196 objects). There were 38 pieces of sheet lead, and 22 identifiable objects including lead weights (both loom weights and for measuring), rivets, mounts and handles, though only 4 of these were from stratified contexts. The high incidence of unstratified casting waste from Trench 12 is almost certainly a function of more intensive metal detecting during the opening of this trench.

8.14.3 **Discussion**

The majority of this material appears to be residual, but of Roman date. The only concession to later activity is the presence of 2 musket balls, both recovered from trenches at the southern end of the site (perhaps stray shots from Civil War activity which was focussed around the church of St Michael and All Angels to the southwest in late 1642-43). It is apparent from the high quantity of casting waste and sheet lead recovered that lead working was being carried out nearby during the 2nd century and later, but there is no direct evidence to suggest where.

The location of casting waste within Trench 12 (contexts 1231, 1281 and 1282) is interesting because these contexts are not directly associated with other deposits bearing evidence of salt production in the mid 2nd century. This may point to a progression of industrial activities at the site through time.

In terms of further analysis, the lead should be considered alongside the ironwork and metalworking slags to address issues of spatial and temporal land-use zoning across the site. A typological study of the identifiable artefacts should be carried out as this may help to refine dating and phasing of the stratigraphic sequence, and ultimately a catalogue of the material should be produced to be included with the archive (Task 19).

8.15 COPPER ALLOY

8.15.1 Gifford has assessed the copper alloy objects and the results are presented below. This assessment does not include coins/tokens. Refer to the coins section above for detail on these objects.

Trench	Context	No.	Notes
4	U/S	1	Part of buckle
4	404	1	Rim of copper alloy vessel
4	416	1	Fibula brooch (trumpet)- condition poor
5	U/S	1	Copper alloy bell (cattle?)
7	U/S	2	Part of buckle, button
8	803	1	Small conical mount
9	U/S	1	Unidentified object
9	912	1	Globular headed copper alloy (hair?) pin, broken, 18mm long
12	U/S	11	'Polden Hill' Roman fibula brooch (very good condition), globular pin-head, stud, button, spoon, candle stick, furniture/door mount
12	1202	1	Trumpet brooch (pin broken), decoration missing from base of shaft
12	1203	1	Broken trumpet brooch head
12	1220	1	Part of copper alloy pin (plated?)
TOTAL		23	

Table 8: Quantity of copper alloy objects

8.15.2 **Provenance, Range and Variety**

A total of 23 copper alloy objects were found during the excavation weighing 300g. Of these, 16 were unstratified having been collected from spoil heaps, and 7 were from stratified contexts, 6 of which were of Roman date.

The Roman objects were predominantly dress accessories- fibulae and pins- and one fragment of a bronze vessel. The stratified fibulae were all of the 'trumpet' variety, though a 'Polden Hill' brooch was found in the spoil of Trench 12. The pins were round-wire, globular headed pins (probably hair pins), but lacked decoration.

The unstratified material contained a collection of modern (19^{th}-20^{th} century) objects, though notable exceptions were the Polden Hill fibula and the spherical cattle bell from Trench 5, which may have been medieval in date.

The majority of this group was in poor condition due to the unfavourable soil conditions, except where the material had formed a protective patina.

8.15.3 **Potential**

As with the lead assemblage, a large proportion of this material was recovered from the spoil heaps through metal detecting and is therefore unstratified. Nevertheless there are a number of interesting pieces which are worthy of further analysis. In particular the brooches, bell and pins should be subjected to typological analysis which may help to

further tie down spot dates for their source contexts. This may also reveal any peaks in object loss at particular times. In addition a catalogue of the group should be produced, and a selection of these objects may be suitable for illustration in the final publication (Task 20).

A conservator should be consulted to assess the stability of these objects for long-term storage.

8.16 **SLAG**

8.16.1 A total of 7kg of industrial (metal working) slag was recovered from the excavation (134 fragments). Of these, four were unstratified. A small concentration was present in stratified Roman contexts in Trench 1. The majority of the slag was located in Trench 12, including a large concentration in pit fills 1210 and 1244 associated with a clay-floored industrial building, a concentration in a mid-late 2nd century ditch (1221) to the south of the building, and midden layer 1217.

8.16.2 Although only briefly assessed as part of this report, none of the material is attributable to 'high-status' metallurgy. It is immediately apparent however that the occurrence of this type of industrial waste on site falls into a discrete area centred on the industrial building in Trench 12 (including those finds in Trench 1), within contexts formed during the mid-late 2nd century AD.

8.16.3 In terms of further analysis, the group should be categorised by type to determine the nature of the metal working on site. As with other classes of material, the group should be subjected to full spatial analysis to further pin down zones of activity, and associations with other processes (Task 21). In addition it will be useful to assess the presence of hammer scale within those contexts where slag is also present in order to clarify the balance between smelting and smithing (Task 10).

8.17 **CLAY PIPE**

8.17.1 The clay pipe was assessed by Gifford. The number of stem and bowl fragments were counted by context, and these are given in Table 9 below.

Context	Stem	Bowl	Stamp	Notes
U/S Tr 3	3	-	-	1 heel
U/S Tr 8	3	-	-	
802	1	-	-	
U/S Tr 12	1	-	-	Late 17th-18th?
1204	1	-	-	From cleaning layer
1266	1	-	-	

Table 9: Clay pipe quantities

8.17.2 The assemblage is very small, comprising 10 stem fragments. Of the three stratified pieces, those from Trench 12 are not in their original context. The remainder were unstratified.

8.17.3 The provenance of this material is almost certainly through limited manuring of the field during the later post-medieval period. The group is largely non-diagnostic, and scattered

widely across the excavation area. It is therefore recommended that no further work be carried out on this group.

