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SALVAGE RECORDING ON  
THE STRENSHAM TO  
WORCESTER AQUEDUCT

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with illustrations by

and a specialist contribution on cremated bone  
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1	Summary
2	Introduction
2.1	Background
2.2	Geology and topography
2.3	Historical background
2.4	Archaeological background
3	Methodology
4	Analysis and results

4.1	Prehistoric
4.2	Roman
4.3	Medieval
4.4	Post-medieval
5	Discussion
6	Acknowledgements
7	Personnel
8	Bibliography
9	Abbreviations

## Figures

1	Route of the pipeline	facing page 1
2	Route of the Strensham to Worcester Aqueduct showing SMR numbers allocated (north section)	
3	Route of the Strensham to Worcester Aqueduct showing SMR numbers allocated (south section)	
4	Topography and major rivers along the route (north)	
5	Topography and major rivers along the route (south)	
6	Location of the site at Strensham (HWCM 7708) showing pipeline sites in the area and existing background information	
7	Location of the site at Pirton (HWCM 15351) showing pipeline sites in the area and existing background information	
8	Location of the site at Norton (HWCM 15350) showing pipeline sites in the area and existing background information	
9	Section through Roman deposits at Pirton (HWCM 15351)	
10	Roman pottery from Pirton (HWCM 15351)	
11	Section through the oven/kiln at Pirton (HWCM 15341)	

## Tables

1	SMR summary table
2	Summary of results
3	Finds quantification
5	Flint

## Appendices

1	The archive
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Salvage recording on the Strensham to Worcester Aqueduct

Robin Jackson, Derek Hurst and Elizabeth Pearson

1	Summary
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Excavation and salvage recording were undertaken during the construction of a pipeline from Strensham to Worcester on behalf of Severn Trent Water Limited. Three important sites were investigated in detail; at Strensham, the site of a deserted medieval settlement which could not be avoided by the pipeline, and at Pirton and Norton-Juxta-Kempsey, which were both previously unknown sites.

Roman occupation was identified at all three locations. At Strensham, a long history of occupation was revealed, from the late Iron Age or early Roman period through until the 15th century. Evidence for late Iron Age and early Roman activity was limited, though there was a considerable volume of residual early Roman pottery. It is likely that the site lay on the edge of a settlement at this time. In the later 2nd to early 3rd century a timber building and a large assemblage of artefacts were consistent with domestic occupation. One large ditch, recutting an earlier one, appears to have formed the north side of a rectilinear enclosure. Its backfilling towards the end of this phase is seen as representing a reversion to predominantly agricultural activity during the 3rd to 4th centuries. Although a building was constructed in this later phase, a cremation and the limited artefactual assemblage again suggested that domestic occupation was focussed elsewhere. This activity is felt to be consistent with a hamlet or farmstead, at which occupation dated from the 1st through to the late 3rd or early 4th century with a possible peak in occupation in the later 2nd to 3rd centuries.

At Pirton, a Roman metalled surface and a number of cut features survived deeply buried below alluvial deposits. Associated pottery suggested that these related to 1st century domestic occupation.

At Norton-Juxta-Kempsey extensive Roman deposits were notable for their association in the 2nd to 3rd century with large volumes of iron smithing waste. Metalled surfaces, enclosure ditches and a number of pits were recorded. Other finds, particularly pottery indicated domestic occupation accompanied the industrial activity. Subsequently, a number of timber buildings of possibly domestic character were constructed. Occupation appears to have extended into the late 3rd or early 4th century when the site was abandoned. The site seems likely to have been a large farm or hamlet, with a specialist industrial character.

Medieval deposits were present at both Strensham and at Pirton. At Strensham these related to a deserted medieval settlement close to the Church of St John the Baptist. Despite documentary evidence indicating that there was settlement at Strensham in the 10th century, there was no evidence of activity at this particular location from the end of the Roman occupation until the 12th to 13th century when enclosure ditches and a fence were associated with a small finds assemblage. Finally in the 14th to 15th century, a trackway, a number of enclosure ditches and further features were associated with a fairly large finds assemblage. These indicated that the site

probably lay on the edge of a settlement, as it had done for much of the Roman period. Beyond the 15th century, settlement appears to have moved away from the vicinity. It can be suggested from documentary and other evidence that the focus of settlement probably moved to the area around the moated site of Strensham Castle at Lower Strensham.

At Pirton, a probable lime burning oven or kiln was recorded. Along with a firepit and previously recorded scatters of stone and other debris, this can be suggested as the site of small-scale rural industry associated with the nearby medieval village at Pirton.

A strong correlation between thin scatters of Roman and medieval artefacts and fertile soils in the vicinity of the three excavated sites is probably indicative of manuring of arable land around former settlements with domestic refuse, a practice that has been widely recognised in both the Roman and medieval periods. The areas in which such scatters are absent are dominated by poorly drained heavy soils and probably represent areas of pasture. These patterns indicate that evidence of former landuse survives in the archaeological record in the County and also suggests that former populations used and enhanced soils selectively on the land surrounding their settlements.

## 2 Introduction

### 2.1 Background

Salvage recording was undertaken by the County Archaeological Service on behalf of Severn Trent Water Limited on a pipeline in the south part of the County of Hereford and Worcester (Fig 1). The Strensham to Worcester Aqueduct will form part of a new system of mains extending north to south across the County with a number of spurs running from it to the west. The pipelines are being constructed through a series of projects over a number of years and will improve the reliability of water supplies in the region. The Strensham to Worcester Aqueduct was the fifth of these projects within the county and fieldwork was undertaken over 4 months during the summer and early autumn of 1992.

The project took place within the framework for archaeological response established within a Code of Practice for Conservation, Access and Recreation issued by the Department of the Environment in July 1989, and attaching to the Water Industry Act 1991. Section 11, iv of the Code refers specifically to pipelaying and states that;

...where damage to features of archaeological interest is unavoidable, arrangements should be made for an appropriate level of investigation - by an appropriate conservation body, and subsequent publication of results.

This section of the pipeline ran from a pumping station, to the east of the village of Upper Strensham, in a northerly direction, for approximately 17km, to a reservoir and pumping station at Elbury Mount in Worcester. This linked to an existing length of the main to the south and will be extended to the north of Worcester to join a

further section of the new main at Astley.

