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Smaws Quarry
Tadcaster
Proposed Quarry Extension
Archaeological Evaluation

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MAP Archaeological Consultancy Ltd.

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Smaws Quarry - Tadcaster
North Yorkshire
Proposed Quarry Extension
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Smaws Quarry - Tadcaster
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Introduction

The Redland Aggregates site of Smaws Quarry is situated approximately 2km from the town of Tadcaster within the parish of Tadcaster West (SE 4625 4300 : Fig. 1).

The working quarry site stands to the east of the C road known as Rudgate, and to the north is the A659 Ilkley to Tadcaster Road, and is one of a number of quarries, most of which are now disused, which form a fairly high concentration to the west and south-west of Tadcaster.

This report considers within the Desktop Study an area of land to the east of the present quarry of approximately 36 ha. (Fig. 2), which would, subject to planning approval form the extension to the existing quarry and also areas used for access and soil storage. The proposed extension area is currently farmed by Mr Robinson and is composed of three large fields (Figs. 3 and 4). The northern area (Field A) would form the extraction unit with Areas B and C used for secondary facilities.

The geology of the site (Fig. 5) shows that the proposed development land unit is on soils of the shallow brown earths of the Aberford Association overlying the upper Magnesian Limestone of the Permian Age (Mackney et al 1983).

This report details the archaeological evaluation of the proposed extension area to date and includes the Desktop Study and the results of Intensive Fieldwalking within Area A.

The project was totally funded by Redland Aggregates. The Desktop Study and Fieldwalking were undertaken by MAP Archaeological Consultancy Ltd. The Geophysical Survey of Area A was undertaken by Geophysical Surveys of Bradford and forms a separate report.

The Desktop Study

Introduction

The Desktop Study evaluates the known archaeological and historical nature of the land unit by describing and illustrating land use, previous archaeological information for the surrounding area, earthwork analysis, a walk over survey and short historical summaries of the town of Tadcaster, Smaws Hall, Smaws Quarry and the extension unit.

The evaluation survey was undertaken in August/September, when Area A had been recently harvested of winter wheat. Area B to the west had been recently harrowed and planted with rye grass and in the east (Field C) had been ploughed and drilled with turnips.

ENVIRONMENTAL SURVEY

Introduction

In order to place the extensive utilisation of the land from the Neolithic period through to modern times in its correct context, it is essential to consider the environmental history of the area. This section of the report considers the evidence from the earliest periods through to a consideration of the present flora at the site and in the immediate vicinity.

Environmental Background

At a number of times during the past two million years, arctic and alpine ice-caps have grown and swept over much of the Northern Hemisphere including most of the British Isles. Between the periods of glacial advance, fossil and sub fossil remains of plants and animals, particularly pollen, show that the climate ameliorated for long interglacial periods to conditions as good as, if not warmer than, those of today.

Pollen bearing peat deposits, thought to be contemporary with the Hoxnian interglacial (comparable to the Lower Palaeolithic), show a sequence of vegetation changes with birch and pine colonising the open tundras as the ice retreated. Mixed deciduous woodland followed with oak, elm, ash, alder, hazel and other trees of today's woodland. There was finally revertence to fir, pine and birch forest as the climate once more deteriorated with the re-advance of the ice sheets. In the middle of this woodland phase there is a fall in the tree pollen and an increase of grasses suggesting an opening up of the forest environment. It has even been suggested that this phase represents man's deliberate attempt at clearance through the use of fire to facilitate easier hunting conditions (Evans 1975). Even so, it is clear from the available archaeological evidence for this area of the country that the climate in the Hoxnian and Devensian periods was not suitable to sustain human life.

Deposits from the Late-glacial period (12,000 - 8,000 BC) show that trees did not immediately recolonise the land. Extensive erosion and solifluxion caused by proximity of the ice-cap resulted in the establishment of tundra species i.e. dwarf birch (Betula nana), arctic willow (Salix herbacea) and mountain avens (Dryas octapetala). Other species included thrift (Armeria maritima) and opportunist weeds i.e. knot grasses (Polygonaceae) and goosefoots (Chenopiaceae). These plants represent a plant succession on warmer and more fertile soils. Subsequent organic sediments contain birches (Betula pubescens and Betula pendula) and aspen (Populus tremula), all representing a move towards forest cover of the land. Archaeological remains of this period - the Palaeolithic - is totally absent from this area of Yorkshire.

Tree pollen preserved in peat deposits show an increase throughout the Palaeolithic period. Climatic conditions appear to have facilitated the development of forest cover following a pattern broadly similar

to the development in previous interglacials (Godwin, 1975; Pennington, 1969). By 7500 BC pollen of pine (Pinus syvestris), hazel (Corylus avellana), oaks (Quercus spp.) and elms (Ulmus spp.) superseded that of birch as mixed deciduous woodland grew. Peat formed during this period is indicative of a warm and dry environment. The period from c. 8000 BC to the coming of Rome in 43 AD sees the establishment of Prehistoric occupation and the gradual exploitation of the landscape.

The Mesolithic period (8000 - 3500 BC) saw man occupying the coastal fringes or river valleys in the autumn and winter and moving to higher ground during the more favourable summer months. These people were hunter-gathers and operated from small camps which are difficult to locate in the archaeological record due to their transitory nature; the only tangible signs of such sites are collections of food debris or collections of fine flint tools known as microliths.

During the Neolithic period (3500 - 2000 BC) the climate appears to have been more continental than today. The pollen counts indicate a fall in elm pollen. The cooler winters and warmer summers are unlikely to have caused this fall. However, it is now suggested that an outbreak of a disease similar if not akin to Dutch Elm Disease may have been responsible (Green, 1981). Detailed pollen analysis of these horizons also reveals the advent of weeds such as ribwort plantain (Plantago lanceolata) and nettle (Urtica dioica), agents of human settlement, suggesting that prehistoric man was beginning to have an effect on the environment. Subsequent forest clearance is apparent in the pollen record; tree pollen is replaced by grass and cereal pollen; pollen of weeds and the presence of charcoal all point to clearance techniques. This is further confirmed by the appearance in the pollen spectrum of bracken (Pteridium aquilinum) and birches suggesting the use of the slash and burn technique of shifting agriculture. The policy of forest clearance eventually leads to greatly increased runoff, erosion and losses of nutrients from the ecosystems (Borman et al, 1968). The presence of high nutrient levels and mineral particles in peat formed at this time also suggests that forest clearance and nutrient runoff into drainage basins was taking place (Green Pearson 1977).

During the Bronze Age (2000 - 750 BC) the archaeological record shows how settlements and farmsteads were concentrated on the better well-drained soils of the morainic deposits. Once areas were cleared, continuous burning or grazing was needed to preserve the status quo. The quality of the land and soils is central in this period. The work involved in raising burial mounds, clearing and cultivating the land suggests that there was a social and political structure to society in this period.

Clearance, pastoral husbandry and conversion to arable land continued throughout the Bronze and Iron Ages, although climatic deterioration from about 1000 BC did lead to large areas of previously cleared farm land being abandoned. The development of society in the Iron Age (700 BC - AD 43) had reached a point whereby the need had arisen to protect the land to sustain the growing population and as a result a warrior society known as the Brigantes evolved.

The increased scale of Romano-British agriculture and the expansion of settlement and industry continued man's impact on the environment, attested by archaeological evidence. Aerial photography has produced evidence for crop mark sites which represent farmsteads and associated rectilinear

enclosures and trackways. Many of these sites are dated to the Iron Age/Romano-British periods, although recent work has shown that this interpretation is not necessarily correct (Finney 1989). Rectilinear enclosures associated with trackways can also be assigned to the Bronze Age period.

The Anglo-Saxon period of history (450 - 1066) witnessed a sharp increase in the clearance of woodland, but it is only in the medieval period (1066 - 1540) that further mass clearance was instigated through the process of assarting.

The woodland clearance of the dark ages did much to mould the present face of the British countryside. Clearance radiated out from the villages and other settlements so that in many areas the original forests were cleared until only isolated woods and copses remained along the parish boundaries where clearance from adjoining villages met. Some of the woods and parish hedges still survive and represent relicts of primeval forest cover, rich in species. Enclosures and clearance continued throughout the medieval period. Even so, there was widespread use of woodland as game reserves and as sources of timber for building. Woodlands became managed as coppice or pollard to supply small timber on a regular basis. However, the depredations caused by the iron industry, and especially the charcoal burners, resulted in edicts during the Elizabethan period restricting felling.

The enclosure acts of the late 19th and early 20th century resulted in the chequered pattern of hedged fields which are so common in the British countryside today. The hedges were used as dividers, being cheaper than constructing walls and more popular because they were self-renewing. Where cattle or sheep were to be enclosed hawthorn was most widely planted, because of its dense growth. Whatever species are planted in time the hedge becomes of mixed species due to bird-carried seeds.

Hedge survey

It was said that the study of field boundaries has tempted few intellectual appetites, but Hoopers hypothesis seems to have initiated considerable interest in the subject, with its apparent promise for the easy dating of field boundaries where documentary evidence is lacking. The idea has been readily accepted by landscape historians, but has evoked much scepticism from botanists (probably due as much to the fact that it is almost too simple as to the inaccuracies of the theory).

As the dating of a hedgerow is at best only an estimate to within 25 years, one can only consider the hedgerows in conjunction with other documentary evidence for the specified area.

A total of 11 hedgerows were surveyed (Fig. 6). Table 1 in Appendix 1 shows the number of different species per hedgerow, the length of hedge and the approximate age of the hedge as deduced from the number of species. Table 2 shows the number and type of each species in each hedge.

Table 1 clearly indicates that the most common species to be found in the hedgerows of the survey area was hawthorn present ~~hedges~~ in 9 hedges (1-3, 5-6, 8-11). The second most popular species was elder. Elder is a plant that colonises and is successful in recently disturbed ground and thus finds fresh planted hedgerows an ideal habitat; it is also very resistant to rabbits. Rabbits were seen during the survey and

burrows were located ~~in~~ within White Quarry and along hedge bank 8.

Hazel then sycamore were also common species.

The occurrence of ash, and to a greater extent sycamore show evidence of more recent replanting of the hedgerow and the copse (4) and the hedgerow to the south of White Quarry. The ash is a native of Britain and in Northern England is the main hedgerow tree. The sycamore is not native, but is a very successful invader of waste ground and has become an essential part of the British scene. Ecologically it somewhat resembles the ash.

These species would be found in hedgerows of all dates and therefore give no real clue to the age of a hedge due to their presence alone. Hawthorn was planted as it provided a practical barrier against straying stock and hazel could be harvested. Holly was also another favourite hedge planting as it, like hawthorn, was effective against livestock and could also be used as fodder.