8.18 **FLINT**

8.18.1 The flint has been looked at by Dr George Nash of Gifford to assess its potential for further analysis.

8.18.2 Only 8 pieces of flint were found during the excavation weighing 155g. Six were recorded as unstratified, and the remaining two were from sealed Roman contexts in Trench 12. Of these, 7 were natural pieces and one appeared to be debitage. There was one fragment of burnt chert, and 2 pieces of burnt flint, one of which was the debitage. One flint pebble appeared to be water worn.

8.18.3 Although most of this material appears to have been imported onto site from elsewhere, none of the fragments are diagnostic and therefore the group does not warrant further study.

9. ACKNOWLEDGEMENTS

9.1 The excavation at Buckley's Field in 2005 was enormously successful, drawing in large numbers of keen local volunteers of all ages and abilities. This assessment report, which summarises the data created during the three month excavation period, is a testament to the hard work that was done by all, and demonstrates the enormous potential of the site to carry on revealing fresh aspects of the town's past.

9.2 On a project of this scale it is difficult to acknowledge everybody who took part, but a debt of gratitude is owed to all the volunteers and guides who made the site work possible, from the finds processing team and excavators, to the onlookers for their moral support. Thanks are also due to the local residents who provided water, tea and shelter. The site accommodation was supplied by Pochins, Middlewich, and all machine hire was provided by Will Morton. Additional site help was provided by Gerry Martin, Mel Hutchinson, John Onraet and Michael 'Tam' Webster.

9.3 The geophysical surveys were carried out by Hannah Heard and Laurence Chadd of Stratascan in consultation with Peter Barker. David Jordan of Terra Nova Ltd. assessed the results.

9.4 Sue Stallibrass of English Heritage provided technical advice regarding on-site sampling strategies and methodologies.

9.5 The evening lecture series that ran in tandem with the excavation was given by Anthony Martin, Andy Towle, George Nash, Tim Malim and Tim Strickland of Gifford.

9.6 The assessments contained in this report were carried out by Ruth Leary (pottery), Örni Akeret and John Carrott (environmental samples), Ian Tyers (timber), Jessica Pearson (human bone), Andy Towle (glass) and George Nash (flint). An initial inspection of the coins from the site was carried out by David Shotter.

9.7 The project was set up by Jonathan Williams and Chalky White of Middlewich Town Council and Tim Strickland and Tim Malim of Gifford, and funding was provided by the Local Heritage Initiative.