An initial consultation phase assessed the route against existing information for the presence of known sites of archaeological interest (the County Sites and Monuments Record; Statutory Instruments 1988 no 1813). A number of known archaeological sites were, or potentially were, to be affected (Fig 2 and 3), however, except in one case, at Strensham, it was not felt necessary to consider revision of the route or specific site evaluation prior to construction.

At Strensham the pipeline route was to affect a known site, registered on the County Sites and Monument Record (SMR) as a site of archaeological interest (Statutory Instruments 1988, no 1813; ref HWCM 7708; Figs 3 and 6). This was recorded as a deserted medieval village associated with the nearby Church of St Philip and St James (HWCM 7704), to the east, and ridge and furrow, to the south and west. Apart from surviving earthworks indicating the presence of such a settlement, fieldwalking by Chris Dyer of Birmingham University, in the 1960s, had produced medieval and Roman pottery from the area.

It was initially recommended by the Service that the route be revised to avoid the site (corres dated 20/2/1990) however though some revisions were made by Severn Trent (corres dated 6/6/1990 and 21/10/1991) it was not possible to avoid the area of potential deposits totally due to other environmental considerations and engineering requirements (corres dated 8/11/1991). Consequently a programme of work comprising evaluation and excavation was devised to allow an appropriate archaeological response to be made in relation to this site. Following the completion of the excavation Severn Trent kindly funded a geophysical survey to support the results and place them better into context. The results of this work are summarised within this report however are reported in detail elsewhere (Jackson et al 1995a).

Beyond the site at Strensham the pipeline would affect known sites, though of lesser potential than that at Strensham. In addition there was the potential for previously unknown sites to be discovered, and as a result it was recommended that provision for salvage recording be made along the entire route of the pipeline. Salvage recording enables identification of any new sites revealed and recovery of information about their nature. It will also usually enhance knowledge of existing sites and provide general information regarding landuse and agricultural practice around former settlement sites. Through provision of a contingency team adequate cover was also provided for the salvage recording, through excavation, of any substantial significant deposits encountered.

Archaeological deposits were recorded at a number of sites and artefacts were recovered from many of the fields which were examined. At two locations significant deposits were revealed. At one of these (HWCM 15350; Figs 2 and 8), near Norton and lying just to the south of Crookbarrow Hill, extensive Romano-British deposits were revealed and following negotiations with the Resident Engineer a programme of salvage recording was implemented using the contingency. The results of the salvage recording are summarised in this report (Section 4.2) but are described and discussed in detail in a separate report (Jackson et al 1995b). At the other, to the east of Pirton, Roman and medieval deposits were revealed in a number of fields (HWCM 15351, 9066 and 15341/15378; Figs 3 and 7). In these cases the deposits were not extensive or particularly complex and it was possible to adequately salvage record them without using the contingency.

This report describes the results of the salvage recording at Pirton and along the rest of the pipeline and discusses them in relation to the two larger sites at Strensham and Norton along with the results of other work in the area.

The results of such fieldwork are important, not only for enhancing our knowledge of past settlement and landuse, but also for the future management of archaeology in the county. Since only a narrow area of any one site is likely to be destroyed by the pipeline, not only is it possible to effectively preserve that area through a detailed archaeological record, but it also enables the development of effective future management of what survives to either side of the pipeline. In addition by studying the results of a series of such linear developments, simple predictive models can be produced for settlement occurrence and landuse in different parts of the region. These allow a better understanding of the potential for survival of significant archaeological deposits in cases where future development may affect them.

## 2.2 Geology and topography

The pipeline basically crosses two categories of landscape; fertile or moderately fertile, well-drained land above the 25m contour rising to over 75m in Worcester, and the lower lying land of the floodplain of the Bourne Brook.

The northern half of the route, from Worcester to Pirton, falls largely into the former category with the main soil types being of the Worcester and Whimple Associations and small areas of the Brockhurst, Haselor, Spetchley and Oakley Associations. These are suited to arable cultivation or mixed use. Only two fields in this section have soils which are not suited for arable cultivation, these being of the Salop and Compton associations (HWCM 15335 and 15389). The underlying geology in this section is all of Mercian Mudstone formations.

The southern half of the route falls into two areas. The first 1.5km from the water treatment works at Strensham crosses higher ground, above the 25m contour and is occupied by fertile and well drained soils of the Bishampton, Evesham and Wick Associations, however beyond here the ground falls towards the floodplain of the Bourne Brook and for the most part, from this point until north of Pirton, soils are less well-drained and suited to mixed cultivation or pasture. Soils of the Eardiston Association predominate, with soils of the Fladbury, Oxpasture, Lawford and Denchworth Associations also present. For the most part these overlie solid geology of Lower Lias and Blue Lias, giving way to Grey Mudstones near Pirton.

Modern landuse largely reflects these different areas with arable cultivation predominant on the higher ground and permanent pasture and meadow on the lower ground, although the section from Norton-Juxta-Kempsey to Pirton included larger areas of pasture than might have been anticipated given the presence of soils of the Whimple Association however this may result from poor drainage resulting from the underlying mudstones.

## 2.3 Historical background

The historical background to the project has been studied in relation to the modern civil parishes which largely reflect the historical ones. A

total of sixteen parishes were either directly affected by the pipeline or lay within close proximity to it and the names and historical origins of each of these have been studied. Tithe and enclosure maps and field-name information have also been considered. The results of this work are summarised here.

#### Origins

Generally the modern settlements in the area which form the focii of these parishes, are typical for the region, having medieval origins which can be traced to the second half of the 10th century AD when they are named in documents for the first time.

To the south, Eckington, Strensham, Besford, Pirton, Drakes Broughton and Wadborough, and Defford can all be traced to at least 972 when they are listed as parts of the estates of the Abbey at Pershore in a charter of King Eadgar. Several of these (Strensham, Besford and Pirton) had been previously been granted to the Abbey by King Coenwulf of Mercia (796-821) but had been lost to the Abbey and at this stage were restored. This would suggest 8th century origins for these three.