Hedge 2 was of particular interest not only for its high species count, but also due to the presence of Bird Cherry. This species is more common in upland Northern Britain and Scotland, but it does grow in limestone areas, and this would tend to explain its presence in this hedge when one considers the local subsoil. Equally the presence of whitebeam in Hedge 11 also reflects local conditions as this species also favours limestone and chalk environments.

The presence of Field Maple in Hedges 1 and 2 is also an indication of an old hedge. This is reflected by the species count and the cartographic evidence (see below).

The presence of bramble within the hedges can generally be explained by seeds being carried and discarded by wild birds.

To make it possible to understand the significance of the age of the hedgerows it is necessary to take into account the observations of the earthworks (p. 10) and the documentary evidence of historical field boundaries that are recorded in earlier surveys.

The earliest known surviving map for this area is the 1844 Tithe Map (Fig. 7) and the subsequent Ordnance Survey maps of 1856 (6") and 1891 (25") which all illustrate a very different set of field boundaries to those of present day. Field A of the survey area is subdivided into four individual plots and whereas Fields B and C are orientated north south, and the earlier maps show that these field were divided into three units. (Figs 7 and 8). By the 1930s the field pattern has changed in to the pattern which still exists today.

These changes in the land divisions saw only Hedges 1, 2, 6, 8, 9, 10 and 11 survive the remodelling. This longevity is not reflected in the species counts except for Hedges2 which did produce a very high species count and Hedges 9 and 11.

The outer boundaries for the proposed extension area, that is to say Hedges 1, 2, 6, 8, and 11, have remained constant from 1844 through to present day. The changes in the land divisions can be accounted for by the dramatic changes in agricultural machinery which began before the First World War and which gathered momentum after 1918. Larger open fields became the norm, sweeping away the smaller more ancient land units.

ARCHAEOLOGICAL BACKGROUND

Previous archaeological work

This section concentrates on the information derived from aerial photographic data, and spot finds from around the proposed extension area. A summary of the results to date on the excavations and watching brief at Smaws Quarry are also included.

Aerial Reconnaissance

Aerial photographs provide valuable information on the archaeological features which, due to agricultural destruction, are no longer visible above ground. The aerial photograph is capable under favourable light, i.e. low angled sunlight, to show up earthworks, and perhaps of more importance, features which now only exist as soil or cropmarks.

Aerial photographic evidence is displayed on Figure 11. Aerial photographs for this area of North Yorkshire is fairly good. The large tracts of arable land with the limestone geology provide favourable conditions for the use of this technique. The frontispiece to this report is produced with the kind permission of North Yorkshire County Council (who hold the copyright) and not only provides a topographic setting for Smaws Quarry and the extension area, but also provides information on crop and soil marks within the surrounding environs of the quarry site.

The evidence to date shows a varied picture which in the main is fragmentary, in that many of the features (Fig. 11) appear to stand in isolation. Although it is possible to follow some of the linears through to adjacent fields, where a subsequent piece of the feature appears.

The type of features evident from the aerial photographic data can be divided into a number of specific categories - linears, enclosures (or partial enclosures), and geological features.

Within Field A aerial reconnaissance suggests the presence of a linear ditch and enclosures. In Area B there is a double ditched feature which may represent a trackway, and Area C would appear to accommodate a possible settlement site or field system (M. Pl. 2-3).

To the west of Robshaw Hole aerial photography records cropmarks relating to enclosures with an associated linear, and to the north of the present Smaws Quarry are further enclosures (Fig. 11).

Spot finds

Figure 12 displays the location of artefacts found within the vicinity of the proposed extension area and

also centres of archaeological and historical importance.

The prehistoric period is well represented. In c. 1886 during an extension to John Smiths Brewery a skeleton buried with a blue stone axe, chisel shaped stones and flint arrowheads was found (Speight 1902). In the area to the west of Tadcaster in 1953 a Bronze Age palstave (a bronze axe) was found at 17 Grange Road, Tadcaster (SE 4900 4359). In the 1920's a polished stone axe was found (Radley 1974), a flint blade has been found at Tadcaster High School (CBA 1976) and last century a socketed axe, jet bead and bronze ring were found.. Thurnam thought that the bead had been made of shale or glass (Speight 1904: Radley 1974).

The results of the excavations and watching brief at Smaws Quarry, to be discussed in more detail later, have also complemented this assemblage with finds of worked flint, prehistoric pottery, pot boilers and associated features.

The Roman period is well represented by the Roman settlement of Calcaria, in Tadcaster and by the Roman artefacts found to the south of the Quarry along Rudgate. In 1967 road works exposed 2 skeletons, quantities of 3rd-4th century pottery a bronze penannular brooch, and a bracelet. A subsequent trench exposed a compact clay horizon rich in bone, pottery sherds and building stone. It is thought that these finds represent part of the ribbon settlement/development along Rudgate, south of the Newton Kyme fort. In the same area in 1966 flints and Roman pottery were recovered (YAJ 1967 & 1968).

Rudgate appears to follow the line of a Roman road and the Tadcaster to Ilkley road to the south of the quarry also follows the course of a Roman road.

Previous evaluations

Smaws Quarry

From 1992 an annual programme of archaeological evaluation has been undertaken at Smaws Quarry. The initial phase of work consisted of a geophysical survey commissioned by Steetleys, who were then working the quarry. The results suggested linear features running across the site in a north-south alignment. A watching brief on the topsoil stripping showed that these features represented geological rather than archaeological anomalies. Despite the lack of features a good assemblage of prehistoric pottery and flint was recovered as well as Roman and medieval sherds of pottery. As the quarry face advanced further watching briefs have been undertaken by MAP Archaeological Consultancy Ltd. Each year further prehistoric flint including a good percentage of flint tools (scrapers and blades) has been recovered, although the quantity of prehistoric pottery has gradually decreased. This may be significant in regard to the location of activity centres. In addition there has remained a steady recovery of medieval and Roman pottery. All seasons of work have produced a high percentage of post medieval and modern pottery.

In 1994 the watching brief located an area immediately to the east of Rudgate which merited sample excavation. The excavations revealed the presence of 3 ditches which appeared to be boundary ditches

of some sort, the plan and shape was suggestive of field or land boundaries rather than ditches enclosing a settlement. However, a settlement of roughly contemporary date is in the near vicinity due to the large number of pot boiler fragments recovered from the ditches. These would appear to indicate a domestic rather than industrial origin.

Conclusions

The information to be derived from previous work in the area is fairly extensive. The distribution of locations where information has been forthcoming is widely spaced around the proposed extension site, but is also found in areas adjacent to the extension site and shown on aerial photographs to be present within the extension area.

The presence of prehistoric activity is illustrated by spot finds of artefacts covering both the Neolithic and the Bronze Age.. Roman material is to be expected considering the concentration of settlement over quite an extensive period at Tadcaster and from the fort at Newton Kyme and the associated ribbon settlement to the south of the fort which runs to the east of Rudgate.

Medieval presence is attested more by standing structures, earthworks and written records rather than individual artefacts and illustrates the complexity of activity in this area.

Earthwork Survey

The earthwork survey within this report is a brief summary of the type and quality of the earthworks to be found within the proposed quarry extension area. The types of earthworks noted from the field assessment consisted of the hedge banks, and White Quarry

Hedge banks

The hedgerow survey showed that the hedge boundaries of the proposed extension area possessed some banks (Fig. 13).

Hedge 2 possessed a slight bank measuring 1.5m at the base narrowing to 1m at the top and surviving to a height of 0.2m. Fragments of limestone were observed in the top of the bank, but it was felt that these represented field clearance as opposed to bank make up. This bank was associated with a very well maintained hedge (Pl. 1) and which also possessed the highest species count for all the hedges surveyed.

The copse (Fig. 10: 4 :Pl. 2) had a slight earthwork bank around the northern edge of the trees, it survived for no more than 0.25m and was not seen to totally encircle the wooded area. The survey also noted that the centre of the copse appeared to form a shallow depression.

Hedge 7 displayed a very low bank measuring approximately 0.5m at the base and of a similar width, which was accentuated by the fact that the hedge had been ripped out and replaced by a wooden pole and wire fence. The only surviving species of the hedgerow were 2 sycamores (Pl. 3).

Hedge 8 possessed a bank measuring approximately 2.5 m at the base narrowing to 0.6m at the top. It

stood to a height of between 0.5 and 0.6m and formed the southern boundary of the extension area and was situated immediately adjacent to the Ilkley to Tadcaster Road (Pl. 4).

During the course of the survey it was noted that although Hedges 1 and 3 did not possess banks as such, they had been deliberately planted to mark the natural break in slope. This was also true of hedge 9 (Pl. 5). Here the hedge marked a difference in land level of 1m.

At the corner of Hedges 9 and 10 a collection of limestones was recorded as a cairn (Pl. 6). Their deposition may have been deliberate to mark the corner of the field, especially as the hedges had been ripped out in this area or their presence may simply mark field clearance.

White Quarry

Situated along the southern boundary of Field C was a disused quarry known as White Quarry (Fig. 1 : Pls. 7 and 8).

The quarry measured 120m in length by 30m in width. The western half of the quarry is only 2-2.5m deep with sloping sides at approximately 45° which are rabbited and covered in grass and nettles. This area also displays linear earthworks running east to west which may represent dumping within the quarry or relate to the earlier working of the site. Presently these earthworks are covered in grass, nettles and brambles.

At a point approximately 20m into the interior of the quarry the land falls away dramatically to a sheer sided face which exposes the bedding plains of the limestone and which continues to a depth of in excess of 6m. The sides of the quarry to the north, south and east remain at about 45° and were rabbit burrowed. It is possible to scramble down into the base of the quarry if required.

The base of the quarry was covered in grass and nettles with a good cover of elder shrubs. Dumps of bottles were recorded, but there was no great degree of dumped modern rubbish which one would expect being so close to the main road.

The interior of the quarry is well covered by mature trees of ash, beech and sycamore with numerous elder bushes. This dense cover gives the impression that this feature is a plantation rather than a quarry.

There is no mention on the 1844 Tithe map for this feature, although it does appear on subsequent Ordnance Survey maps from 1856. Therefore it is difficult to determine the date when the quarry was in use. It is recorded as disused from 1930's onwards.

White and Smaws quarries are just two of the numerous limestone quarries recorded on the Ordnance survey maps of the area (Fig. 1).

WALKOVER RESULTS

A walkover of the extension was undertaken. As mentioned previously (p. 4) Field A had been recently

harvested and stubble covered this area. Field B had been harrowed and planted with rye grass and Field C had been ploughed and drilled with turnips.