FIGURES

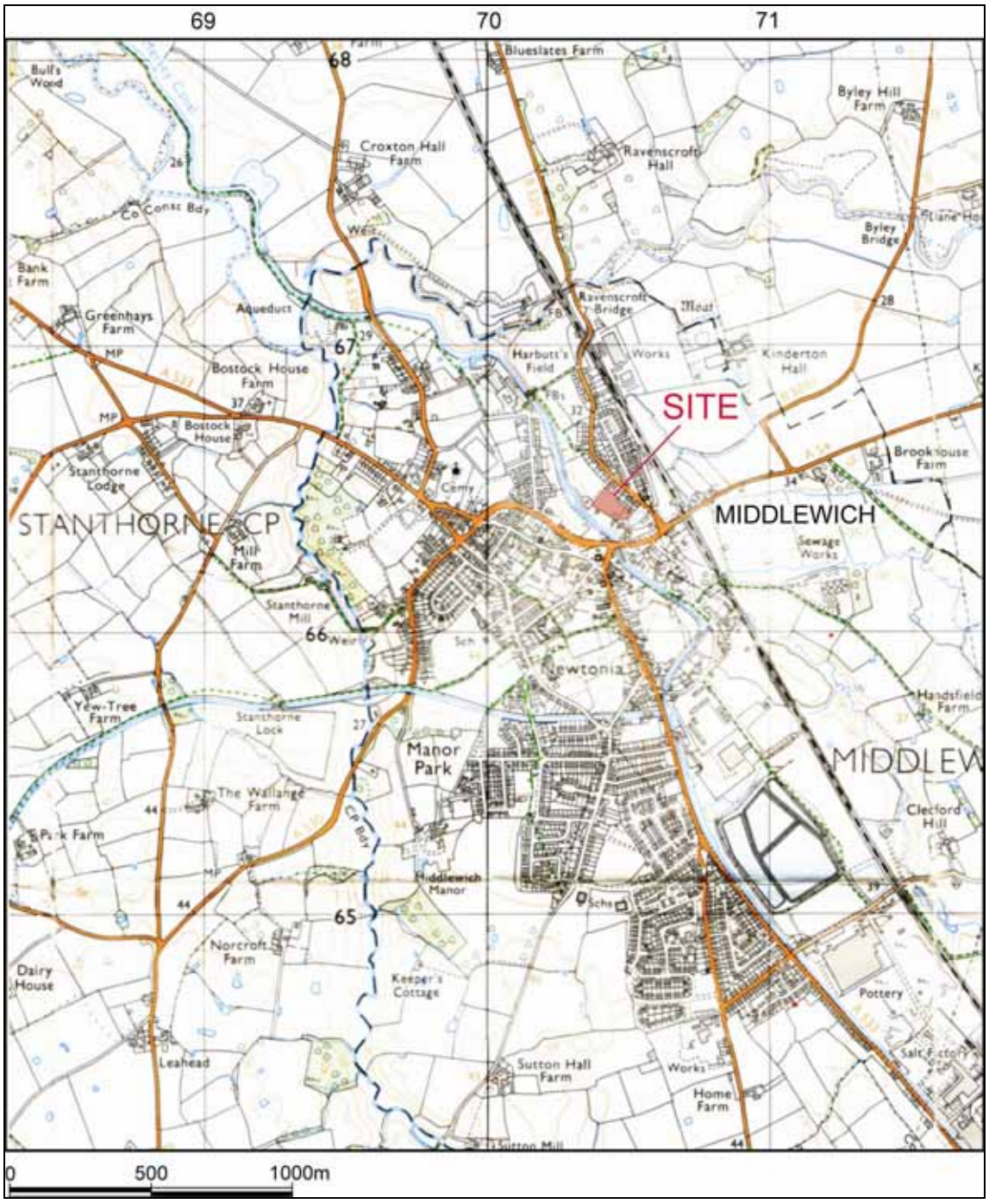

Figure 1: Site Location

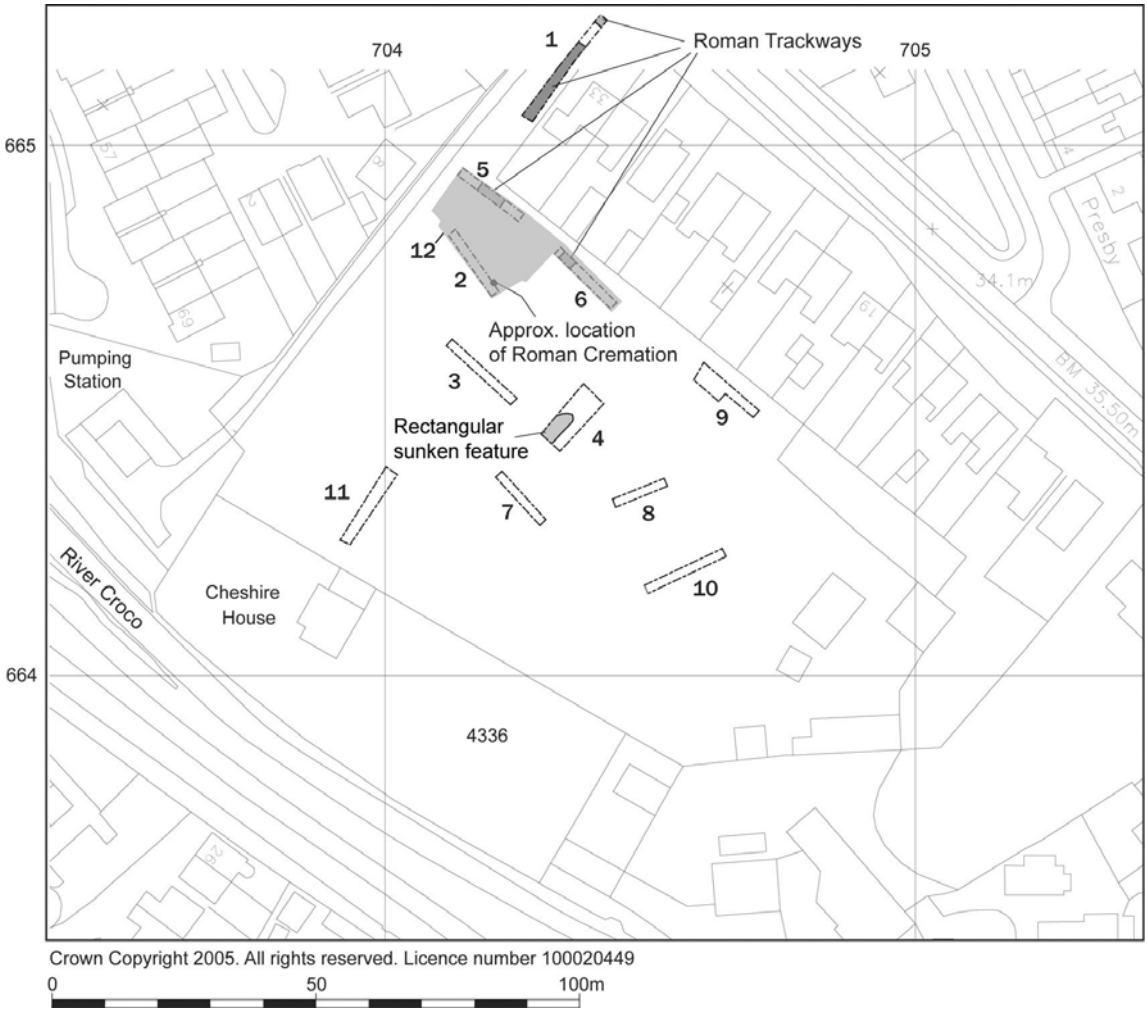

Figure 2: Trench Locations

APPENDICES

APPENDIX A
Pottery Assessment- Ruth Leary

The Romano-British Pottery

FACTUAL DATA

The pottery was scanned in context groups by site. Presence/absence of fabrics and forms were noted and each context was given a spot date range based on this rapid scan.

Quantity and provenance

There were c.3635 sherds of pottery. The quantities of pottery sherds recovered from the excavated areas and trenches are shown in Table 3 Around 330 sherds of samian ware were identified.

Trench	Sherd count (approx)
1	132
2	29
4	511
5	17
9	177
8	26
12	2743

(Table 3) quantity of pottery from features in excavated trenches

Out of 84 features, 9 had more than 100 pottery sherds. All but one of these larger groups came from trench 12. Three were cleaning groups, one was from above clay floor 1208, another from the road surface, and two came from ditch 1221 and one from pit the final fill of pit1247. A large group also came from pit 402 in trench 4. 48 groups had less than 10 sherds of pottery.

Much of the pottery comprised large, unabraded sherds, including material from the cleaning layers. A similar phenomenon was encountered at excavations carried out on the other side of King St (Leary forthcoming) where at least eight of the complete or near complete samian bowls came from buried soil and upper soil levels on the site. Such a concentration of large sherds within these layers suggests they represent rubbish deposits of some kind, perhaps middens, not otherwise distinguishable from the buried soil. There is some evidence that some of these deposits were incorporated into the tops of earlier features as in the case of fill 1210 in pit 1247 which contained considerably less pottery in the lower fills.