Hill Croome can probably be identified first in the mid-9th century as part of the manor of Croome which may have included both Earl's Croome and Croome d'Abitot as well. Further north, the large parish of Kempsey comprised a number of manors including Norton-Juxta-Kempsey, itself comprising two manors, at Woodhall and Newland. Kempsey was held by the Abbey at Worcester, and can be traced to the late 8th century when Coenwulf granted 30 manses at Kempsey to Abbot Bulthum. Whittington, which historically also incorporated St Peter the Great, comprised a number of manors, at Whittington (first documentation 816), Battenhall (969), Timberdine (16th century but probably earlier), Barnes (14th century) and Crookbarrow (1330). These may all be earlier in origin, especially Crookbarrow which has a 13th century church, St Peters. Spetchley was freed from secular services in 816, also by King Coenwulf and finally Warndon first appears in Domesday (1086).

Although many of these may have earlier origins, this cannot be proven historically and since the pipeline has not affected the modern settlements, which largely overlie their medieval predecessors, there has not been any archaeological information to demonstrate such earlier origins.

#### Development

Nearly all of the places identified above, and known to have existed in the 10th century, are also listed as manors or berewicks (outlying estates) in Domesday (1086), though Strensham is omitted probably due to being part of the manor of Comberton which was itself held by Pershore. The lands of Pershore were by this time held by the Abbey of Westminster while Croome was part of the manor of Ripple which was held by the Bishops of Worcester.

Domesday and later the Lay Subsidy Rolls provide statistics for, and impressions of the nature of, these settlements though much is clearly omitted and clearly the records are biased towards those liable for taxation. By the 12th or 13th century most of these settlements have a church and many are likely to have had one earlier. The extents and locations of the settlements or farms registered in these documents are not clear and it should not be assumed that the settlements were where occupation is focussed today. Certainly at Strensham it seems likely that the earliest medieval occupation was around the now virtually isolated church of St John the Baptist rather than at Upper Strensham as it is

today. Strensham was the only medieval settlement affected directly by the pipeline and here, although no medieval deposits of earlier than the 12th century were identified, the settlement occupied the same site as an earlier Roman hamlet or farmstead (see below). Strensham may well be typical, with Roman settlement as well as a complex and shifting pattern of medieval settlement in the parish. Similar movement and fluctuation in settlement size and location is also likely elsewhere as rural settlement has in the past been subject to much change.

#### 2.4 Archaeological background

The archaeological background to the area is best discussed by period and with particular reference to the areas surrounding the more significant sites revealed during project.

The area crossed by the pipeline is poorly represented in the archaeological record although a number of sites are recorded on the County Sites and Monuments Record (SMR) in the vicinity including five locations on the actual line of the pipe (HWCM 551, 9066, 7708, 9761 and 9762; Figs 2 and 3). At only one of these, at Strensham, was the line of the pipe revised (HWCM 7708) however it was not possible to entirely avoid the area of archaeological interest. Otherwise these sites represented a findspot (HWCM 551), ridge and furrow (HWCM 9761 and 9762) and a scatter of building stone believed to represent a deserted medieval settlement (HWCM 9066).

As each field was to receive a substantial level of investigation, SMR numbers were issued for each field along the route prior to the start of the project (Figs 2 and 3). Other archaeological sites known in the area of the pipeline are summarised briefly here.

These fall into four groups. Firstly undated cropmarks, representing prehistoric and Roman settlement enclosures and field boundaries.

Secondly small scatters of prehistoric, Roman and medieval artefacts are known, mainly comprising flint and pottery, recovered as chance finds and from areas investigated during salvage recording on the route of two further pipelines running from Upton to Strensham (HWCM 11819, 11821-4 and 11828-9; Jackson and Hurst 1994; Fig 6), and from Strensham to Mythe (HWCM 20048 and 20049). These finds scatters probably result from the manuring of arable fields with domestic refuse from nearby settlements.

Thirdly a number of earthworks have been recorded which represent the remains of deserted medieval settlements at Strensham (HWCM 7708; Fig ), Lower Strensham (HWCM 287 and HWCM 7707), Hill Croome (HWCM 7051) and at Pirton (HWCM 9066; Fig ).

Fourthly there are many fields in which earthworks known as ridge and furrow survive. These are characteristic of medieval agricultural practice and result from the ploughing, with ox-drawn ploughs, of open fields divided into strips (Astill and Grant 1981). These particularly survive in and around Strensham, Lower Strensham and Upper Strensham all of which were medieval settlements (Fig 6). This background information demonstrates that the pipeline crosses a number of areas of different character and former landuse though the historical and archaeological differences may in part reflect varying levels of previous study and conditions for site identification and recognition.

### 3 Methodology

#### Project design

The design of the project and the methodology used was based on similar pipeline projects already undertaken by the County Archaeological Service on behalf of Severn Trent. A number of these have already been completed and the results and methodology have been published (Dinn and Hemingway 1992; Dalwood 1992; Jackson and Hurst 1994).

#### Preparation

An initial preparation period for the project allowed the collection of existing data on the archaeology, history, topography and geology of the area traversed by the pipeline. Geological maps and published survey data were used to establish the solid geology and the soils of the fields crossed by the pipeline. Ordnance survey maps provided topographical details and the pattern of modern fields and settlements. These were used to provide base maps for the recording of data in the field.

Archaeological data available for the area was studied through use of the SMR to establish the existing archaeological framework for the area through which the pipeline was to pass. Historical data was collected through primary documentary sources (eg Domesday) and through secondary sources such as the Victoria County History for Worcestershire. In addition Tithe maps and awards and the inclosure maps and apportionments for the area were studied along with plans accompanying two 19th century land sale notices, including Hoarstone Farm. This was with the aim of studying historical landuse and attempting to reconstruct the medieval field and settlement patterns in the vicinity of the pipeline from field boundaries and field names allied to topographic evidence, existing archaeological data and also documentary material. This hopefully would provide a context for the understanding of varying medieval artefact scatters resulting from the manuring of arable fields with rubbish from the settlements as had been done on an earlier pipeline (Jackson and Hurst 1994). These desk-based studies provided a framework and background for the archaeological data collected.