The walkover of Field A produced a very interesting selection of material. Finds of brick and tile, slate, coal, cinder and slag were recovered. Pottery of medieval, post medieval and modern date was noted, but perhaps of more significance was the presence of 2 sherds of prehistoric pottery. These sherds were very similar in type to those recovered during the watching brief at Smaws Quarry to the west. In addition a piece of worked pale grey flint was also recorded. The flint was not associated with the pottery but the two prehistoric sherds were found within 10m of each other.

The walkover of Field B noted finds of brick and tile, modern pottery, cinder and slate. These pieces were easily recognised, but due to the disturbed nature of this field, i.e. the stubble had been roughly ploughed into the ploughsoil, it is unlikely that without intensive fieldwalking and very careful examination any earlier material could be recognised, until the surface vegetation has rotted down.

Field C had a more suitable surface for walking. Brick and tile were recorded along with slate fragments, coal , cinder and a horseshoe. Pottery was evenly scattered throughout the field and was predominantly of modern date with some medieval and post medieval. No sherds of prehistoric wares were noted, although light conditions had become bad by the time this field was walked over.

Immediately to the north of a strip of stubble which ran along the southern boundary of the field a high concentration of finds was noted. This assemblage consisted of clay pipes, medieval pottery, stonewares, glazed tile, modern pottery, animal bone, glass bottle fragments and slate fragments. This cluster of finds was approximately 10m in width and confined to the area immediately adjacent to White Quarry and extending eastwards. The distribution tended to have faded out at a point below the pylons.

This assemblage covered a good period of time and either represents the ploughing in of an old rubbish tip, or a deposit of soil which has been brought in to the field from another source.

The walkover produced some interesting results. It showed the range of material within these fields and indicated that Field A may contain prehistoric features. The aerial photographic evidence for this area does indicate the presence of features. Equally it is interesting that in the area where crops marks show to the east of White Quarry there is also a concentration of finds, although the date range does not appear to complement the aerial data.

Even so the walkover results indicate that fieldwalking has to be a method employed in any further evaluation of Fields A-C.

Survey also recorded the presence of a Turnpike marker to the east of White Quarry and within the hedge boundary 6. This marker notes the Tadcaster and Halton Dial Turnpike Road. Leeds is recorded as 13 miles to the west and Tadcaster 1 mile to the east. The marker measured 0.85m by 0.4m by 0.26m. There was no date on the marker.

HISTORICAL SUMMARY

Introduction

As outlined earlier this area to the west of Tadcaster appears to have been settled and managed for a considerable period of time. Within this section consideration is to be given to a brief history of Tadcaster, Smaws Hall which by association gives its name to the quarry and an analysis of the field names which made up Fields A-C as recorded on the Tithe map of 1844.

Tadcaster

The identification of Tadcaster as the Roman Calcaria is based on three factors

1. Its distance of 10 Roman miles from York in the direction of Manchester, agrees with the Antonine Itinerary distance of 9 miles.

2. The placename Tada (1066), and various forms of Tats -, Tata -. Tad -. castre or caster from 1086 onwards. The 1086 form is probably an abbreviation and the name is accepted as a CEASTER name with a DA personal prefix. The Roman Calcaria (used by Bede, c.730) means 'limestone' (Smith 1961). There were medieval quarries for stone at Tadcaster which was also a river port for transporting stone to York.

3. The archaeological evidence. As early as Camden (18th) there is reference to the uncovering of Roman coins within the town of Tadcaster (Camden & Gough 1789). The recovery of Roman material has continued and in recent years work by the West Yorkshire Archaeological Service has helped to produce a fuller picture of Roman Tadcaster.

The early history of Tadcaster shows that it was to a certain degree dependant on the limestone resources to the west of the town. If it was used in the medieval period in York, there is every possibility that the stone was also used in Roman York (Barley 1984). The complex network of roads to the west of Tadcaster may have been part of this transport system. Although excavation of one of these roads in Black Wood (Fig. 1) indicated that it was not of the type of construction which would have been suitable to the transportation of stone (Ramm 1970).

In the medieval period the town was once enclosed by a large ditch which to the north formed part of or preceded the later motte and bailey moated complex. A ditch assigned to the Civil war was visible in the vicinity of Tadcaster Bridge as late as the 1840's (Speight 1904: Bogg 1904). A battle between the Earl of Newcastle and Lord Fairfax was fought at Tadcaster Bridge in 1642 when the Royalists gained control of Tadcaster.

The town continued to flourish as a market centre through the 17-19th centuries. Present day Tadcaster is dominated by the brewing industry.

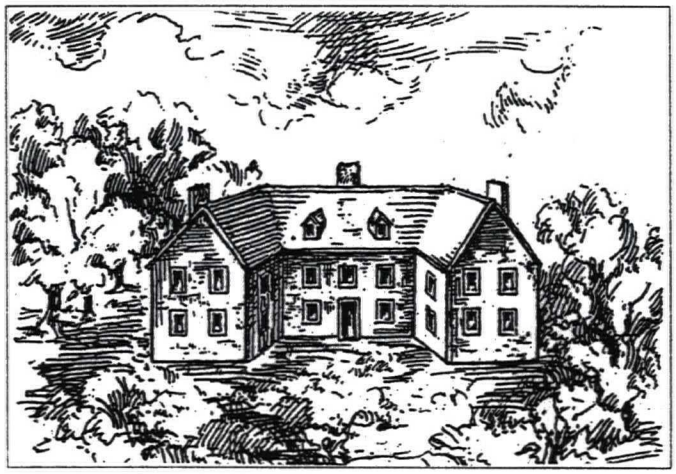
Smaws

Smaws Quarry is situated between a series of these Roman roads and therefore its exact association to

these lines of transport is of interest.

Smaws is an old Scandinavian word. In Icelandic its form is "smuga", 'a narrow opening', through which one can come forth; a hiding place or haunt, a nook, corner or by place. An alternative meaning is 'a narrow clef to creep through' and or 'a hole made by excavation'. If this final derivation is accepted the it implies that there were ?quarries already present in this area to the west of Tadcaster before the medieval period and which may date to the Roman period.

Smaws Hall stood to the north-east of the quarry site. Speight in 1904 recorded that " Smaws is a very old estate, and though long reduced to a farm house, it was in former times the seat of several noble families. Portions of the old Hall (pulled down c. 1875) are still standing at the back of the present dwelling. The inset shows what the building looked like in 1718. The view is taken from the original in the Lansdown Collection in the British Museum.



Smaws Hall. c. 1700

"The house stood on the crest of an eminence on the south side of the railway. Round about the scenery is very picturesque, due to the hilly and uneven surface of the denuded limestone as well as to a narrow defile extending some distance on the east side of the Smaws Hall. Near here the rock has been quarried at a very early period. The Smaws limestone is a very durable stone of fine grain and has long been used in the repair of York Minister. This celebrated quarry now belongs to Mr Samuel Smith. The depression named (the quarry to the south-east of Smaws Hall) is all grown up with trees and a thick vegetable undergrowth, and there is no doubt that to the peculiar configuration of the ground here, Smaws owes its name" (Speight 1904).

During the medieval period Smaws was the seat of two important local familles, the Normanvilles and Calls.William Call is mentioned in the Tadcaster Lay Subsidies of the time of Edward II and Alan Calle, of Smaws, was one of the jurors at an enquiry held in York, concerning a rent due to the Prioress and Nuns of Appleton from the mill at Newton Kyme in 1268-9. In 1260 Ralph de Normanville held of the said William 3.5 carucates of land in Smaws and in Cold Coniston.

As mentioned above the Hall was pulled down and replaced by Smaws Farm (Fig. 1).

The quarry which is known as Smaws Quarry is recorded on the 1844 Tithe map for Tadcaster West. The quarry (1844:71) is recorded as worth £5 and 29d. The later 1856 map (Fig. 8) shows a lime kiln in the base of the quarry. Land to the north of the quarry and the area where the quarry is presently working was known as Far Moor Close (1844:72) and valued at £15 3s 39d.

Field A of the proposed extension was subdivided into 4 fields (1844: 79, 77, 76, 106 and a small part of 120). These fields were known as Quarry Close (79), Near Horse Pasture (77), Saint Join Close (76), Buskey Close (106) and Great Dun Close (120).

Buskey would appear to be a personal name and field 79 is called so due to the adjacent quarry. St Join close may be a corruption of St John. Perhaps of more interest is Great Dun Close. Dun is the celtic word for a fortified mound/settlement and the Old English for 'hill'. Field 118 (1844) which was located immediately to the south of Smaws Hall was known as Little Dun Close.

Field B is composed of two parts of fields 80 and 105 (1844). These fields were called Far Road Close and Road Close. Field C was also once part of Road Close and Quarry Close (1844:144).

In 1844 all the old fields were remodelled in to the present land divisions and were arable at the time of the Tithe Survey.

CONCLUSIONS

The evaluation of the 36 ha. of arable land to the east of the existing Smaws Quarry has considered information relating to the environmental, archaeological and historical importance of this area of North Yorkshire. The environmental evidence showed that some of the hedgerows had developed over a considerable period of time, whereas others were recent additions to the landscape as the result of economic pressures after the First World War with the advent of better machinery and the need for larger more open farm land which suited this new machinery better.

In addition the archaeological data for the area in the form of spot finds, aerial photographic evidence, and previous evaluations suggested activity from the prehistoric period through to present day. The aerial photographic information is shows a number of crop and soil mark features which suggest land divisions, agricultural management in the form of enclosures and field systems and also settlements

From the existing information it would appear that there are linear and enclosure features within the proposed extension site and which may relate to prehistoric activity recorded at the recent evaluations at Smaws Quarry.

The walk over results produced a wide range of material and dates. The observation of prehistoric pottery and worked flint is of particular note and suggests that there is prehistoric activity in the immediate vicinity and that fieldwalking of this area has to be implemented as part of any further

evaluation of the area..

Historical summaries of Tadcaster, Smaws Hall and the agricultural land around Smaws Quarry have shown that the limestone geology is intrinsic to the historical and economic development of this area.

The results of the Desktop Study necessitated further work and the recommendations of a staged programme were implemented. designed to define and further evaluate the archaeology of the extension area. A geophysical survey and intensive fieldwalking of Area A was undertaken.

Geophysical Survey

Introduction

During September 1996 a Geophysical Survey was undertaken within Area A of the proposed extension area. This involved a total area scan followed up by 50% intensive magnetometer survey. The grid used was identical to that used in the fieldwalking programme and has been tied into Ordnance Survey datum. The results are summarised within this report.

Results

The survey located a series of linear anomalies which as they do not appear to correspond to drift archaeology are arguably of an archaeological origin and possibly representing field boundaries. In addition survey located a sub-circular enclosure with possible internal features and a very strong magnetic response which may equate to a hearth or kiln. (Fig. 17).