Range and variety of material

Wares

The pottery was examined by eye and sorted into ware groups on the basis of colour, hardness, feel, fracture, inclusions and manufacturing technique.

Ware	Ware Description	Tomber and Dore 1998 code	Source
BB1	Black burnished ware category 1	DOR BB1	Dorset
CC	Colour coated ware		Probably local
CC1	Orange ware with brown colour coat		Wilderspool
CC4	Orange-buff ware with brown		Argonne region

Ware	Ware Description	Tomber and Dore 1998 code	Source
	colour coat		
DR20	Dressel 20 oil amphora	BAT AM	Guadalquivir valley, South Spain
FLA	White ware, predominantly flagon		Including material from Mancetter-Hartshill and probably Wroxeter
FLA3	Cream-white ware. Predominantly flagon		Holt?
FLA4	Granular white ware	VER WH	Verulamium region
FLB	White-slipped ware		Some possibly made at Middlewich kiln made there and some from local kilns
FLB1	Fine white-slipped ware		Some possibly made at Middlewich kiln made there.
FLB2	Sandy white-slipped wares		Some certainly from Wilderspool
GAL AMP	Gallic wine amphora	GAL AM	Southern France
GR	Grey ware		Probably local
GRA	Fine grey ware		Probably local
GRB	Sandy grey ware		Probably local
GT	Grog-tempered ware	PNK GT?	Towcester/Milton Keynes area, probably PNK GT (Tomber and Dore 1998)
M Raetian	Raetian red slip mortaria	WIL RS	Wilderspool and possibly Wroxeter
M Wrox	M Wroxeter cream mortaria	WRX WH	Wroxeter
MG	Mica-dusted wares		Holt is likely but Manchester is possible
MH	Mancetter-Hartshill white ware mortaria	MAH WH	Mancetter-Hartshill kilns, near Coventry
MOAB	Sandy orange mortaria probably originally white slipped	WIL WS OR OX	Wilderspool
MOWS	White-slipped mortaria	WIL WS	Wilderspool
MVER	White granular mortaria	VER WH	Verulamium region
OA	Orange range of oxidised wares		Local kilns on Cheshire Plain
OAA	Fine orange oxidised wares		Local kilns on Cheshire Plain
OAB	Sandy orange wares	WIL OX	Wilderspool
OAC	Coarse oxidised ware		
SV	Severn Valley ware	SVW OX2	Severn Valley area
TN EGGS	Terra nigra eggshell ware		Possible import from NE France and/or Rhineland or local copy
Samian			

Table 10: Wares Present

The range of wares represented on the site fits into the pattern being established for the region by the quantification of recently excavated groups by researchers and adds detail to our understanding of the ceramic supply network in the North West.

Amphorae supply is dominated by the Dressel 20 oil amphorae and the presence of Gallic wine amphorae were established in smaller quantities. To these may be added a small number of Verulamium amphorae, possible also containing wine, and a number of unsourced large flagons which are similar in vessel form to wine amphora from north Gaul.

The mortaria assemblage included late first-early second century vessels from Verulamium (St Albans). Other sources include Wilderspool, Wroxeter, Mancetter-Hartshill and unknown producers on the Cheshire Plain. Three stamped mortaria were noted.

The quantity of fine wares apart from samian, such as colour coated and fine table wares, was low although white and white-slipped wares, mostly flagons, were common. In contrast to the King St site most of the roughcast beakers were probably imports from the Argonne with rather less of the locally produced ones from Wilderspool. This may reflect a difference in site chronology. A small number of mica-dusted wares were identified, probably from Holt or perhaps Manchester and a group of thin-black walled sherds of imported Terra Nigra eggshell ware were present.

The white and white-slipped wares included vessels from the Verulamium region, probably Mancetter-Hartshill, Holt, Wilderspool and probably Manchester. Detailed study of the white-slipped fabrics may distinguish the products of different kilns.

The grey and oxidised wares are typical of the Cheshire Plain and most of the late first-early second century material is likely to come from the Middlewich kiln. Some types were particularly well matched at Northwich though this may be due to contact between potters or similar backgrounds rather than exchange of pots. Other vessels could be attributed on the grounds of fabric and form as probable products of the Wilderspool kilns. In addition to the local pottery, small amounts of Severn Valley type sherds were present. A good proportion of the Antonine groups comprised BB1 jars, bowls, dishes and mugs from Dorset (10.25%) with rather small amounts in the early Hadrianic groups.

Uncommon traded wares included a Malvernian jar, a BB2 jar of the late second-third century, shell-tempered and coarse gritted wares from Northamptonshire, late South Midlands shelly wares, probably from Bedfordshire, small amounts of Nene Valley colour-coated ware and late pink grogged ware (Tomber and Dore 1997 PNK GT). All these fabrics, except the BB2 ware, were found in small quantities on the King St site (Leary forthcoming) and represent small scale trade, gift exchange or personnel movement. A small amount of Derbyshire ware was present in the form of bodysherds. This is unusual in the north west although has been found at Nantwich and Melandra but not at Manchester or Chester. The ware has been identified by other workers at Middlewich (Strickland 2001, 37).