#### Fieldwork

Apart from the known site at Strensham where a programme of evaluation and subsequent excavation over an agreed period preceeded construction, the fieldwork was designed to fall into two clear stages, firstly recording of the stripped easement and secondly recording of the pipe trench. During the first stage the pipeline was visited during, or shortly after, removal of the topsoil. The freshly stripped area of the easement, was observed and intensively fieldwalked to record and retain artefacts in such a manner as to enable accurate plotting of the varying locations and densities of artefacts. All modern fields and each of the three sites at which recording was undertaken were allocated an individual SMR number for ease of recording and data manipulation (Figs 2 and 3).

Any surviving archaeological deposits were investigated and artefacts, if present, were collected from within them. In addition the spoil at the side of the easement was examined for artefacts. A record was also made of the current landuse and topography of each field and of soils and geological deposits revealed. In two locations (HWCM 15350 and around HWCM 15351; Figs 2 and 3), apart from at Strensham, significant deposits were present which could not be effectively recorded through the core team and programmes of salvage recording

implemented through the contingency. The methodologies for those sites were developed to suit the particular conditions of each of them and are described in the individual reports produced for them (Jackson et al 1995a and 1995b). A brief summary of the results from each of those sites is presented in this report along with the results of the work on the remainder of the route.

Due to the results of the first stage of the fieldwork (fieldwalking of the stripped easement and salvage recording of significant deposits at a number of locations) monitoring throughout pipe trenching was not felt to be justified, and so was undertaken only in those areas where significant archaeological deposits had been revealed (HWCM 7708, 15350 and 15351) or areas of possible further interest such as where the pipeline crossed streams or areas where concentrations of artefacts had been recorded but no deposits located.

#### Analysis and reporting

The final phase of the project involved the analysis of the data recovered in the field and integration of those results with the

background research. This report presents the results of the project and summarises the background, methodology and aims of the work. A separate report has been produced for both of the significant sites at which salvage recording occurred (HWCM 7708 and HWCM 15351; Jackson et al 1995a and 1995b). Finally a report on both of these sites and the pipeline in general will be produced for publication in the Transactions of the Worcestershire Archaeological Society.

#### Pottery

Pottery fabrics were identified macroscopically (with occasional use of a low powered microscope), and recorded on pro forma sheets (AS10). Fabrics are referred to by common names, and referenced to a published fabric series with detailed descriptions (Hurst and Rees 1992). Quantification of the pottery is by sherd number, unless otherwise stated.

## 4 Results and analysis

A total of 81 fields were examined during the course of construction work and of these 7 produced archaeological deposits (HWCM 7708, 9066, 15341, 15350, 15351, 15374 and 15395) and 41 produced artefacts. The remaining 33 were sterile.

### 4.1 Prehistoric

No deposits of Bronze Age or earlier date were identified, however flint finds were recorded at the excavated sites at Norton and Strensham where they were recovered as residual or unstratified material. At Norton only a flint blade flake was recovered while the flint from Strensham, though forming the largest assemblage recovered, only comprised 16 worked flints. No detailed analysis or dating were possible as there no diagnostic items present. It can only be concluded that they are representative of Bronze Age or earlier activity in the area.

Otherwise the only evidence for prehistoric activity was in the form of unstratified flint finds recovered during monitoring of the topsoil stripping. Such finds were recovered from a total of 6 fields (Appendix ). Only one concentration stands out, around the site at Strensham, where 5 of the 6 fields which produced worked flint were located

(HWCM 15352, 15353, 15359, 15367 and 15377; Fig 6). Of these the material from two of the fields to the south HWCM 15352 (1 flint) and 15353 (5 flints) were probably Mesolithic in origin, including 2 probable microliths. A side scraper was recovered from the field adjacent to the sewage works (HWCM 15377; Fig ). The Upton to Strensham pipeline also produced scatters of flint near to the sewage works (HWCM 11824, 11828 and 11829; Jackson and Hurst 1994; Fig 6) and together with the material recovered during the current project these strongly suggest the presence of prehistoric settlement in the immediate area.

Iron Age deposits were also not positively identified at any locations, though a number of the earliest deposits and associated material at Strensham (Phase 1, see below Section 4.2) were possibly late Iron Age in date. At Pirton (HWCM 15351) a sherd of middle Iron Age date was recovered (fabric 3; Fig xxxx). This was an example of 'duck-stamped' Malvernian ware (Peacock 1968, 419-21), a type of pottery in widespread use in this region. This indicates that there was Iron Age activity in the vicinity and perhaps given the early date of the Roman occupation here (see below) is suggestive of continuity of settlement from Iron Age to Roman.

#### 4.2 Roman (1st to 4th century)

##### Introduction

Roman deposits were recorded at three locations along the pipeline at Strensham, Pirton and Norton-Juxta-Kemsey. At each of these the evidence recovered has indicated the presence of settlements. At both Strensham and Norton-Juxta-Kemsey deposits were extensive. These sites have been reported elsewhere (Jackson et al 1995a and 1995b) and are only summarised here. The other site at Pirton was less extensively observed and is reported here along with Roman find spots made elsewhere along the pipeline during the watching brief.

The site at Strensham This site was previously known from earthworks and fieldwalking and, as described earlier (Section 1), a programme of works incorporating evaluation and subsequent excavation was agreed and implemented, followed by a geophysical survey of the site's surroundings. Deposits dating from the late Iron Age or Roman period through to the 15th century were recorded (Jackson et al 1995a).

Evidence for late Iron Age/early Roman (1st century) and earlier Roman (later 1st to mid 2nd century) activity was limited and comprised enclosure ditches and no clear structures or patterns of features. The finds assemblage for these phases was also slight though two environmental samples dated to the later 1st to mid 2nd century were rich in charred cereal crop remains. This apparently limited activity may however be a distorted image, especially for the earlier Roman since truncation was extensive and pottery of this date was present as residual material in many later features.

In the later 2nd to early 3rd century the presence of a timber building and the large volume of finds, particularly from one ditch, indicates that domestic occupation had spread or moved into the area of the excavation. This ditch was a recut of an earlier ditch and would appear to have formed the north side of a rectilinear enclosure recorded by the geophysical survey. Its backfilling, probably in the early 3rd century, is seen as representing a reversion to predominantly agricultural activity in the 3rd to 4th centuries. Although during this phase, a building was

constructed within the excavated area, the presence of a cremation and the limited artefactual assemblage suggests that domestic occupation was not present within the excavated area. However, occupation is again likely to have been present to the north in the zone of intensive activity identified through the geophysical survey. Environmental evidence supported this pattern with charred cereal remains best represented in the phases associated with agricultural activity and poorly represented in the period of domestic occupation.