The results of the survey have been used as the basis for the location of the sample trenches which will be undertaken in early 1997 (Fig. ~~18~~ 17).

Fieldwalking Programme

Introduction

This section of the report considers an area of land to the east of the present quarry of approximately 6.96 ha. (Fig. 18), which is currently farmed by Mr Robinson and is composed of one large field, which had been recently planted with turnips

The fieldwalking was undertaken in September 1996, when the height of the crop varied from only a couple of millimetres to up to 0.10m. Light quality varied between good and even, to bright sunlight with shadows, and dull and overcast.

The area was walked in 10m squares (Figs. 19 & 20) with collection of all material (excluding brick and tile) from the square in a set time interval of 5 minutes per square. The results of the distribution of the collected material are displayed in both pictorial and tabular form (Figs. 21-27 & Tables 1-6).

Results

Pottery

Pottery of roman, medieval, post medieval and modern date was collected from the evaluation site. Modern fabrics of white, and blue and white transfer earthenwares and modern stonewares dominated the assemblage, but varied greatly in their density per square (Figs. 21-23 : Table 2). There is a distinct variation in the concentration of modern pottery from heavy densities in the south, to lesser amounts in the north. The greater densities of modern pottery per square in the south may be explained by more rigorous manuring in the past. The pattern of higher density is also mirrored in the post medieval assemblage suggesting cultivation over the past 400 years.

The post medieval sherds consisted of Stonewares, Cistercian ware, Black ware, Red-bodied earthenwares and Staffordshire type slip wares, a total of 217 sherds. The distribution pattern shows a slight preference for the southern portion of the area with a count of between 1 and 4 sherds per square (Fig. 24).

The medieval material collected consisted of only 8 sherds of York Glazed ware and Humber ware. Dates ranged from the 13th century through to the later 15th, with a maximum sherd count of only 1 per square (Fig. 25).

Roman material consisted of 23 sherds, randomly distributed across the survey area with the highest count per square of 2 sherds (Fig. 26).

Glass

Glass was the second most common category of material collected after pottery (Fig. 21). The majority of the material collected was of modern date and representing jars and bottles. The high incidence of broken bottle necks is indicative that the bottles were broken deliberately to retrieve the glass cods. Only a few sherds of post medieval date were observed and again these represented broken bottles.

Clay Pipe

This type of find was well represented within the collected assemblage, occurring in approximately 40% of every square walked (Fig. 21). The assemblage consisted of in the main stem fragments, with occasional bowl fragments (Appendix 3c). Based on consideration of the thickness of the stem this information suggests a period of use from the 17th century through to the late 19th century.

Shell

Fragments of oyster shell occurred throughout the area with no apparent preference for specific portions of the area (Fig. 21). This distribution compliments the higher pottery densities.

Slag

A number of small pieces of slag were collected. The material did not form any concentrations and was of a very small size and weight (c. 100 gms max.) which does not coincide with any geophysical

anomalies

Flint

A total of 32 pieces of waste material were collected (composed of 28 flakes and 4 cores), in addition to 13 tools (Fig. 27 and Table 6). The tools consisted of blades, bladelets, scrapers, and end and side scrapers A mixture of flint types was used: grey flint from the Yorkshire Wolds, brown flint common to the Flamborough region, white flint of glacial origin, and a small number of high quality translucent flints again originating in the east of the county.

The flint assemblage was seen to be evenly spread throughout the surveyed area of the site.

Miscellaneous

In addition to the main categories of finds a number of fragments of slate roofing tile were recovered (Fig. 21 and Table 1)

Spatial Analysis

Although the data from the fieldwalking programme has been analysed spatially the results are not that significant. Fieldwalking to the west of Tadcaster is confined to the results from Smaws and without further work in the Tadcaster West parish it is presently impossible to place these results in a wider context.

Flint

	No.	Ha.	Artefacts per Ha.
Total	45	6.67	6.746
Tools	13	6.67	1.949
Waste	32	6.67	4.797

Post-medieval Pottery

	No.	Ha.	Sherds per Ha.
Total	215	6.67	32.234
SST	2	6.67	0.299
RST	1	6.67	0.150
RT	1	6.67	0.150
SYG	17	6.67	2.549
SSL	23	6.67	3.448
B	57	6.67	8.546
RB	1	6.67	0.150
BG	69	6.67	10.345
S	10	6.67	1.500
POR	1	6.67	0.150
CT	11	6.67	1.649
MS	3	6.67	0.450
MM	10	6.67	1.500

need full names

see Appendix page 39.

Conclusions

The differences in distribution of medieval through to modern pottery suggests that this area of land was only taken in to arable cultivation in the post medieval period; prior to this it was probably pasture or rough ground. Earlier material is represented by a few Roman sherds. The flint assemblage has a tool to waste ratio of approximately 1:2.5. Consideration of the geophysical results for the survey area indicate that the flint distribution does not correspond with linear geophysical anomalies, however it is possible to equate a number of the Roman sherds to the anomalies so far detected.

Without sample excavation, dating of the site on fieldwalking finds alone is problematic. There is a strong suggestion that the site may be Roman in date based on the form of the geophysical features and the archaeological setting, but equally the background flint assemblage cannot rule out at this stage a much earlier date for the archaeological activity.

Sample Excavation

Introduction

As outlined above the fieldwalking and geophysical survey results need to be expanded by means of sample excavation. The aim of this further stage of work is to provide information on the accuracy of the anomalies detected. The excavation of a number of the anomalies at pre-determined locations (Fig. 19) should provide information on date, nature and degree of preservation thus permitting a more informed statement on the degree and nature of archaeology within the extraction area.

Programme of works

The sample excavation of 6 trenches are scheduled to be undertaken by MAP Archaeological Consultancy Ltd in mid-late January 1997. The exact timing of the works are subject to agreement with the farmer.

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APPENDIX 1

TABLE 1

Hedge No.	Species														
	Elder	Hawthorne	Beech	Hazel	Whitebeam	Wildrose	Sycamore	Holly	Field Maple	Blackthorn	Horsechestnut	Ivy	Bird Cherry	Blackberry	Ash
1		*		*				*	*					*	
2	*	*		*					*	*	*	*	*		
3a	*	*				*	*								
3b	*	*				*	*								
4	*						*								
5		*	*				*					*			*
6	*	*		*											
7							*								
8	*	*		*			*			*					
9	*	*		*		*	*		*	*					
10	*	*													
11		*	*	*	*										

Table 2

Hedge No.	No. of Species	Length	Age (years)
1	5	300m	450-500
2	8	300m	750-800
3a	4	240m	350-400
3b	4	150m	350-400
4	2	50m	150-200
5	5	140m	450-500
6	3	130m	250-300
7	1	400m	50-100
8	5	150m	450-500
9	7	340m	650-700
10	2	110m	150-200
11	4	250m	350-400

APPENDIX 2

Photographic catalogue

1. View of Hedge 1. Facing north-west.
2. View of Hedge 1. Facing west.
3. View of Hedge 2 and Smaws Wood. Facing east-north-east.
4. View of Hedge 2. Facing north-east.
5. View of the location of Smaws Hall. Facing east.
6. View of Hedge 3. Facing west.
7. View of White Quarry. Facing south.
8. View of interior of White Quarry. Facing north.
9. View of interior of White Quarry. Facing east.
10. View of interior of White Quarry. Facing west.
11. View of interior of White Quarry. Facing north.
12. View of Hedge 8. Facing west.
13. View of Hedge 8. Facing east.
14. View of Hedge 9. Facing north-west.
15. View of Hedge 10. Facing west.
16. View of cairn at corner of Hedges 9 and 10. Facing south-west.
17. View of Hedge 10 and Smaws Quarry. Facing west.
18. View of Hedge 11 with Smaws Qaurry in the background. Facing north.

APPENDIX 3

1a. Pottery

KEY m - modern pm - post medieval med - medieval rom - rom

B6	1 m	D18	4 m	F4	1 m
B8	1 rom	D19	4 m		1 med
B10	1 m		1 pm	F5	2 m
B11	2 m	D20	1 m	F6	1 m
B12	1 m	D21	4 m	F7	2 m
	1 pm	D22	1 m		1 pm
B14	1 m		1 pm	F8	3 m
	1 rom		1 med	F9	1 m
	1 pm	D23	3 m	F11	1 m
B15	1 m	D26	2 m		3 pm
B21	1 m		2 pm	F12	4 m
	1 med	D27	3 m		1 pm
B26	1 m	D28	1 pm	F15	2 m
B28	1 m	D29	1 pm		1 pm
C3	5 m	E3	1 m	F16	4 m
	1 pm	E4	2 m		1 pm
C5	1 pm		1 pm	F18	2 m
C6	2 m	E5	2 m	F20	2 m
C7	2 m	E7	5 m	F23	1 m
	1 pm	E8	2 m		1 pm
C9	1 m		1 pm	F24	2 m
C12	1 m		1 glazed tile		1 pm
C13	I m	E9	2 m	F26	4 m
C14	2 pm		2 pm	F27	1 pm
C15	3 m	E10	3 m	F28	1 m
	1 pm	E11	7 m	G2	3 m
C16	3 m		3 pm	G3	2 m
C17	1 m	E12	3 m		1 pm
C20	3 m	E13	2 m	G4	5 m
C21	1 m		1 pm		1 pm
C26	1 m	E14	1 m	G5	4 m
C28	1 m		1 pm	G6	2 m
D3	2 m	E15	4 m	G7	1 m
D4	1 m	E16	3 m		1 pm
D5	4 m		2 pm	G9	5 m
D6	3 m	E17	4 m		1 pm
D7	2 m		3 pm	G10	2 pm
	2 pm	E18	1 m	G11	1 m
D8	3 m	E19	2 m		1 pm
D10	3 med	E20	1 m	G12	1 pm
	1 pm	E22	3 m	G13	1 m
D11	1 m	E23	2 m	G14	1 m
D12	4 m	E24	1 m		1 med
	1 pm	E25	1 m	G15	1 pm
D14	1 m		1 pm	G18	2 m
D15	3 m	E26	8 m	G20	1 m
	1 pm		2 pm		1 rom
D16	1 pm	E28	2 m	G21	2 m
D17	2 m	F3	2 m		1 pm
	1 pm		1 pm	G22	1 pm