Forms

The grey ware medium-necked jars were predominantly neckless, everted-rim jars typical of the Flavian-Trajanic period with a ratio of around 4:1 to the necked, everted-rim jars more common in the Flavian period. This is the reverse of the situation found on the King St site where the necked jars were more common and the samian ware suggested a Trajanic decline in occupation. Eight rusticated jars were present. Only grey ware two rebated-rim jars were identified. A number of the early globular jar/beaker with ring and dot decoration were identified as well as jar with combed wavy line decoration in the style of the South Wales grey ware vessels (Webster 1973 , fig. 108 no. 13.2 dated late first to early second century).. The grey ware bowls and dishes included a number of carinated bowls similar to one made at Wilderspool (Hartley and Webster 1973 no. 52), three reeded-rim bowls and a variant with a flat rim, carinated bowls with upright upper walls and everted rims, a

Dr37 copy very similar to one found previously on King St and to a type made at Northwich (Jones 1972 fig. 11 no. 16) and flanged, hemi-spherical bowls. Other types made in grey ware included lids, narrow-necked jars and flasks and ring-necked flagons probably made at the Middlewich kiln. Most of these types were common in the late first to early second century and there were very few grey ware types of later type. A narrow-necked jar in a coarser grey ware with everted rim and a zone of vertical groove decoration would fit a date in the late second century or later and a bodysherd with acute lattice burnish may be copying the BB1 jars. A small number of grey ware plain-rim dishes copy the BB1 vessels.

Fine oxidised wares were used to make similar neckless, everted-rim jars of late first- early second century type, a cup copying samian form 27, roughcast ware beakers, bead and flange, hemi-spherical bowls, lids and narrow-necked, everted-rim jars. The sandier oxidised wares were used to produce narrow- and wide-mouthed jars copying the Severn Valley ware range. These were made at Wilderspool and possibly other centres on the Cheshire Plains and seem to increase in popularity from the mid/late-second century onwards.

A group of Severn Valley ware narrow- and wide-mouthed jars were identified in forms dated to the second to third centuries and an example of Webster type F (1977). These are markedly finer in texture than the locally made copies and included the charcoal tempered Severn Valley ware identified by Evans *et al* 2000. The narrow-necked jars included one with a zone of oblique burnished lines. These date from the mid/late second century.

One very unusual vessel from trench 12 feature 1281 in a sandy oxidised ware was of unknown origin. This was straight-sided with a flat rim and very large diameter. In fabric it compared well with Wilderspool products but in form it looked more like a pancheon. Roman parallels for the form could not be found. Another unusual form came from trench 9 feature 908. This was in grey ware and comprised a sherd from a long, narrow necked vessel (140mm diam) with plain rim and bulbous body and rather thick walls. This seemed a particularly crudely made vessel and may represent deterioration in potting skills.

The BB1 jar types comprised necked jars of Hadrianic-early Antonine type with fairly upright necks and at least six with burnished wavy lines on the neck, a feature which declined after the mid-second century. Three BB1 everted-rim jars of a type more common in the second half of the second century were identified. Two BB1 jar of third century date with obtuse lattice burnish was present and five jar with splayed everted rim dating to the third century. Several rather globular BB1 jars with bead or short everted rims were present, typical of the Hadrianic-Antonine period, and a small handled jar was identified, a type previously found in a possible Roman grave at Kinderton (Strickland 2001 fig. 48). The BB1 bowls and dishes comprised flat-rim types with acute lattice decoration, seven plain rim dishes including one with the later style of intersecting arcaded burnishing, one grooved flat rim bowl of the late second – third century and one bead and flange bowl of the mid third-fourth centuries. The evidence of the BB1 types point overwhelmingly to occupation in the Hadrianic to early Antonine period with a decline in the second half of the second century and very little activity in the third and fourth centuries.

The beakers included rough cast beakers in CC, GR and OA fabrics, an indented MG beaker, fine OA and GR ring-and-dot beakers and a TN EGGS carinated beaker.

The flagons comprised ring-necked flagons and a plain necked flagon with everted rim, all in white-slipped ware, and a large, rebated rim flagon or amphora in white wares copying the Gallic amphora forms but British made. One of the ring-necked flagons had a distorted mouth suggesting the possibility of local manufacture.

Fragments of 10 lids, two in BB1, five in grey ware, one in FLB and two sandy oxidised examples were found. One FLB tazze was found in context 419, trench 4. This had clear sign of sooting inside.

Two sherds bore unusual post-firing graffiti. Both were oxidised bodysherds and one bore a Y-shaped design with distinct circular terminals and the other had a crudely executed lattice pattern incised inside the body. One large SV sherd from a narrow necked jar seemed to have some kind of large perforation on the shoulder. Around 20 sherds were burnt or scorched and two had burnt matter adhering to them.

Just over 310 sherds of samian were examined and these included three stamped sherds, two with rivet holes, both still containing lead remains, a sherd made into a small counter and a basal sherd with the base chipped away to within the circumference of the footring.

Chronology

The types of fabrics and forms identified in the assemblage date from the Flavian period to the late third to fourth century. The quantity of neckless, everted-rim jars and everted-rim jars with rebated necks suggests activity in the later Flavian-Trajanic period. The imported TN beakers sherds and the ring-and-dot beakers would suggest some earlier Flavian elements to the group. The analysis of the samian ware provides a more sensitive tool refining the dating.

Types such as the mica-dusted ware, the Verulamium region white ware mortaria and flagons/amphorae, the neckless, everted-rim jar, the flat and reeded-rim bowls and some of the amphora rim forms suggests Trajanic or Trajanic to Hadrianic activity. The majority BB1 forms are of Hadrianic-early Antonine type with little which must date after the mid-second century. A small number of BB1 jars indicated a date in the second half of the second century and the late BB1 jars with obtuse lattice defined by a shoulder groove date from AD240 or after. The grooved flat-rim BB1 bowl/dish may also be of late second or 3rd century date and the bead and flange bowl dates from the mid third century or later. Only two Nene valley colour coated ware sherds were present. One came from a beaker with barbotine dots of mid/late second-third century date and the other from a castor box lid with rather curved profile suggesting a date in the third century at least.

