Lutterworth Road, Lutterworth, Leicestershire

Archaeological Excavation Report

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Lutterworth Road, Lutterworth, Leicestershire

Archaeological Excavation Report

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Summary

Oxford Archaeology (OA) was commissioned by CgMs Consulting to undertake an archaeological excavation across a medieval mill leat on land to the north of Lutterworth Road, Lutterworth, Leicestershire.

The mill race relates to St John's Hospital that is recorded to the west of the site. The Hospital is believed to have been founded pre-1218 and dissolved post-1577. Two watermills known as Spittle Mills and a wind mill and a malt mills are believed to be associated with the Hospital. We know the Spittle Mills was operating in 1631, and appears to have survived on the site until relatively recent times. The mill leat was first mentioned in the mid-16th century, and the existing parish boundary follows its course as identified from historical mapping. It is possible that the parish boundaries were laid down at Domesday when the land in that area was divided between Lutterworth to the west and Misterton to the east.

The excavation did not reveal any features or fills that could be dated to the medieval period. The excavation was, however, successful in identifying the later phases of the mill race from the 18th or 20th centuries onwards to the end of its working life and final infilling phase. The lack of well dated environmental remains from the medieval period means it was not possible to indicate the environmental setting of the mill or its races. The later post-medieval fills from the leat would indicate flowing water conditions with muddy substrata were maintained within an open predominantly tree-less agricultural landscape. The few charred cereal grains that were recovered from the leat were likely windblown and only hint at agricultural production within the wider area.

The route of the medieval mill race is still undetermined and no evidence was revealed during the excavations. It is possible that the later recutting of the leat has removed all evidence of this or that the medieval route followed a different, perhaps shorter path. It is also possible due to shifting river patterns that the mill was originally located on or closer to the river. A longer mill run may have been required in the post-medieval period due to shifting river systems.

Acknowledgements

Oxford Archaeology would like to thank Mike Dawson, CgMs Consulting, for commissioning this project. Thanks are also extended to Richard Clark, who monitored the work on behalf of Leicestershire County Council, for his advice and guidance.

The project was managed for Oxford Archaeology by Carl Champness. The fieldwork was directed by Robert Macintosh, who was supported by David Pinches. Thanks are also extended to the teams of OA staff that cleaned and packaged the finds under the management of Leigh Allen, processed the environmental remains under the management of Rebecca Nicholson, and prepared the archive under the management of Nicola Scott.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) was commissioned by CgMs Consulting to undertake an archaeological excavation of a medieval mill leat on land to the north of Lutterworth Road, Lutterworth, Leicestershire. The works was designed to investigate and characterise the medieval mill leat associated with The Hospital of St. John, in Lutterworth.

1.1.2 The work was undertaken as a condition of planning permission (Condition 5, 16/00980/FUL.) for a proposed new residential development. A written scheme of investigation was produced by CgMs Consulting (2017), detailing the Local Authority's requirements for work necessary to inform the planning condition. The work follows on from three previous phases of investigation in the form of archaeological desk-based assement (CgMs 2013), Geophysical survey (Stratascan 2014) and evaluation trenching (ULAS 2014).

1.1.3 All work will be undertaken in accordance with local and national planning policies. The WSI follows specifications set out in Leicestershire County Councils (LCC) generic briefs for archaeological fieldwork and the brief set out by Historic England's Scientific Advisor. Leicestershire Museums Service has allocated the following site code to the archaeological works: X.A47.2017

1.1.4 All work was undertaken in accordance with the Chartered Institute for Archaeologists' *Standard and guidance for archaeological field evaluation* (CIfA 2014) and the National Planning Policy Framework.

1.2 Location, topography and geology

1.2.1 The site lies on land to the north of Lutterworth Road to the east of Junction 20 of the M1 motorway. The site is bounded to the north by the River Swift and to the west by former railway cuttings. The site is centred on NGR: SP 548 840 (Fig. 1).

1.2.2 The area of proposed development currently consists of agricultural land at c. 110m OD gently sloping northwards to the River Swift.

1.2.3 The geology of the area is Blue Lias Formation and Charmouth Mudstone Formation (undifferentiated) – Mudstone bedrock, overlain by superficial deposits of Alluvium – Clay, Silt, Sand and Gravel (British Geological Survey Online, Geology of Britain Viewer, 2016).