G24	1 m
G26	4 m
	1 pm
G27	3 m
	1 pm
G28	1 m
H2	2 m
H3	1 m
	3 pm
H4	4 m
	1 pm
H7	3 m
H8	1 m
	2 pm
H9	3 m
	2 pm
H10	1 m
H11	1 m
H12	1 pm
H17	2 m
	1 pm
H19	3 m
H20	2 m
	1 pm
H21	3 m
	1 pm
H22	1 m
H23	4 m
H24	2 m
	1 pm
H25	3 m
H26	2 m
	2 pm
H27	2 pm
H28	3 m
I2	4 m
I3	3 m
I4	10 m
I5	2 m
	1 pm
I10	1 m
	1 pm
I11	1 m
	2 pm
I12	3 m
I13	3 m
I14	2 m
I16	2 m
I17	1 m
I19	1 m
I20	2 m
I21	2 m
I22	2 m
	1 rom
I23	1 pm
I25	7 m
I26	1 pm
I27	2 pm
I28	3 m
J2	1 m
J3	5 m
	1 rom
J4	4 m
J5	4 m
J6	1 m
J7	5 m
J8	3 m
J9	2 m
	1 pm
J10	4 m
	1 pm
	1 med
J11	7 m
	2 pm
J12	2 m
	1 med
J13	1 m
J15	2 m
J16	1 m
J17	1 m
J18	1 pm
J19	1 m
J20	2 m
J21	2 m
J22	1 m
J24	1 m
J26	1 m
	1 pm
J28	3 m
J29	2 m
K2	3 pm
K3	2 m
	3 pm
K4	2 m
K5	2 m
	1 pm
K6	1 pm
K7	3 m
	1 pm
K9	1 m
	1 pm
	1 rom
K10	3 m
	2 pm
K11	1 pm
K12	2 m
	1 pm
	1 med
	1 rom ?
K13	1 m
	1 pm
K14	1 m
	1 pm
K15	1 m
	1 med
K17	2 m
K19	2 m
	1 pm
K20	2 m
	1 pm
K21	3 m
K22	3 m
K23	3 m
K24	2 m
K25	2 m
K26	5 m
K28	1 m
	1 pm
K29	6 m
L2	4 m
	1 pm
L3	4 m
	1 pm
L4	4 m
L5	2 m
	1 pm
L6	1 m
	1 pm
L7	1 pm
L8	1 m
	1 pm
	1 med
L9	1 m
L10	1 m
L11	4 m
	2 pm
L14	4 m
	1 pm
L17	2 m
L18	1 m
	1 pm
L19	1 m
L20	3 m
L21	2 m
L22	3 m
	1 pm
L23	7 m
L24	3 m
L25	3 m
	1 med
L26	3 m
L27	1 m
L28	6 m
	1 pm
L29	1 m
M2	3 m
	2 pm
M3	5 m
	1 pm
M4	1 m
M5	1 m
M7	1 m
	1 pm
M8	2 m

M9	2 m
M10	2 m
	1 pm
M11	2 m
	1 pm
M12	3 m
M14	1 m
	1 pm
M15	2 m
M16	1 m
M19	1 m
M21	1 m
M22	2 m
M24	2 m
N2	3 m
N3	5 m
	1 pm
N4	2 m
	4 pm
N5	4 m
	1 pm
N6	3 m
	1 pm
N7	1 pm
N8	7 m
N9	1 pm
N10	5 m
	1 pm
N11	11 m
	1 pm
	1 med
N12	4 m
N13	7 m
	4 pm
N14	1 m
N16	1 m
N17	1 pm
	1 rom
N19	1 pm
N20	1 pm
N22	2 m
N25	1 m
N26	3 m
N27	1 m
O2	1 pm
O3	4 m
O7	2 m
	1 pm
O8	1 pm
O10	3 m
	1 pm
O11	2 pm
	3 m
O12	1 m
O13	1 m
	1 pm
O14	2 m
O15	1 m
O18	2 m
O19	1 pm
O21	1 m
O22	1 m
O23	2 m
	1 pm
O26	1 m
O28	2 m
P1	2 m
	1 pm
P2	1 m
P3	1 m
P4	1 m
	2 pm
P6	1 m
P7	1 m
P8	5 m
P9	3 m
P10	1 pm
P12	1 m
P13	1 m
	1 pm
P14	1 m
P16	1 med
	1 pm
P17	2 m
P18	2 rom
P19	2 m
P20	2 m
P21	2 m
P26	1 m
Q3	2 m
	4 pm
Q4	2 pm
Q5	1 pm
Q6	1 m
Q7	3 m
Q8	3 pm
Q10	2 m
Q11	1 m
Q12	3 m
Q13	2 m
	1 pm
Q14	3 m
	1 pm
Q15	1 m
	1 pm
	1 med
Q16	1 m
Q17	2 m
	1 rom
Q18	1 m
Q19	1 m
	1 pm
Q20	1 m
Q21	3 m
	2 pm
	1 rom
Q27	1 m
R2	2 m
R4	2 m
R5	2 m
	1 pm
R6	1 m
	1 pm
R7	1 m
R8	3 m
	2 pm
R9	5 m
	1 pm
R10	5 m
	2 pm
R11	1 m
	1 pm
R13	3 m
R14	3 m
R15	2 m
R16	1 pm
R17	2 m
R18	1 rom
R19	1 m
R21	1 m
R22	1 m
R23	3 m
R24	1 m
	1 pm
R25	1 m
R27	1 m
S2	1 m
S3	2 m
	2 pm
S4	5 m
	2 pm
S5	5 m
S7	3 m
	1 pm
S8	2 m
S9	6 m
	1 pm
S10	4 m
	2 pm
S11	4 m
S12	1 m
S13	3 m
S14	1 m
S15	2 m
S18	1 m
S20	2 m
S21	3 m
S22	1 m
S23	1 pm
S24	2 pm
S25	2 m
S27	2 m
	1 pm
T2	4 m

T3	6 m	U19	2 m	W12	2 m
T4	1 m	U20	4 m	W14	1 m
T6	2 m	U22	2 m		1 pm
T7	1 m	U23	2 m	W16	1 m
T8	4 m	U25	1 m	W20	1 m
	1 pm	U26	2 m	W21	2 m
	1 rom	U27	2 m	X2	3 m
T9	2 m	V2	1 pm	X3	3 m
	2 pm		7 m	X4	3 m
T10	1 pm	V3	4 m		1 pm
T11	1 m		2 pm	X5	2 m
T12	2 m	V4	3 m	X6	2 pm
T13	2 m	V6	1 m	X7	1 pm
T20	1 pm		1 pm	X10	1 m
U2	5 m	V7	2 m	X12	2 m
	1 pm		1 pm	X13	1 r / pre ?
U3	5 m	V8	2 m	X14	1 pm
U4	1 m	V9	7 m	X17	1 m
U6	5 m	V10	1 m	X18	1 m
	1 pm		2 pm	X20	1 m
U7	2 m	V13	2 m		1 pm
U8	5 m	W2	3m	X21	1 m
U9	8 m	W3	4 m		1 pm
U12	1 m		1 pm	X23	2 m
U13	4 m	W4	1 m	X24	3 m
U14	1 pm	W7	3 m	X26	2 m
U15	2 m	W10	4 m	X27	1 m
	1 pm		1 pm		
U18	1 m	W11	2 m		

1 b. Flint

B5 1 flake: cortex remnant, percusion bulb, no retouch, translateucent grey. L. 21mm, W. 20mm, D. 9mm.

B7 1 side scraper fragment: cortex remnant, slateight retouch on left lateral, proximal snapped, distal damage, mottled grey. L. 25mm, W. 24mm, D. 4mm.

B14 1 flake: translateucent. L. 19mm, W. 12mm, D. 2mm.

B26 1 flake: proximal snapped, no retouch, brown. L. 22mm, W. 15mm, D. 4mm.

D19 1 blade fragment: percusion bulb, proximal snapped, slateight retouch on right lateral, mottled blue-grey. L. 21mm, W. 14mm, D. 2mm.

D26 1 flake: percusion bulb, cortex remnant, mottled blue-grey. L. 21mm, W. 17mm, D. 2mm.

G27 1 flake: proximal snapped, mottled grey. L. 23mm, W. 22mm, D. 3mm.

H14 1 flake: proximal snapped, mottled grey. L. 20mm, W. 17mm, D. 3mm.

H20 1 bladelet: percusion bulb, mottled grey. L. 28mm, W. 11mm, D. 2mm.

H27 1 core: two platforms, coretex remnant, dark grey. L. 50mm, W. 38mm, D. 30mm.

H28 1 gunflint?: proximal snapped, slateight bi-lateral retouch, dark grey. L. 27mm, W. 32mm, D. 9mm.

I9 1 flake: mottled grey. L. 29mm, W. 16mm, D. 9mm.

I11 1 flake: cortex remnant, mottled grey. L. 25mm, W. 14mm, D. 12mm.

I26 1 core: cortex remnant (similar to H27), dark grey. L. 59mm, W. 32mm, D. 24mm.

J14 1 flake: cortext remnant, translateucent. L. 20mm, W. 9mm, D. 4mm.

L17 1 flake: mottled grey. L. 19mm, W. 12mm, D. 2mm.

L23 1 flake: percusion bulb, cortex remnant, dark grey. L. 48mm. W. 38mm, D. 8mm.

N13 1 flake: percusion bulb, cortex remnant, dark grey. L. 25mm, W. 21mm, D. 3mm.

O11 1 disc scraper: proximal and distal damaged, percusion bulb, mottled grey. L. 32mm, W. 30mm, D. 10mm.

P3 1 flake: percusion bulb, cortex remnant, white. L. 23mm, W. 20mm, D. 5mm.

P9 1 flake: cortex remnant, mottled grey. L. 23mm, W. 22mm, D. 5mm.

P21 1 flake: cortex remnant, dark grey. L. 47mm, W. 37mm, D. 10mm.

P26 1 side scarper: proximal and left lateral damage, slateight edge retouch on right lateral, ?heat treated, brown. L. 43mm, W. 30mm, D. 9mm.

Q5 1 flake: percussion bulb, mottled grey. L. 19mm, W. 16mm, D. 2mm.

R2 1 disc scraper: cortex remnant, edge retouch on left lateral, incomplete, fragmentation of under body may explain , unfinished state, grey. L. 25mm, W. 25mm, D. 7mm.

R8 1 flake: mottled grey. L. 20mm, W. 18mm, D. 4mm.

S3 1 flake: mottled grey. L. 18mm, W. 11mm, D. 1mm.

S4 1 bladelet: mottled grey. L. 25mm, W. 10mm, D. 1mm.

1 flake: dark grey. L. 13mm, W. 7mm, D. 5mm.

S7 1 blade fragment: proximal snapped, mottled grey. L. 15mm, W. 15mm, D. 5mm.

S12 1 flake: percusion bulb, white. L. 20mm, W. 14mm, D. 2mm.