The site has been interpreted as a small rural settlement or farmstead, probably comprising a number of enclosures containing both domestic and agricultural buildings as well as forming small fields or stock enclosures. Occupation appears to have been long-lived possibly from the late Iron Age through to the later 3rd or 4th century. The geophysical survey indicated that the excavated area lay to the south and south-west of the main area of settlement activity and the excavation results bear this out being generally suggestive of activity on the edge of an occupation area. Following the Roman period there was no evidence of activity until the 12th to 13th century (see below).

#### Norton

A previously unknown Romano-British rural settlement was revealed to the south of Crookbarrow Hill at Norton-Juxta-Kempsey, a few miles to the south of Worcester (Jackson et al 1995b). Salvage recording was undertaken over a period of approximately two weeks.

The site was observed within the stripped corridor of the pipeline easement and was clearly fairly extensive with deposits present over a stretch of about 250m. The ceramic assemblage indicated that it had been occupied from the 2nd century through to the 3rd or early 4th century. Due to the limited area investigated it is difficult to establish the type of settlement represented. Though it can be said to be rural in character, it was not clear whether the site was a single farmstead or a more extensive settlement such as a small hamlet or village comprising a number of compounds containing houses, workshops and farm buildings. The extent of the area over which deposits were present probably argues in favour of one of the latter options.

The earliest activity was the laying out of metalled yards or trackways and a number of ditches probably representing enclosures or property boundaries. Rapidly following this was a period of activity characterised by iron working waste which present in the fills of a series of ditches and gullies as well as a number of pits. In particular one pit contained an assemblage of material including iron slag and hammerscale along with charcoal, coal and fragments of furnace lining which are consistent with iron smithing in the near vicinity. This activity was of particular interest, since although such activity is common on Roman rural sites, the nearby Roman town at Worcester is known to have been a major iron smelting centre in the 2nd and 3rd centuries. Here smithing evidence has rarely been uncovered and it seems likely that bloomery iron was being produced for finishing elsewhere. Although it is highly unlikely that the site at Norton would have been a major centre for the production of finished goods, rural settlements such as this would undoubtedly have provided an important market for the iron from Worcester having smithies for the production of the many small items required on rural settlements in the area.

Apart from iron working waste, pottery was also present which indicated domestic occupation nearby. The metalled surfaces appear to have remained in use throughout this phase of activity and may have remained in use into the final phase of occupation which was

characterised by a number of rectangular posthole and timber slot buildings and associated features. Although iron working waste was present in many of these it is considered to be residual material and the buildings were more probably associated with domestic occupation or agricultural activity.

There was a wide range of Roman finds from Norton, including a large quantity of ironworking residues. The site was dated from the 2nd-3rd century. The pottery assemblage exhibited a good range of pottery forms and fabric types, including samian and amphora. Other finds included a fragment of rotary quern, and flat ceramic plates. Overall, despite the industrial character of the site, the pottery indicated that it was also domestic.

Associated environmental material was scarce however both emmer and spelt wheat grains and chaff were present along with weed seeds characteristically associated with cultivated ground.

The final area of interest lies in the association of the site with the nearby Crookbarrow Hill. The hill is likely to be a distinctively shaped natural outcrop however its shape has possibly been enhanced and the presence of prehistoric and medieval activity, on its north and east sides, along with this Roman site immediately to its south indicate that the hill has provided a settlement focus over a considerable period of time.

#### Pirton

In Pirton, close to the Bourne Brook deposits were observed in section in one field (HWCM 15351; Fig), during monitoring of the pipe trench. No deposits had been observed during stripping. A metallised surface, a cut feature beside it and a buried soil were recorded beneath nearly 0.50m of alluvial silt clay and about 0.70m below the modern ground surface.

The metallised surface (106; Fig) comprised abundant, small to medium pebbles sat directly onto the surface of the natural clay. It was approximately 3.60m in width and only 0.10-0.12m thick and a small number of finds (bone and pottery) were recovered from its surface. The metallising was observed in both sections of the pipetrench and appeared to run on a north-west to south-east alignment. On its south side it was sat in a slight depression into the natural clay while on the north side it lapped slightly down into an apparently contemporary, and similarly aligned V-shaped ditch (105; Fig). The ditch was 0.80m deep and 1.60m wide and was filled with a dark grey silty clay which was sampled for environmental remains and from which a number of finds were recovered. To the north of this and observed only in one section was a rather flat-based pit, 0.80m deep and 3.00m wide (109; Fig). This contained two fills, a light orange-grey, sandy clay (108) which appeared to form a bedding for an upper fill mainly comprising burnt stone (107). All of these deposits could be dated to the Roman period and were sealed by two layers of silty clay (102 and 103; Fig). The lower of these (103) was orange grey in colour and upper (102) was yellow brown. Neither layer contained any inclusions. These were sealed by the modern topsoil (100).

These deposits were Roman in date and probably represent a track and ditch with an associated feature. Such features may have existed away from settlement, however, quantities of pottery and charcoal recovered from the metallising and the ditch fill indicate occupation in the immediate vicinity. An environmental sample from the ditch proved to be largely sterile.

The overlying silt clay layers are felt to represent alluvial deposits resulting from flooding of the adjacent Bourne Brook, with perhaps two broad episodes of flooding suggested by the different colours of the two layers.

There was a moderate quantity of Roman pottery dating to the 1st century AD. The assemblage was, however, too small to provide more than an indication of the range of pottery types in use at this period. The main type was Severn Valley ware (fabric 12) which was the most common pottery in this region throughout the Roman period. A variation (fabric 12.2) of this occurring early in the Severn Valley ware sequence of development (Darlington and Evans 1992, 41) was also represented. Other pottery comprised mainly grey ware (fabric 14; Fig xxxx). This was well represented, whereas in later periods it is hardly present at all on Roman sites in this area. Some sherds of Malvernian handmade ware were associated which may have been of Iron Age or Roman date. All the pottery forms were domestic. There was also a possible fragment of ceramic plate.