1.3 Archaeological and historical background

1.3.1 The archaeological and historical background to the site has been described in detail in an archaeological desk-based assessment (CgMs 2013) and is only briefly summarised below:

Mesolithic, Neolithic and Bronze Age

1.3.2 There is evidence of Mesolithic and Neolithic-Bronze Age activity from the area. Fieldwalking surveys of the Swift valley by the Lutterworth fieldwork group have located high density lithic scatters in the vicinity.

The Iron Age and Roman periods

1.3.3 There are cropmarks and geophysical anomalies of enclosures of likely Iron Age and Roman periods within the vicinity. The evaluation offered the possibility of contributing to knowledge on Iron Age – Roman transitions in rural settlement, landscape and society.

Medieval Period

1.3.4 The area is crossed by a mill leat leading to the former St Johns Mill, which former part of the estate of the Hospital of St John the Baptist at Lutterworth, which was built in or shortly before 1219, when Bishop Hugh of Lincoln permitted divine offices to be celebrated at the newly erected hospital. The estate derived from lands at Lutterworth, consisting of two watermills, and various nearby properties. The hospital was said to have been founded to maintain a priest and six poor men, and to provide hospitality for poor wayfarers, but in 1546 there were no poor in the hospital, the master was not resident, and the buildings, including the chapel, were greatly dilapidated.

1.3.5 It was anticipated that the excavation may contribute towards research into the development of milling.

1.4 Previous works

1.4.1 The Leicestershire and Rutland Historic Environment Record indicates that the proposed development lies in a rich archaeological landscape, with extensive evidence from lithic scatters of Mesolithic, Neolithic and Bronze Age date. A large quantity of prehistoric flint material (c. 200 pieces) was recovered from fieldwalking by the Lutterworth Fieldwork Group within the application area, which suggests activity during these periods. Geophysical anomalies and cropmarks suggest Iron Age-Roman enclosures in the vicinity while the north of the site is crossed by a mill leat leading to the former St Johns Mill to the west. Fieldwalking has also recovered numerous post-medieval clay pipe fragments.

1.4.2 A survey was carried out by Stratascan in 2014. The survey produced evidence of a series of parallel features aligned north-east to south-west across the northern part of the site (Stratascan 2014), which corresponded with the mill leat identified on historical maps.

1.4.3 An archaeological evaluation was carried out as part of the proposed development in the area of the medieval mill leat by the University of Leicester Archaeological Services (ULAS) in 2014. A 40m x 1.8m was excavated in the area of the mill leat at the northern part of the site which produced evidence of the mill leat associated with the medieval St. John's Hospital, which was situated some distance to the west of the site in the form of several shallow parallel ditches, which most likely represented open water

channels, and was evidenced by fresh water molluscan evidence. However, no earthworks remained (ULAS 2014, 17).

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The aim of the excavation was to investigate and characterise the features and deposits associated with the mill leat and to take environmental samples where appropriate for scientific and palaeoenvironmental analysis.

2.2 Methodology

2.2.1 A 4m by 30m trench was excavated across the mill leat identified during the previous investigation at the site (Fig. 2). Its precise location was based on geophysical anomalies and cartographic evidence.

2.2.2 The trench was excavated using a combination of machine and hand digging. The trenches were excavated under constant archaeological supervision and ceased at the identification of significant archaeological remains, or where natural geology was encountered first. When machine excavation had ceased the trench was cleaned by hand and archaeological deposits investigated and sampled.

3 RESULTS

3.1 Introduction and presentation of results

3.1.1 The results of the excavation are presented below, and include a stratigraphic description of the floodplain and leat sequences. The full details of the leat sequence with dimensions and depths of all deposits can be found in Appendix A. Finds data and spot dates are tabulated in Appendix B.

3.2 General soils and ground conditions

3.2.1 The soil sequence differed across the excavation area. In the north of the field, the natural geology was variable with mudstone (107, 108, 110 and 111) and outcrops of blue lias deposits (109) overlaid by a floodplain alluvial sequence and ploughsoil; In the southern part of the trench, the mudstone rose up and was overlain directly by weathered subsoils and ploughsoil.

3.2.2 Ground conditions throughout the excavation were generally good, and the trench remained dry. Archaeological features, where present, were easy to identify against the underlying natural geology.