S19 1 flake: heat treated, mottled grey. L. 20mm, W. 16mm, D. 7mm.

S20 1 blade fragment: proximal snapped, mottled grey. L. 18mm, W. 11mm, D. 3mm.

1 thumbnail scraper: proximal damaged, cortex remnant, slateight retough, white. L. 17mm, W. 17mm, D. 4mm.

T8 1 flake/core reject: dark grey. L. 25mm, W. 15mm, D. 5mm.

T11 1 flake:percusion bulb, cortex remnant, mottled grey. L. 24mm, W. 15mm, D. 2mm.

U10 1 flake: percusion bulb, dark grey. L. 18mm, W. 12mm, D. 2mm.

U15 1 flake: translateucent. L. 7mm, W. 7mm, D. 2mm.

W19 1 flake: percusion bulb, mottled grey. L. 32mm, W. 21mm, D. 6mm.

1 flake: pale yellow. L. 24mm, W. 14mm, D. 2mm.

W21 1 core: cortex remnant, dark grey. L. 32mm, W. 27mm, D. 8mm.

W27 1 flake: mottled grey. L. 13mm, W. 13mm, D. 2mm.

X9 1 bladelet fragment: proximal and distal snapped, cortex remanat, mottled grey. L. 19mm, W. 15mm, D. 2mm.

1 flake: mottled grey. L. 19mm, W. 15mm, D. 2mm.

X26 1 knife: proximal damaged, all over retouch, percusion bulb, mottled grey. L. 37mm, W. 23mm, D. 7mm.

1 c. Glass

KEY : c - clear b - blue g - green dg - dark green pg - pale green

C14	1 c	F13	1 c	J22	1 yellow
C22	2 b	F18	1 g	J24	1 g
C28	1 g	F25	1 g	J25	1 b
D7	1 dg	G2	2 c	J29	1 c
D8	1 dg	G3	1 c	K3	1 c
D15	1 c	G4	2 c	K6	3 c
D16	1 c	G5	1 c	K7	1 g
D19	1 c		1 dg	K9	1 c
D20	1 c	G19	1 g	K11	1 b
D25	1 g	G22	1 c	K21	1 pg
D27	1 g	H3	1 dg	K23	1 dg
E4	1 dg	H6	1 c		1 g
	1 b	H10	1 c	K26	1 c
E5	1 c	H11	1 c	L2	1 g
	1 g	H12	1 g	L4	1 c
E8	1 g	H13	1 b	L5	1 g
E9	1 dg	H20	1 g	L10	1 g oxidised
E10	1 g	H23	1 c	L11	1 g
E11	1 c	H24	1 c	M2	1 c
E13	1 dg	H28	1 g	M3	1 dg
E14	1 dg		1 b	M11	1 c
E16	1 c	I4	1 pg	M14	1 c
E18	1 c	I10	2 c	M17	1 c
E19	1 c	I11	2 g	M18	2 c
E20	1 g	I18	1 black	M22	1 c
E25	1 g	I20	1 g	M24	1 c
E26	1 b	J5	1 dg	N11	1 c
	1 c	J8	1 dg	N17	1 c
F6	1 g	J9	1 g	N21	1 c
F7	1 c	J10	1 b	O2	1 c
F11	3 dg	J21	1 c	O3	1 c

O14	1 dg	R24	1 g	U12	1 c
O18	1 c	S4	2 c	U13	1 blade
O19	1 g	S6	1 c	U14	1 g
O20	1 dg		1 dg	U19	1 dg
P3	1 c	T2	1 b	U24	1 g
P4	1 c	T3	1 g	U26	1 g
P8	1 c	T4	1 dg	V7	1 g
P20	1 dg	T5	1 g	V9	1 c
P26	1 brown	T6	1 c	V11	1 c
Q3	1 c		1 g	V12	1 c
Q6	1 g	T8	1 g	V13	1 c
Q7	1 c	T9	1 c	W5	1 c
Q11	1 dg	T11	1 dg	W20	1 c
Q12	1 c	T12	1 c	X2	1 c
Q13	1 g		1 g	X5	1 c
Q21	1 c	U1	2 c	X9	1 g
R7	1 c	U3	1 c	X12	1 brown
R22	1 dg	U4	1 c	X14	1 c
	1 brown	U6	2 c	X25	1 c
R23	1 g	U7	1c		

1 d. Clay pipe

KEY : s - stem fragment bf - bowl fragment

B10	1 s		1 bf	O15	1 s
C3	1 bf	J22	1 s	O26	1 s
D11	1 bf	J27	2 s	O28	1 s
D13	1 bf	K15	1 s + join	P17	1 s
D21	1 s	L3	1 s	P19	1 s
E7	1 s	L6	1 s	Q13	1 s
E11	1 bf	L11	1 s	Q15	1 s
G11	1 bf	L12	1 s	Q19	1 s
G25	1 s glazed	L14	1 s	Q20	1 s
G28	1 s		1 bf	Q25	1 s
H12	1 s	L17	1 s	R10	1 s
H14	1 s	L21	1 s	R16	1 s
H21	2 s	L25	1 s	R18	1 s
H26	1 s	L28	1 s	S3	1 s
H28	2 s	M6	1 s	S8	1 s
I8	1 s	M12	1 bf	S9	1 s
I20	1 s	M14	1 s	S10	1 s
I22	1 s	N2	2 s	T20	1 s
I28	2 s	N3	1 s	U3	1 s
J3	1 bf	N5	1 s	U7	1 s
J4	1 s	N9	1 s	U14	1 s
J7	1 s	N11	1 s	U19	1 s
J9	1 s	N13	1 s	V3	1 bf
J11	2 s	N16	1 s	V7	1 bf
J12	1 s		1 bf	V18	1 s
J14	1 s	N22	1 s	W5	1 s
	1 bf	O11	1 s		
J16	1 s		1 bf		

1 e. Shell

KEY : of - oyster fragment

B9	1 of	I17	1 of	O17	1 of
B28	1 of	J3	1 of	O23	1 of
D4	1 of	J4	1 of	P8	1 of
D12	1 of	J5	1 of	Q5	1 of
D14	1 of	J7	1 of	Q9	1 of
D18	1 of	J8	1 of	Q19	1 of
D20	1 of	J10	3 of	R4	1 of
D23	1 of	J12	1 of	S2	1 of
E3	1 of	J14	1 of	S9	1 of
E23	1 of	J16	1 of	S11	1 of
F10	1 of	J17	1 of	S16	1 of
F11	1 of	J26	1 of	S21	1 of
F29	1 of	J27	2 of	S22	1 of
G8	2 of	J29	1 of	S24	1 of
G10	1 of	L3	1 of	T3	1 of
G13	1 of	L11	1 of	T9	1 of
G18	1 of	L12	1 of	U6	1 of
G20	1 of	L15	3 of	U7	1 of
G22	1 of	L27	1 of	U9	1 of
H21	1 of	M8	1 of	U15	1 of
H22	1 of	M9	1 of	V10	1 of
H23	2 of	M14	2 of	W2	1 of
H24	1 of	M19	1 of	W7	2 of
H25	1 of	N12	1 of	X24	1 of
I12	1 of	O10	1 of		
I16	1 of	O11	1 of		

1 f. Metal

C3	1 decorated Cu all plaque
D3	1 Fe nail
L2	1 v - shaped fragment
L5	1 button
L15	1 button

1 g. Miscellaneous

C5	1 slate	E12	1 slate	F13	1 slate
C9	1 slate	E19	1 tooth fragment	F28	1 slate
C12	1 slate	E23	1 slate	G3	1 slate
C13	1 slate	E25	1 slate	G4	1 slate
D11	3 slate		1 sg	G10	1 slate
D12	1 slate	E26	2 slate	G12	1 slate
E7	1 slate	E28	1 slate	G22	1 sgp
E8	1 slate	F5	1 slate	H13	1 slate
E9	2 slate	F10	1 slate	H17	1 sgp
E10	1 slate	F12	2 slate	H18	1 slate

H24	1 slate
H28	1 slate
J6	1 slate
J7	1 slate
J28	2 slate
K11	1 slate
L3	1 slate
L9	1 slate
L12	1 slate
L14	1 slate
L16	1 slate
M24	1 slate
S2	1 slate
S5	1 slate
S11	1 slate
S18	1 slate
S20	1 slate
S21	1 slate
S22	1 slate
S24	1 slate
U4	1 slate
U9	1 slate
U14	1 slate
U23	1 slate
U26	1 slate
W2	1 slate + peg hole
W7	1 slate
X27	1 slate

APPENDIX 4

Pottery Catalogue

	Roman						Medieval																	
	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
B8		1																						
B12																1								
B14																1								
B21							1																	
B26																	1							
C5												1												
C7																1								
C14													1											
C15														1						2				
D7																2								
D10																				1				
D12																					1			
D13																	1							
D15														1										
D16														1										
D17														1										
D19														1										
D22		1							1															
D26													1	1										
D28														1										
D29																								
E4													1			1								
E8																								
E9													1	1										
E11																								
E14													1											
E15																	1							

	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
E16												1										1		
E17																2							1	
E25																			1					
E26														2										
F3												1		1									1	
F4								1																
F7		1																						
F11													1	2										
F12																			1					
F15												1												
F16																						1		
F20			1																					
F23														1										
F27																						1		
G3														1										
G4														1										
G7														1		1								
G9												1												
G10														3										
G11														1										
G12																1								
G14													1											
G15														1										
G21														2										
G22																1								
G26														1										
G27																			1					
G28			1																					
H3			1											1								1		
H4														1		1								
H8														1		1								
H9														1					1					
H12														1										
H16																	1							
H17														1										
H20																1								
H21												1												

	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
H23									1															
H24																			1					
H26														1							1			
H27			1									1												
I5																1								
I11																1								
I22			1																					
I26																1								
I27																2								
J2																	1							
J3				1																				
J10								1								2								
J11																2								
J12																	1							
J15																		1						
J18																1								
J26												1					1							
K2													2			2								
K3																2								
K5												1												
K6														1										
K7																							1	
K10														1										
K11																							1	
K12			1											1										
K13																							1	
K14														1										
K15														1									2	
K19																1								
K20																1								
K28																1								
L2													1											
L3												1												
L6																				1				
L7														1										
L8								1								1								
L11														1										

	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
L14													1											
L18			1																					
L22																1								
L25							1																	
L28																1								
M2			1												1									
M3												1												
M7																1								
M10																1								
M11														1										
M14																1								
N3												1												
N4																4								
N5													1											
N6																1								
N7														1										
N9																1								
N10													1											
N11										1						1								
N13												1		1										
N17					1											1								
N19																1								
N20													1											
O2												1												
O7												1												
O8														1										
O10																1								
O11												1				1								
O13																						1		
O19																			1					
O23																1								
P1													1											
P10																1								
P13																1								
P16																1								
P18	2																							
Q4													1			1								