Trench	Context	Approx sherd no	Date range	TS sherd count
1	101	2	Med/Post Med	
1	102	44	M-L3, M3-M4	8
1	103	11	Had-Ant+	1
1	104	15	Ant	
1	108	5	E-M3rd	1
1	116	1	?L1-E2	
1	117	3	?L1-E2	2
1	119	3	RB	
1	119	1	L1-E2?	
1	122	1	L1-E2	
1	122	12	M-L 2	
1	125	1	Had-Ant	
1	126	14	E2?	1
1	144	1	Samian only	1
1	155	1	RB	
1	157	2	RB	
1	164	4	L1-E2	
1	166	2	2 prob Had-Ant	
1	166	1	01-Mar	
1	181	1	L1-M2 prob Had-e Ant	
1	183	2	Samian only	2

Trench	Context	Approx sherd no	Date range	TS sherd count
1	185	1	Samian only	1
1	192	1	RB	
1	198	3	120+	
2	208	29	240+. BB1 jar, grey ware lid and BB1 flat-rim bowl/dish	
4	402	35	Had	1
4	402	51	Mod, Med+ L2 Ant, Had	5
4	402	55	Had	2
4	402	38	Post Med	4
4	404	8	E2?	1
4	406	24	?L3-4	1
4	406	1	L1-E2	
4	407	5	L1-E2+	1
4	407	31	120+ prob Had	1
4	409	26	Had	
4	410	17	L1	1
4	411	18	L1-E2	1 scrap
4	412	56	Traj?	3
4	416	50	L2 or ?3	3
4	416	3	L1-E2	
4	417	5	L1-E2	
4	419	71	E2	12
4	tpit 3	14	L1-E2?	
4	tpit4	3	L1-E2?	1
5	501	17	Med + RB	
8	802	17	Post-Med+RB	1
8	805	9	M2+ prob L2+	1
9	905	46	E-M2	8
9	906	36	Med +L1-E2, E-M2	2
9	907	15	E-M2	2
9	908	54	E-M2	4
9	911	10	L1-E2	1
9	912	16	L1-E2	3
12	1202	24	Post Med + m2	1
12	1203	14	E 2	1
12	1204	142	Med + 2nd, ? some 3rd	14
12	1205	7	L1	
12	1206	94	Ant	10
12	1206	26	Had-Ant + L3- 4th	3
12	1206	91	L1+Ant + L3-4th	8
12	1208	9	120+	
12	1210	143	Ant+ 200-250 + 3-4, 4th?	15
12	1210	(?incl in above?)	Had-E Ant could be Had	2
12	1212	131	Med Ant+ 3rd	7
12	1213	84	L1-E2, Had-Ant +Med? (possibly Derbyshire ware)	11
12	1213	26	Med + 2nd prob L2 and L1-E2	6

Trench	Context	Approx sherd no	Date range	TS sherd count
12	1214	4	Med	1
12	1215	12	pos L1-E2	1
12	1216	200	L1-E2. Ant, 3-4 + Post Med	13
12	1216	36	E-M2, E3,	4
12	1216	47	l1-2, Ant, l3-4, Med	3
12	1217	10	L2-L3	
12	1217	48	Med+2nd	3
12	1217	232	E-M2	20
12	1217	228	E-M 2, pos some L2 ?Med	16
12	1217	41	E-M2 pos +L2-3	1
12	1217	52	L1-E2	5
12	1218	96	2, 3 + Med	6
12	1219	30	L1-E2 + Had-Ant~+ 3rd mortarium	2
12	1220	29	L1-E2	2
12	1220	60	Mostly L1-E2 + late shelly ware jar, L3-4	7
12	1222	46	129+ E-M2	4
12	1223	13	M-L2+	
12	1223	11	Had-E Ant prob Had	
12	1223	70	Had-E Ant prob E Ant	10
12	1223	88	Had-e Ant prob e Ant	2
12	1223	94	Had-e Ant with Dr 38 of 150+ so must be deposited in 2/2 2nd	3
12	1228	14	L1-E2	
12	1229	1	2/2 2	1
12	1231	22	2/2 2, Ant	5
12	1231	42	Had-e Ant	4
12	1237	68	Prob E2, pos Traj	5
12	1242	34	M2, pos M-L2 with L1-E2 material	7
12	1244	33	Had-e Ant	1
12	1245	7	Had-E Ant	2
12	1246	30	E-M2 with L1-E2 material, may be Had	1
12	1255	16	120+, prob Had	2
12	1263	4	L1+	
12	1266	6	Had-e Ant	1
12	1267	21	?Had-Ant	5
12	1271	28	L1-E2 +Post Med	4
12	1278	5	L1	1
12	1281	16	Had-Ant prob Had-e Ant	2
12	1281	46	e Ant	5
12	1282	24	e Ant	6
12	1284	11	L1-E2	3
12	1286	22	Had-e Ant	
12	1288	19	L1-E2	2
12	1289	30	120+, prob Had	3
12	1290	6	L1-E2	

Table 11 Middlewich Community Dig spot dates. (e=early, M=mid, L=late, Med=mediaeval, Post Med = post-Mediaeval, Mod = modern, RB=undiagnostic Romano-British sherds, Flav= Flavian, Traj=Trajanic, Had=Hadrianic, Ant= Antonine)

Function and site status

The quantities of samian tableware and amphorae indicate a site supplied at levels comparable to military and military associated sites but detailed assessment is not possible without full quantification of forms and fabrics.

STATEMENT OF POTENTIAL

The pottery

Fabric analysis

Although the pottery has been grouped into broad ware groups, it will be important to analyse the fabrics in detail and distinguish pottery from local kilns such as Wilderspool (Hartley and Webster 1973, Hartley 1981 and 1997), Walton-le-Dale (unpublished report by J. Evans), Holt (Grimes 1930, Greene 1977), Northwich (Hanson 1972) and Manchester (unpublished Severn St kiln). The mortaria stamps and aspects of the fabrics should be identified with the help of the leading specialist, Kay Hartley, and uncertain amphorae identifications should be referred to specialist Dr David Williams. Such fabric studies will clarify the trading links maintained by the inhabitants of Roman Middlewich and add to our understanding of ceramic supply and exchange in the North West as well as the supply of commodities such as wine, fish sauce and olive oil to the site.