The nature and depth of the deposits and the proximity to the Bourne Brook suggest that the site is well preserved with good potential for well stratified and possibly waterlogged deposits of considerable significance.

#### General results

Roman artefacts were recovered from a total of 7 fields as well as from the sites discussed above. The locations of these artefacts were all close to the known settlement sites and clearly can be linked to them.

A small quantity of Roman pottery was also found at HWCM 15335, 15336, 15352-5, 15359, and 15379. It is possible that the finds at HWCM 15335-6, together with nearby finds of the same date from HWCM 10292 and 10176 (below Crookbarrow Hill; D Hurst pers comm), are all related to the Norton site. They may be an indication a more extensive area associated with Roman activity which was focused on Norton.

In the vicinity of Croome Court no Roman pottery was found at HWCM 15371, and this indicates the eastward limits of a previously known pottery scatter located nearby (HWCM 7836).

### 4.3 Medieval (10th-15th century)

#### Introduction

Medieval deposits were excavated at Strensham (HWCM 7708) and also at Pirton (HWCM 9066 and 15341), though the latter were not firmly dated due to an absence of finds and may be post-medieval.

Otherwise only occasional unstratified medieval finds were recovered during monitoring of the topsoil stripping.

#### Strensham

At Strensham following the Roman settlement described above there appears to have been a gap in occupation at the site until the 12th to 13th century when enclosure ditches and a fence associated with a small finds assemblage suggest that the site was again lying on the edge of a settlement area, but away from the main occupation.

In the final phase of activity, in the 14th to 15th centuries, a trackway and a number of enclosure ditches and an absence of obvious structures

again suggest that the site remained on the edge of the main occupation area. However, a number of indeterminate cut features, a pit or posthole and a number of isolated structural features, along with a fairly large finds assemblage indicate that it is on the immediate fringes of occupation.

Beyond the 15th century settlement must have moved away from the vicinity of the site as no later features or finds were present with the exception of those of modern date. The site appears to have remained in agricultural use throughout the intervening period, a function it retains to the present day.

Documentary evidence used in combination with the results of the excavation can be used to suggest a hypothetical model for medieval occupation at Strensham. The earliest occupation would appear to have been that focussed around the Church of St John the Baptist and investigated during construction of the pipeline. This dated from the 12th or 13th century and continued through until the 15th century.

The Russell family had established themselves in the area during the later 13th century and in the late 14th century they were granted licence to crenellate a mansion at Strensham. This almost certainly refers to the moated site (HWCM 7740) at Lower Strensham about 0.5km to the west. The Russells were buried at the Church of St John the Baptist, however, it seems likely that the focus of occupation had moved to Lower Strensham by the end of the 15th century. This later occupation can probably be located to the west of the moated site where there are the earthworks of a further deserted settlement. Both this site and the site by the Church are surrounded by fields containing ridge and furrow earthworks representative of medieval open field agriculture.

The desertion of the site at Lower Strensham, with the exception of a single farm, probably occurred after the English War, in the 17th century, when the castle at Strensham is believed to have been destroyed. Following this occupation in the parish became focussed at Upper Strensham where it remains.

#### Pirton kiln/oven and DMV

An oven or kiln was observed in section during pipe trenching (HWCM 15341) near Pirton. A scale drawing was made and the structure recorded through annotations of the drawing. Unfortunately no finds were present so dating is problematic. A fire pit full of charcoal and burnt debris was also present in the field to the south (HWCM 9066). This latter site was already recorded on the SMR. Earthworks and scatters of building debris and stone had been noted as the location of a deserted medieval village. There remains the possibility that this is the case however the absence of medieval pottery among the debris noted previously and in association with either the oven/kiln or fire pit suggests that medieval domestic occupation is not represented. Medieval pottery was, however, recovered from two fields to the north, and to the east of the village of Pirton and it seems most likely that medieval settlement was located where the modern village of Pirton stands. The fire pit, oven/kiln and scatters of material associated with earthworks in HWCM 9066 and 15341 are more probably associated with small-scale industrial activity of medieval or post-medieval date. They may be associated with lime burning since there are local limestone outcrops. The lime could have been used for agricultural purposes since local soils are clayey and liming would facilitate drainage, or alternatively the lime could have been used in making mortar for building purposes.

#### General results

The remains of largely ploughed out ridge and furrow earthworks along with a former field boundary were recorded in one location (HWCM 15374). Although clearly medieval in origin these were not more closely dated due to an absence of artefacts. They provide evidence of former landuse and division.

A holloway observed between Littleworth and Hatfield (HWCM 15395) however no dating was recovered. The presence of a footpath along the line of the holloway indicates that a right of way remains along what had clearly at one time been a fairly well used route, probably linking Hatfield and Littleworth.

There was a small quantity of medieval pottery from HWCM 15343, 15351, 15353, 15354, 15355, 15359, 15374, 15379, 15380, and 15611. The pottery was mainly of 13th-16th century date except in the case of an 11th-12th sherd of Cotswolds ware from HWCM 15354. There was a fragment of medieval floor tile from Norton (HWCM 15350).

The absence of medieval finds from HWCM 9066 must cast some doubt on the identification of a deserted medieval village here.

#### 4.4 Post-medieval (16th-20th century)

A ditch running parallel to the holloway between Littleworth and Hatfield was recorded (HWCM 15395). Post-medieval finds in the fill of the ditch indicated that this had gone out of use in this period, however, it may be medieval in origin since the holloway is believed to be of such a date.

Post-medieval finds (mainly pottery, but also flat roof tile and other material) were commonly found along the length of the pipeline (HWCM 15335-6, 15343, 15345, 15348, 15353-4, 15356-9, 15366-7, 15374, 15379, 15380-4, 15386-8, 15390-6, 15398, 15606-12, and 15615. This included some waste from the Worcester porcelain industry from the vicinity of Worcester (HWCM 15610), but also from as far away as Littleworth, 6km to the south-east of Worcester (HWCM 15386, 15394, 15398).

## 5 Discussion and conclusions

The pipeline has produced important evidence for former settlement and landuse along a long but narrow corridor across the south part of the County. In particular, the project has provided significant information on the patterns of Roman and medieval occupation and associated economic activity in this part of the County.