	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
Q5																1								
Q8														1								2		
Q13			1										1											
Q14																			1					
Q15								1						1										
Q17																								1
Q19														1										
Q21		1	1								1													
R5														1										
R6													1											
R8																1			1					
R9													1											
R10													1											
R11																	1							
R16			1																					
R18													1											
R24																1								
S3			1													1							1	
S7																						1		
S9																						2		
S23														1										
S24														2										
S27																1								
T8						1								1										
T9																1								
T10																1								
T20																1								
U2														1										
U6													1											
U13																	1							
U14														1										
V2																			1					
V3												1		1										
V6													1											
V7			1																					
V10																2								
W3																1								

	CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
W10																1								
W14																	1							
X4																1								
X6														2										
X7																1								
X12														1										
X13	1																							
X14																1								
X20																			1					
X21																1								

Total Sherd Count by Pottery Type

CG	RBG	RBC	RBBB	RBCG	SAM	YGL	HW	?Med	RST	RT	SYG	SSL	B	RB	BG	S	POR	CT	MS	SST	MM	NT	Unid
3	4	13	1	1	1	2	4	2	1	1	17	23	57	1	69	10	1	11	3	2	10	8	1

KEY

Roman Pottery
CG Calcite Gritted ware
RBG Greyware
RBC Colour Coated ware
RBCG Romano-British Calcite Gritted ware

Medieval Pottery
YGL York Glazed ware
HW Humber ware
?Med Unidentified Medieval pottery

Post-medieval Pottery
RST Raeren stoneware
RT Ryedale type ware
SYG Staffordshire type yellow ware
SSL Staffordshire type slipware
B Blackware
BG Black glazed earthenware
S Slipware
POR Porcelain
CT Cistercian ware
MS Marbled slipware
SST Siegburg stoneware
MM Manganese mottled ware
RB Red bodied earthenware
NT Nottingham type stoneware
Unid Unidentified Pottery

Pottery Distribution by Sherd Type

CHART 1

CG	RBG	RBC	RBBB	RBCG	SAM
3	4	13	1	1	1

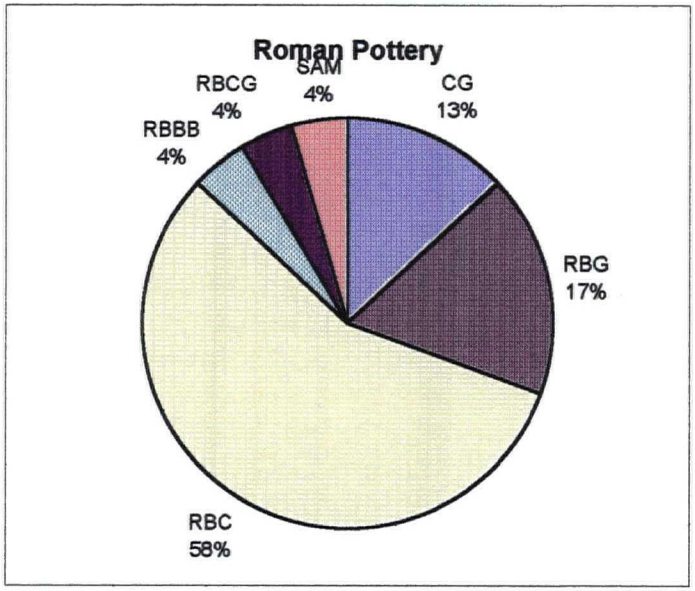

CHART 2

YGL	H	?Med
2	4	2

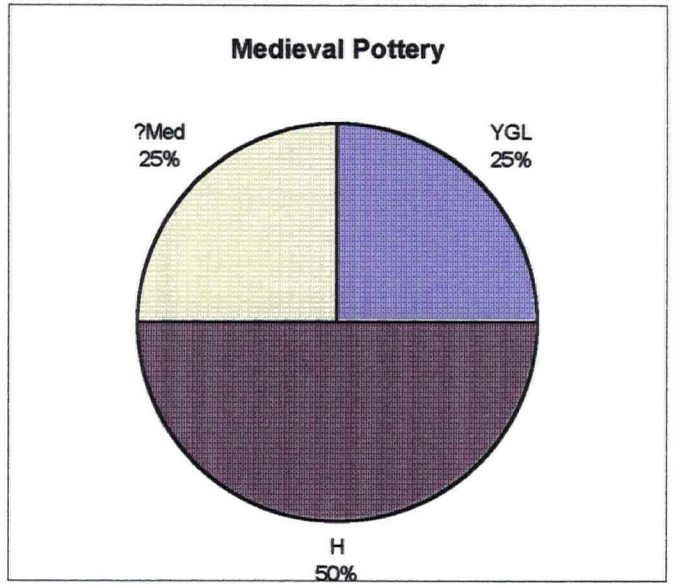

CHART 3

RST	RT	SYG	SSL	B	RB	B	BG	S	POR	CT	MS	SST	MM	NT	Unid
1	1	17	23	56	1	1	69	10	1	11	3	2	10	8	1

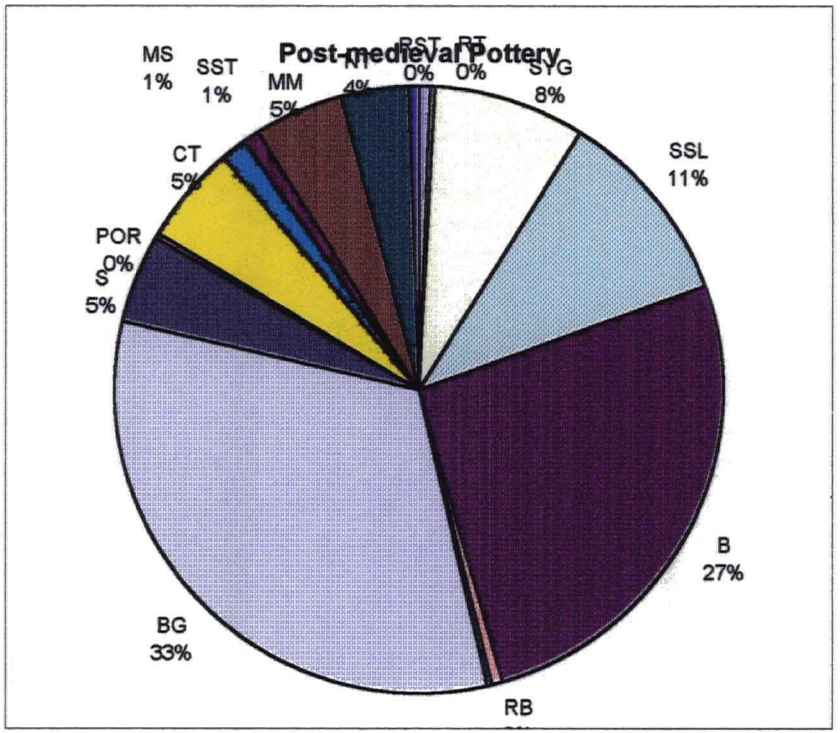

TABLE 1

General Finds Distribution

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
29			P		S				PSG	P	P												
28	PS	PG	P	P	PM		PFGC	PC	PM	P	PC			PC									M
27			PG	PM	P	F	F	P	CS		PS		P			P	P	P		P		F	P
26	PF		PF	PGS	P	P		PF	PS	PG	P		P		PFG					PGM			PF
25			G	PGS	G	C	PS	P	G	P	PC					C	P	P		P			G
24				P	P	P	PGSM		PG	P	P	PGM					PG	PSM		G			PS
23			PS	PSM	P		PGS				PF			PS			PG	P		PM			P
22		G	P	P		PGS	PS	PC	PCG	P	P	PG	PC	P			PG	PSM		P			
21	P	P	PC			P	PCS	P	PG	PG	PC	P	G		PF	PG	P	PSM				PF	P
20		P	PGS	PG	P		PFG	PGC	P	P	P		P	G	PG	PC		PFM	PC	P		PG	P
19			PFG	PG		G	P		P	P	P	PS	P	PG	PCM	PSC		F		PGC		F	
18			PS		PG	PS	M	G	P		P	G		PG	P	P	PC	PM		P	S		P
17		P	P	P			PM	PS	PS		PFC	G	PG	PS	PC	P	P						P
16		P	PG	PG	P		P	PS	PCS			PG	PC		P	P	PC	S				P	
15	P	PM	PG	P	P	P			P	PC	S	P		PC		PC	P	P		PFGS			
14	PF	PG	PS	PG			FC		FCS	P	PC	PGSC		PG	P	P	P	P		PGCM		P	PG
13		PM	PC	PG	GM	PS	GM	P		P	P		PFCM	P	P	PGC	P	P		PG	PG		P
12	P	PM	PSM	PSM	PM	PM	PGC	PS	PCS	P		PC	PS	P	P	PG		PF	PG	PG	G	P	PG
11	P		PCM		PGS	PC		PFG	PC	PG	PGSC	PG		PFSC		PG	P		PFG		G	P	P
10	PC		P	PGM	SM	PSM	PG	PG	PSG	P	PG	P	P	PS	P	P	PC	PC	P	F	PSC	P	P
9	S	PM		PGM	P	P		F	PCG	PG	PM	PS	PC		PF	S	P	PSC	PGS	PSM	PG		FG
8	P		PG	PGM	P	S	P	C	PSG		P	P	P	P	PGS	P	PF		PFG	P	P		
7	F	P	PG	PCM	PG	P	P		PCS	PG		PC		P	P	PG		PF	P	PGSC	PGC	PSM	P
6	P	P	P		PG	P	G	P		PG	PC	P	P		P	PG	P	G	PG	PGS	P		P
5	F	PS	P	PG	PM	PG		PG	PGS	P	PG	P	PC			PFS	P	PM	G	M		GC	PG
4			PSM	PG	P	PGM	P	P	PCS	PG	PG	PG	P		PG	P		PFG	PG	PGM	P		PF
3		PCM	P	PSM	P	PGM	PGS	P	PCS	P	PSCM	PG	PC		PFG	PG		PFC	PGS	PGC	PC	P	P
2						PG	P	P	P		PG	P	PC	GM	P		PF	PSM	PG	P	P	PSM	PG
1															P					G			

KEY

P - Pottery
C - Clay pipe
F - Flint
G - Glass
S - Shell
M - Misc.