Specialist analysis

It is recommended that Dr David Williams and Kay Hartley are employed as consultants in the study of the mortaria and amphorae. Both are leading experts and willing to be consulted regarding the stamps and any fabric queries. Name stamps on the rim not only tell us the suppliers but also give significantly more precise dating evidence than unstamped ceramics so are important for the chronology of the site. The samian should be studied by a samian specialist.

The site

Site chronology

Further study of the pottery with detailed identification of the fabrics and forms will refine the dating of the features on the site. In particular, the combination of this further work with detailed analyses of the stratigraphic relationships of the features is likely to improve the dating of the individual components of the site. A combination of the dating evidence from the coarse wares and samian with this detailed stratigraphic analysis will permit more detailed phasing.

Spatial analysis

A study of the distribution of the pottery types may disclose patterns within the site. This should be carried out as part of the post-excavation study and should be combined with a study of the distribution of other finds, including the samian and also items such as the glass vessels, bone pins, counters in other materials etc. This may well reveal areas of specialised activity within the trenches, domestic or industrial areas as well as clarifying the sequence of activities carried out in different zones of the site.

Nature of occupation and aspects of trade and exchange

Initial work on the assemblage suggests that it has military characteristics. Detailed comparison with other sites in the region will elucidate this aspect of the site and add significantly to our understanding of a group of “proto-military” sites in the region which may have served as military depots rather than

forts, in the case of Middlewich ensuring a regular salt supply to the Roman army. Quantified study of these ceramic assemblages is adding significantly to our understanding of them revealing characteristics such as high levels of samian supply, particularly decorated samian, and a high tableware component, even for military sites. Nationally agreed research frameworks (Willis 1997) for Roman pottery have identified the North West as a region where the quantification of assemblages is a priority. Other priorities identified include the need to clarify ceramic supply to the army during Flavian-Trajanic period through the study of suitably dated groups, the study of larger groups from the military sites which tended to be kept clean, the study of supply mechanism operating in the region, and differences in supply to different types of sites. All these areas of research can be addressed to some degree at Middlewich. The detailed cataloguing of the fabrics and forms will study the nature of the Flavian-Trajanic wares and types. The analyses of the larger groups from the pits, ditches and accumulation layers provide significant groups. The traded material already identified from the site has already added to the evidence from Middlewich King St for movement of small numbers of jars from Northamptonshire and Derbyshire and has also provided further evidence for a low incidence of wine amphorae along King St compared with Chester or the Welsh sites (Evans 2002).

Regional or greater significance to pottery studies

The assemblage is significant on a regional level in terms of:

- the potential data relating to trade and exchange patterns
- ceramic supply in the Flavian-Trajanic period and the products of the Middlewich kiln
- The character of the site as a specialist “proto-military” establishment similar to Walton-le-Dale and Wilderspool but producing salt.
- The character of the third –fourth century activity

At a national level, this group of proto-military sites have great significance in terms of the nature of military quarter mastering of the north and it is essential to characterise them both structurally and artefactually.

The pottery from this region has international links with the Roman province of Raetia and Upper Germany and this has been demonstrated ceramically in the form of red slipped/painted finewares and mortaria (Hartley 1981 and 1997). Raetian mortaria re present at Middlewich and study of the forms and fabrics may reveal other links with Raetia.

STORAGE AND CURATION

The pottery is predominantly stable

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R.S. Leary, Dec 2005

APPENDIX B
Animal Bone Summary

Tr	Ctxt	No.	Colour Var.	Butchery Marks	Notes
1	102	10	-	-	Cattle- some burnt, teeth fragments (v. poor cond.)
1	103	22	Y	-	Cattle tooth frags, u/i bone, v. poor cond.
1	108	5	-	-	u/i tooth frags
1	112	5	-	-	Sheep/goat pelvis frags. V. poor cond.
1	116	1	-	-	u/i. v. poor condition
1	119	10	-	-	3 sheep/goat horn frags, rest u/i.
1	122	1	-	-	Sheep/goat distal phalanx, fair condition
1	126	4	-	-	1 sheep/goat vertebrae, knuckle, 2 u/i frags
1	153	4	-	-	4 tooth frags- pig?
1	156	1	-	-	1 tooth frag- pig
1	183	30	-	Knife	Sheep/goat leg bones- v. poor condition
4	402	57	Y	Knife	Sheep/goat jaw, tooth; chicken rib, dog tooth? Burning.
4	403	16	Slight	-	Cattle phalanx, sheep/goat frags
4	404	4	Y	-	3 u/i, 2 burnt, pig tooth?
4	406	15	Y	Knife	Sheep/goat leg and phalanx, Cattle, Chicken. Some burnt
4	407	8	Y	-	Cattle, sheep/goat. 3 burnt, non-burnt in v. poor cond
4	409	12	Y	-	Cattle, sheep/goat. Some burnt
4	410	8	-	-	Sheep/goat leg bones. V poor condition
4	411	7	Y	-	Sheep/goat, 1 burnt. Poor condition
4	416	27	Y	-	Cattle, pig teeth, burnt sheep/goat
4	418	14	Y	-	Cattle, chicken, sheep/goat. Some burnt
4	419	21	Y	-	Cattle tooth, sheep goat leg bones. Some burnt
4	TP4	4	-	-	u/i, very poor condition
5	U/S	2	-	-	Chicken, burnt
6	U/S	1	-	-	Sheep/goat frag
9	U/S	2	-	Knife	Sheep/goat scapula
9	905	15	Y	-	Sheep/goat u/i and teeth, some burning
9	906	5	Y	-	Sheep/goat u/i. Poss. dog gnawing.
9	907	11	Y	-	Cattle, sheep/goat. V poor condition
9	908	71	Y	Knife	Sheep/goat leg bones (fair condition), pig teeth, chicken, horn? Some burning
9	911	23	Y	Knife	Sheep/goat, pig teeth (v poor cond) some burning
9	912	14	-	Knife	Cattle and pig teeth, sheep/goat leg, fair condition
12	U/S	27	Y	-	Cattle, sheep/goat.
12	1204	33	Y	-	Sheep/goat bones, teeth, phalanx. Some burning
12	1206	5	Y	-	Sheep/goat? Some burning
12	1208	1	-	-	u/i burnt bone
12	1210	36	Y	-	Pig and sheep/goat teeth, u/i/ bone. Poor condition
12	1216	111	-	Chopped/ sawn	Cattle leg, pig teeth, sheep/goat bone and teeth, antler, poss dog gnawing. Some burning
12	1217	31	Y	-	Pig, sheep/goat, cattle teeth. u/i bones (v poor cond)
12	1218	18	-	Chopped	Cattle leg, pig jaw, sheep/goat leg and caudal vertebrae (chopped)
12	1219	3	-	-	Sheep/goat rib
12	1220	9	-	-	Sheep/goat bones/teeth
12	1222	19	Y	-	Sheep/goat leg (burnt) and skull frags
12	1223	124	Y	Knife	Sheep/goat leg, cattle leg, jaw and teeth, pig teeth, horse teeth, dog jaw, dog gnawing, some burning. Fair condition