### Prehistoric

There were few earlier prehistoric finds, except for a small number of flints. The only slight concentration was around Strensham where distribution of flint suggests prehistoric occupation may lie to the south-west of the Church of St John the Baptist. Iron Age finds were also rare, with only a single sherd clearly of this date recovered at Pirton. However, Iron Age pottery has not often been found during fieldwalking in Worcestershire, and is likely that it may not survive long in the ploughsoil.

### Roman

Roman occupation has been recorded at Strensham, Pirton and Norton-Juxta-Kempsey, all of which appear to have

been small rural settlements. Both Strensham and Norton have been interpreted as farmsteads or hamlets. They are characterised by enclosure ditches and timber buildings associated with principally 2nd through to later 3rd or early 4th century occupation. However, at Strensham earlier Roman activity was evidenced while Pirton would appear from the limited evidence available to be of mainly 1st century date. Economically none of the settlements was isolated, however, contacts appeared to be limited and as with most rural settlements in the County locally produced items dominated the assemblages. Probably the most interesting discovery was the iron smithing at Norton-Juxta-Kempsey. This indicated a more extensive economic function for the settlement and suggested that iron goods may have been produced here for a fairly wide rural market using iron produced at the nearby major iron smelting centre of Worcester.

The environmental evidence from these sites has contributed to a growing understanding of cereals and crop processing on small Roman rural settlements in the County as well as some information on domesticated animals.

Roman finds scatters were relatively common in the fields to either side of these sites. The scatters also correlate closely with the areas of more fertile soils along the route and have been interpreted as the result of manuring arable land with midden material (which would have included domestic refuse) from the settlements. This is a commonly recognised practice, though one which large area surveys (eg Gaffney and Tingle 1989) have shown to be a complex process.

In contrast, the areas between the sites have produced little Roman material. Soils between Strensham and Pirton are generally more clayey on the lower lying land close to the Bourne Brook. These are largely used as pasture today and it seems likely that former use was also pastoral. One exception stands out, between Pirton and Norton, where the soils are relatively fertile but did not produce any Roman material as might have been expected. The reasons for this are unclear but it may be that they were of some distance from the nearest settlement and thus were not regularly manured with domestic refuse.

Historically in the County, few Roman rural sites have been investigated, though in recent years developments have somewhat redressed this situation. Despite this, evidence remains highly fragmentary and there has been little opportunity for synthetic studies. As a result, few conclusions can be drawn except in that it is clear that rural settlement was extensive and that land was fairly intensively exploited in many parts of the County. Elsewhere extensive surveys have demonstrated that the patterns of Roman landscape and settlement were complex and considerable regional variation has been observed (Miles 1989), and clearly more work is required before an understanding can be developed of the patterns in this County.

Post-Roman and late Saxon

No deposits or finds of clearly Anglo-Saxon date were recovered, and it is likely that as in the case of Iron Age pottery, Anglo-Saxon pottery may not survive well in the ploughsoil. Its absence cannot, therefore, be taken as indicative of the absence of activity and documentary evidence clearly demonstrates that most of the parishes along the pipeline had some form of settlement by the 10th century, even if none were directly affected by the route. A single sherd of Cotwolds ware was recovered from Pirton which may be of pre-Conquest date.

#### Medieval settlement

Medieval settlement was only identified at Strensham where deposits of 12th to 15th century date were recorded.

These provided only limited information about the character of the settlement and its economy since they appeared to be peripheral to the main occupation area. Despite this the dating evidence was important as it has enabled the production of the model for the development and shifting focus of medieval settlement at Strensham as described previously.

At Pirton deposits of probably medieval date have been related to small-scale rural industrial activity, possibly lime burning, associated with the nearby village of Pirton. Ridge and furrow and a holloway identified elsewhere on the route have been associated with medieval landuse and communications.

Unstratified medieval pottery occurred in about the same number of fields as Roman pottery, but was present in a smaller quantity overall. As with the Roman material this is felt to represent manuring scatters and again the distribution of this material showed a strong correlation with contemporary settlements and soils suited to arable use as well as with areas of ridge and furrow.

#### Post-medieval

Post-medieval finds were more widespread, and occurred throughout most of the length of the pipeline, except for gaps through north Strensham, Defford, and Croome. In the latter case the pipeline traverses a park, and this use is likely to have limited any arable farming. The waste from the porcelain industry is unexceptional as it is well attested that this material was sold for hard core by the Worcester factories.

In conclusion, the area through which the pipeline passes has been demonstrated to have a long and complex history of human exploitation and occupation in which landuse and settlement patterns may have been dictated by an understanding of the best use for the available resources. Although the specific location of settlements within this landscape has varied, there appears to be a considerable degree of continuity of landuse and broad settlement focus, which continues to the present day.

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The project was co-ordinated by Robin Jackson who led the fieldwork except at Strensham where fieldwork was led by Derek Hurst. Assistance on site in all weathers and conditions came from Dr Chris Dyer, Tony Clark, Dave Coombes, Luke Fagan, Paul Godbehere, Charlie Miller, Doug Moir, Louise Muston, Mike Napthan, Clare de Rouffignac, Nigel Topping, Andy Towle and Dave Wichbold. Clare de Rouffignac devised the environmental sampling strategy and undertook preliminary processing and assessment.

The report was produced by Robin Jackson (structural analysis and overview), Derek Hurst (artefactual analysis on all sites except Strensham), Stephanie Ratkai (artefactual analysis at Strensham) and Elizabeth Pearson (environmental analysis). Specialist analysis and reporting was undertaken by Brenda Dickinson (samian), Don Mackreth (brooch), Robin Jackson (flint) and Stephanie Pinter-Bellows (cremation and animal bone). The report illustrations were produced by Carolyn Hunt and Steve Rigby.

The project was initiated by Simon Woodiwiss (Principal Field Archaeologist) who also edited the report.

## 7 Personnel

The fieldwork was co-ordinated and supervised by Robin Jackson.

Fieldwork at Strensham was led by Derek Hurst.