TABLE 2

Modern Pottery Distribution

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
29									2	6	1												
28	1	1		2	1	1		3	3	1	10			2									
27			3								1		1			1	1	2		2			1
26		1		8	4	4	2		1	5	3		3	1						2			
25				1			3	7		2	3						1	2		1			
24				1	2	1	2		1	2	3	2					1	2					3
23			3	2	1		4			3				2			3			2			2
22			1	3			1	2	1	3	3	2	2	1			1	1		2			
21	1	1	4			2	3	2	2	3	2	1		1		3	2	3					2
20		3	1	1	2	1		2	2	3	3				2	1				4		1	1
19				2			3	1		2	1	1			2	1	1			2		2	
18			4	1		2				2				2		1		1		1			1
17		1	2	4			2	1	1	2					2	2	2						1
16		3		3	4			2	1				1		1	1						1	
15	1	3	2	4	2				2	1		2		1		1	2	2					
14		2	1	1		1		2		1			1		1	3	3	1				1	
13		1		2		1		3	1		4	6		1	1	2	3	3	2		2		
12	1	1	4	3	4			3	2	2		3	4	1	1	3			2	1		2	
11	2		1	7		1	1		7		4	2	15			1	1	4				2	2
10	1		3	3			1	1	4	3	1	2	5	3		2	5	4			1	4	1
9		1		2	1	5	3		2	2	1	2			3		5	6	2	8	7		
8			3	2	3		1		3		1	2	7		5			2		5	3		
7		2	2	5	2	1	3		5	3		1			1	3	1		1	2	3	3	
6	1	2	3		1	2			1		1		3		1	1	1		2	5	2		
5			4	2	2	4		2	4	3	2	1	4				2	5					2
4			1	2	1	5	4	10	4	2	4	1	2		1		2		1	1	3	1	
3		5	2	1	2	2		3	5	2	4	5	5	4		2			6	5	4	4	3
2						3	2	4				3	3		2			1	4	5	7	3	3
1															2								

TABLE 3

Post Medieval Pottery Distribution

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		U	V		X
29			1																				
28			1							1	1												
27					1			2										1					
26				2		1	2		2														
25				1																			
24							1										1	2					
23					1									1				1					
22						1					1												
21	1					2	1									1							1
20										1			1						1				1
19										1			1	1								2	
18									1						2	1	1						
17			1	3			1						1	1									
16			1	2	1		1								1								
15		1	2	1	1	1				3						1							
14		2		1		1				1	1	1				1				1		1	1
13			1	1											1	1							
12	1		1		1	1	1		1	1													1
11				3		1			2	1	1	1	2				1						
10			1			3			2	1		1	1	1	1		1		1		2	1	
9				2		1	2						1				1	2	1				
8				1			2				1			1		3							
7		1	2			2				1	1	1	1										1
6											1		1				1			1	1		2
5		1						1		1			1				1						
4				1		1	2					1	4			2							
3					3	1	2			2	1	1	1								2	1	
2									1	4				1						1	1		
1															1								

TABLE 4

Medieval Pottery Distribution

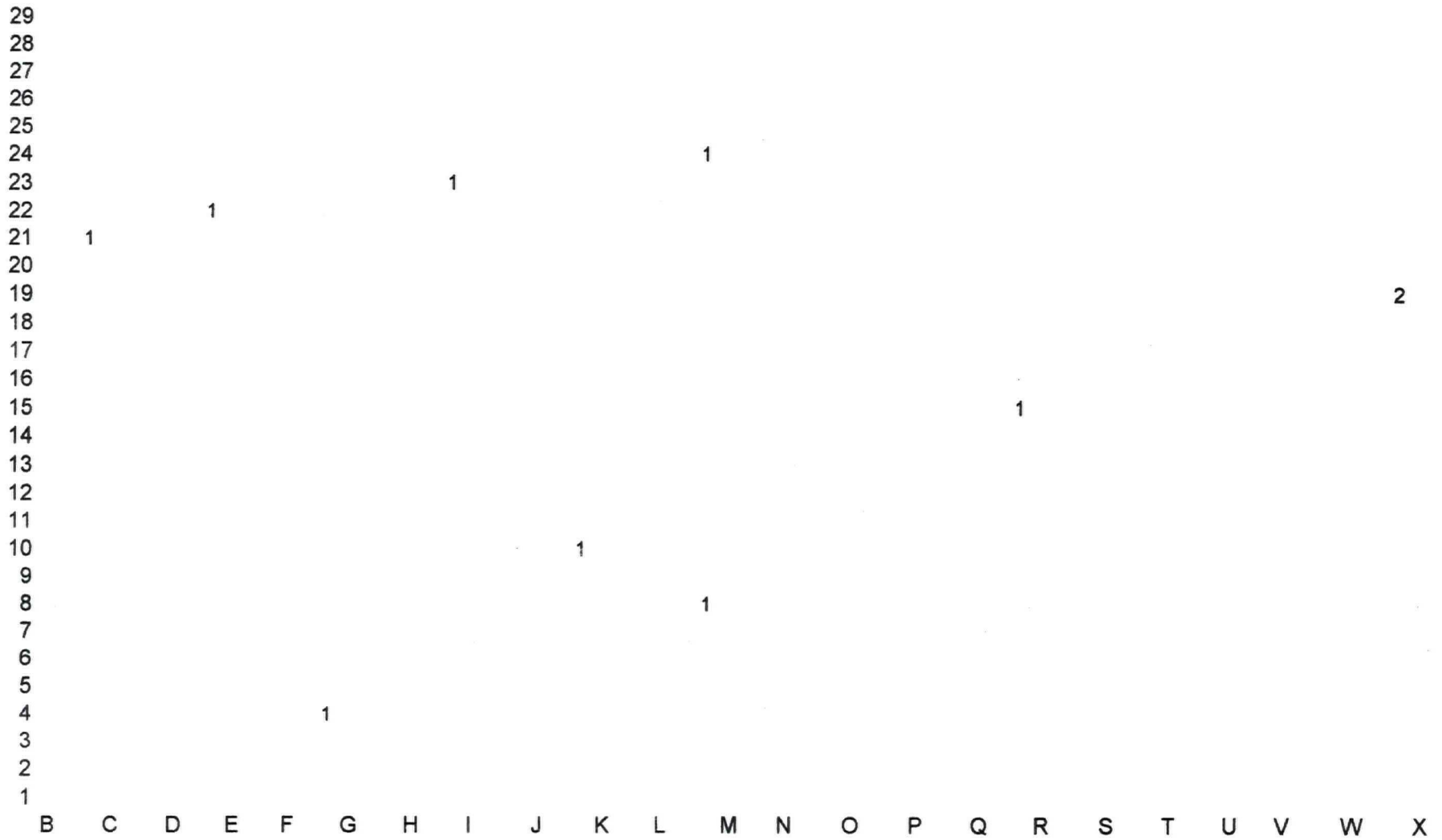

TABLE 5

Roman Pottery Distribution

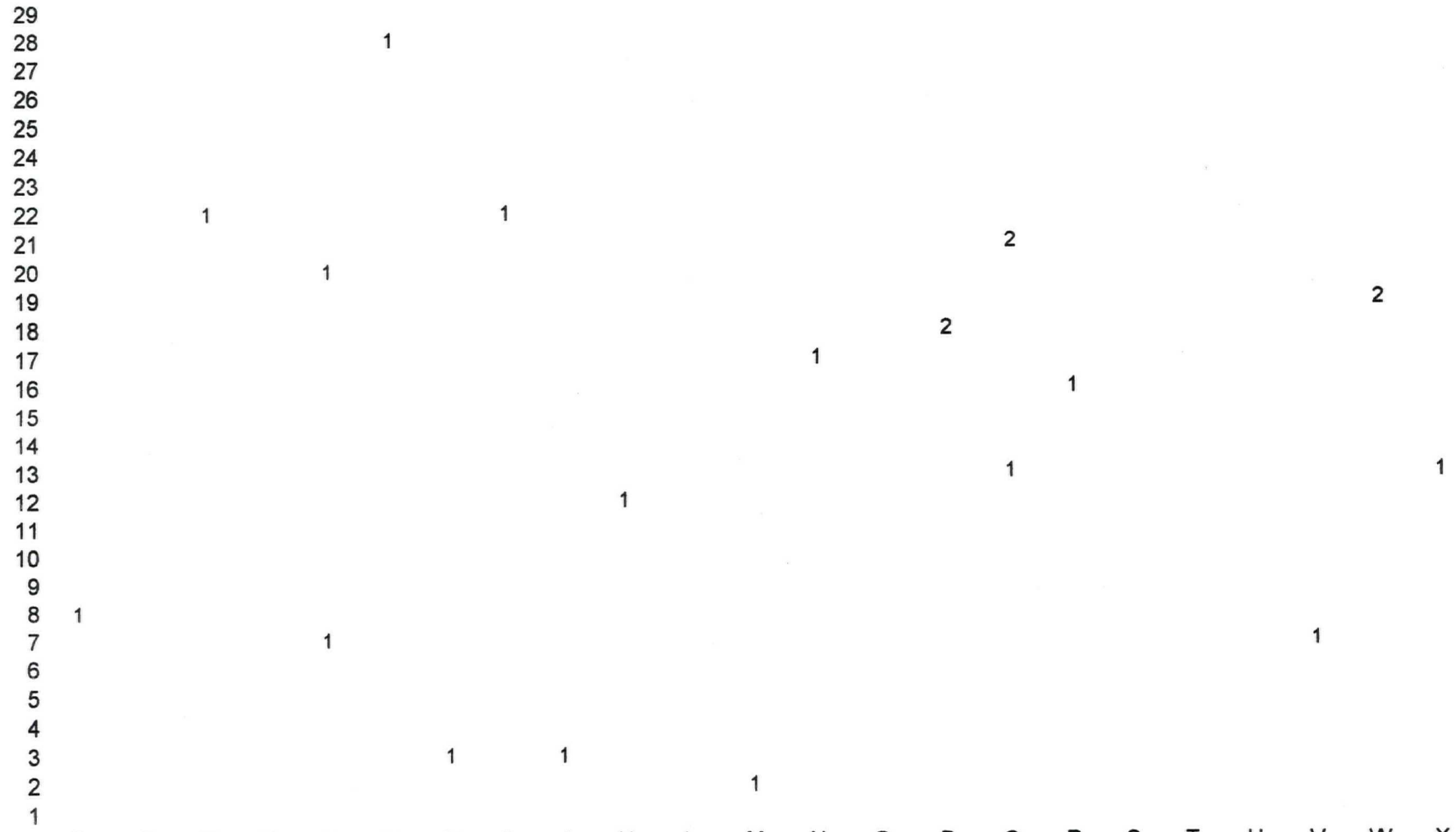

TABLE 6

Flint Distribution