12	1228	12	-	-	Sheep/goat. Poor condition
12	1229	3	Y	-	Blackened chicken bones
12	1231	12	Y	-	Sheep/goat leg and teeth. Some burning
12	1232	17	Y	-	Pig teeth, Sheep/goat leg
12	1240	1	-	-	Sheep/goat
12	1242	10	Y	-	Sheep/goat leg and jaw. Some burning
12	1244	2	-	-	u/i burnt bone
12	1246	2	Y	-	Pig tooth, u/i burnt bone
12	1255	5	Y	Sawn	Burnt chicken, u/i sheep/goat
12	1271	9	Y	-	Sheep/goat rib, teeth
12	1278	1	-	-	Cattle tooth
12	1281	4	Y	-	u/i burnt bone, v poor condition sheep/goat?
12	1282	2	Y	Chopped	Sheep/goat and u/i burnt bone
12	1286	9	-	-	Sheep/goat leg
12	1288	10	Y	-	Pig teeth and bones, v. poor condition
12	1289	13	Y	-	Sheep/goat, some burnt, very poor condition.
TOTALS		959	34	12	28 burnt, 3 dog gnawing

Table 12: Summary of Hand-Collected Animal Bone

APPENDIX C
Ironwork Summary

Tr	Ctxt	Nails	Other	Notes
1	U/S	1	-	Broken
1	102	6	-	Heavily corroded, accreted
1	103	5	-	“
1	108	11	-	“
1	119	-	2	Unidentified
1	126	2	2	2 unidentified objects
1	153	4	2	2 unidentified objects
4	U/S	9	1	Tapered, flat-sectioned stake, small hole at wide end.
4	402	6	1	1 unidentified object
4	403	3	-	-
4	406	2	1	1 unidentified object
4	407	2	-	-
4	409	5	1	1 nail deliberately bent, poss. knife handle
4	410	-	1	Unidentified object
4	416	1	-	-
4	418	1	-	Heavy corrosion
4	TP2	-	1	Unidentified object
4	TP3	2	-	-
5	U/S	1	-	-
8	U/S	2	-	-
9	U/S	1	4	3 unidentified objects, 1 door fitting
9	905	9	-	1 nail deliberately bent
9	906	1	3	1 rivet, iron bar
9	907	6	1	1 unidentified object
9	908	2	3	2 unidentified objects, 1 penannular brooch
10	U/S	-	3	2 bolts, 1 unidentified object
12	U/S	15	11	1 bent nail, 1 non-finger ring, 4 unidentified iron plates, poss. key
12	1202	12	-	-
12	1204	26	6	2 deliberately bent nails, 6 unidentified objects
12	1206	26	13	13 unidentifiable objects
12	1208	1	-	-
12	1210	28	-	3 deliberately bent nails
12	1212	18	1	1 deliberately bent nail, 1 unidentified object
12	1215	1	1	1 unidentified object
12	1216	42	3	4 bent nails, hinge/latch?
12	1217	144	32	10 bent nails, 8 nails 110mm long, 2 possible knife handles, jews harp, rivet head, 4 pieces of sheet iron, 2 moulded strips with looped ends (hinges?), 20 unidentified objects
12	1218	14	-	2 bent nails
12	1219	12	-	
12	1222	17	11	11 unidentified objects. All heavily corroded
12	1223	29	1	5 deliberately bent nails, 1 iron ring (non-finger)
12	1227	13	-	1 bent nail
12	1231	49	9	2 bent nails, 7 unidentified objects, 2 iron strips
12	1232	16	1	2 bent nails, 1 poss. nail
12	1237	4	-	1 deliberately bent nail
12	1240	2	-	Square-section nails
12	1242	1	-	-
12	1244	8	1	2 fused nails, 1 deliberately bent, 1 unidentified iron plate
12	1245	1	-	-
12	1258	-	3	3 unidentified objects
12	1266	1	-	-

12	1267	2	-	1broken nail
12	1271	2	-	Heavily corroded
12	1281	10	-	2 bent nails, 2 very good condition
12	1282	8	-	-
12	1284	2	-	1 bent, 1 fused cluster
12	1288	3	-	1 deliberately bent
12	1289	1	-	-
TOTALS		590	119	(84 unidentified objects)

Table 13: Summary of Ironwork