Assistance was provided by members of the Core Team and Contingency Teams: Tony Clark, Dave Coombes, Luke Fagan, Paul Godbehere, Charlie Miller, Doug Moir, Louise Muston, Mike Napthan, Nigel Topping, Andy Towle and Dave Wichbold.

Clare de Rouffignac devised the environmental sampling strategy and undertook preliminary processing and assessment.

Finds analysis and reporting for Strensham was undertaken by

Stephanie Ratkai and for Norton and other sites by Derek Hurst.

The report was produced by Robin Jackson in conjunction with Derek Hurst and Stephanie Ratkai (finds) and Elizabeth Pearson (environment).

The report illustrations were produced by Carolyn Hunt and Steve Rigby.

The project was set up by Simon Woodiwiss (Principal Field Archaeologist) who also edited the report.

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## 9 Abbreviations

Pottery	No	Weight (kg)
Roman	35	0.683
Medieval	2	0.030
Building materials		
Tile	3	
Ceramic object	1	
-----		
Totals	41	0.713kg
-----		

Table 2 Finds quantification. All sites except HWCM 7708, 15350, and 15351

Pottery	No	Weight (kg)
Roman	32	0.334
Medieval	17	0.175
Post-medieval	203	1.976
Clay pipe	21	

Building materials		
Tile	137	
Brick	17	
Other ceramic		11
Metalwork		
Iron	3	
Glass		
	22	
Other finds		
Flint	3	
Slag	1	
-----		
Totals	467	2.485kg
-----		

Worcester pipeline

Pottery	No	Weight (kg)
Roman	2223	30.368
Medieval	183	2.110
Post-medieval	220	2.155
Clay pipe	21	
Building materials		
Tile	272	
Brick	20	
Other ceramic object		29
Fired clay	35	
Stone objects	3	
Metalwork		
Iron	94	
Copper alloy	4	
Slag		62.508
Glass	25	
Other finds		
Flint	5	
Coal	10	
-----		
Total (all sites)	3144	97.191kg
-----		

Summaries of finds from sites along the Strensham to Worcester pipeline

HWCM 15335

A single sherd of Severn Valley ware, and of post-medieval pottery. Flat roof tile.

HWCM 15336

A single sherd of Severn Valley ware, and post-medieval finds. Flat

roof tile, and clay pipe.

HWCN 15343

A single medieval sherd, otherwise all finds are post-medieval. Flat roof tile, brick and glass.

HWCN 15345

Larger finds assemblage than usual includes pottery of dating from the 13th-14th century to 19th-20th century. The 17th-18th century is well represented, and there is also early porcelain possibly of this period. Flat roof tile, brick, and clay pipe.

HWCN 15348

Post-medieval pottery (mainly 18th century finds). Flat roof tile, clay pipe, and glass.

HWCN 15352

Flint and a single sherd of Severn Valley ware. Flat roof tile.

HWCN 15353

The pottery is mainly of Roman and medieval date, with a small amount of 18th century wares. Fragment of possible curfew. Flat roof tile.

HWCN 15354

The pottery was all of Roman and medieval date, and included a sherd of Cotswolds ware (fabric 57) of the 11th-12th century, which has rarely been found in a rural context. The building materials (flat roof tile and ridge tile) also included examples of medieval date suggesting a medieval building in the vicinity. Post-medieval brick and glass.

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HWCN 15355

Roman and medieval pottery.

HWCN 15356

Roman pottery. Roof tile and brick.

HWCN 15357

Roof tile.

HWCN 15358

19th-20th century pottery. Roof tile.

HWCN 15359 Roman and medieval pottery. Roof tile.

HWCN 15365

Post-medieval pottery (mainly 18th century).

HWCN 15366

Post-medieval pottery (mainly 18th century). Clay pipe.

HWCN 15367

Post-medieval pottery, and brick.

HWCN 15374

Flint. Medieval and post-medieval pottery.

HWCN 15379

Flat roof tile.

HWCN 15379

Roman and medieval pottery. .

HWCM 15380

Medieval and post-medieval pottery. Flat roof tile.

HWCM 15381

Post-medieval pottery (?17th century).

HWCM 15382

Flat roof tile and brick.

HWCM 15383

Post-medieval pottery. Brick and glass.

HWCM 15384

Post-medieval pottery.

HWCM 15386

Post-medieval pottery. Pottery kiln waste probably from the Worcester porcelain industry. Clay pipe.

HWCM 15387

Post-medieval pottery. Brick, clay pipe, and glass.

HWCM 15388

Post-medieval pottery.

HWCM 15390

Post-medieval pottery.

HWCM 15391

Post-medieval pottery. Clay pipe.

HWCM 15392

Post-medieval pottery.

HWCM 15393 Post-medieval pottery. Field drain.

HWCM 15394

Post-medieval pottery (mainly 18th century), including waster sherds from the Worcester porcelain industry. Flat roof tile, brick, and kiln waste probably from the Worcester porcelain industry.

HWCM 15395

Post-medieval pottery. Glass.

HWCM 15396

Post-medieval pottery.

HWCM 15398

Post-medieval pottery, including wasters from the Worcester porcelain industry. Flat roof tile, kiln waste probably from the Worcester porcelain industry, and glassy slag.

HWCM 15606

Post-medieval pottery. Flat roof tile, clay pipe, and glass.

HWCM 15607

Post-medieval pottery. Flat roof tile, and clay pipe.

HWCM 15608

Post-medieval pottery. Modern glass.

HWCM 15609

Post-medieval pottery. Flat roof tile.

HWCM 15610

Post-medieval pottery, including wasters probably from the Worcester porcelain industry. Flat roof tile.

HWCM 15611

Medieval and post-medieval pottery (18th century or earlier, including gravel tempered ware from north Devon). Flat roof tile, and clay pipe.

15612

Post-medieval pottery (18th century). Flat roof tile.

HWCM 15615

Post-medieval pottery. Flat roof tile, brick and clay pipe.

HWCM	OS parcel	Geology Deposits	Soils	Landuse	Finds		
					Summary description		
					Prehistoric	Roman	Medieval
	Post-medieval	Roman medieval		post-medieval			

7708 9544

9066 8600

15335 7700

15336 6600

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15350	3200	MM	Wo/Wh	A/M	Yes	Yes	Yes	Yes
	Yes No	Yes	Roman occupation site					

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