3.3 The floodplain and mill leat sequence (Plates 1 and 2)

3.3.1 A trench was excavated across the line of the leat and along the edge of the gravel terrace and floodplain, as identified in the geophysical survey as an anomaly (Fig. 2). The upper fills of the backfilled leat were identified below topsoil (106). Following the excavation of the leat, the full sequence was recorded and sampled for environmental remains.

3.3.2 The leat cut (100) was fully revealed, revealing a cut over 6m wide and 0.46m in depth, with a concave base with gradually sloping sides (Fig. 3). The date of the construction of the leat is unknown although its existence is known from at least 17th-century when it was first mentioned in documentary sources. It is tempting to identify the leat as the same one feeding the mill of St Johns Hospital, which could suggest that the parish boundary (which the leat follows) was also potentially established during this period.

3.3.3 A buried organic clayey silt deposit (104) was identified at the base of the floodplain sequence at 0.46m, overlying the natural geology. A small fragment of animal bone was recovered from the base of the deposit, but no dating evidence was recovered. This was overlain by a structure-less greyish blue silty clay alluvial deposit (105) that was sealed by modern topsoil/ploughsoil. The gleyed nature of the floodplain sequence would suggested it formed in water-lain deposits that only dried out more recently through modern drainage.

3.3.4 The mill leat (100) was dug through the natural alluvial sequence (105) and partly truncated the basal organic deposit (104). The leat was filled with a dark brownish alluvial silt (101) at it base that contained frequent flecks of charcoal. Post-medieval brick fragments were recovered from this deposit. This was overlain by light yellowish brown alluvial silt (102) that contain frequent snail fragments. Overlying this was a mid yellowish brown silty clay deposit (103) that also contained shell fragments and single

piece of post-medieval pottery. The leat and floodplain sequences were sealed by modern ploughsoil (106).

3.4 Finds summary

3.4.1 Very limited evidence was recovered from the floodplain sequence and the only material recovered was two fragments of late post-medieval pottery, CBM and a small fragment of animal bone.

3.5 Environmental summary

3.5.1 The assessment of environmental material can be found within Appendices C and D, and is briefly summarised below:

Charred plant remains

3.5.2 Seven samples were taken sequentially through the fills of the leat sequences, in 5cm incrementsto a depth of 0.35m. Small quantities of charcoal and anthracite fragments were noted within all of the samples but none of the charcoal was identifiable due to its small size. A single charred grain of wheat (*Triticum* sp.) and fragments of charred oat (*Avena* sp.) awns were also present in the base of the leat. Modern waterlogged remains were recovered from the upper samples suggesting that the sequence had recently dried out.

3.5.3 The single wheat grain and oat awn fragments from fill 104 at the base of the feature may be of earlier date and is consistent with the small amount of charred grain found in the earlier evaluation (Small 2014). These grains are likely to derive from windblown material and are of very limited interpretative value.

Snail analysis

3.5.4 The incremental samples were also examined for the preservation of land and freshwater mollusca.

3.5.5 Shell preservation was generally good through the sequence, although a higher degree of fragmentation was noted for the bivalves. All of the samples produced shell assemblages of similar character. The samples were dominated by freshwater taxa, particularly flowing water species. Occasional ditch species and possible slum species were also present. Terrestrial species were present in small numbers including marsh species, catholic species and open country. The shade-demanding component was largely of species at the catholic end of the scale.

3.5.6 Overall the character of the assemblages suggests a clean, well-oxygenated aquatic environment with a slow to moderate flow regime throughout and a muddy substrate. The occurrence of catholic freshwater and a range of terrestrial species suggest some vegetation and silting along the margins and banks of the feature, which may have included reeds, sedges and long grasses, perhaps within a wider more open environment. There is no real indication of dense vegetation such as woodland or scrub in the immediate vicinity. There is no evidence of significant periods of drying

and desiccation within the leat channel and it appears to have been a permanent body of water.

4 DISCUSSION

4.1.1 The excavation at Lutterworth was only partially successful in achieving its stated aims. No traces of the medieval leat associated with the Hospital Mill could be identified, perhaps due to regular cleaning-out of the leat. The limited quantity of medieval material that was recovered from the wider area, does however indicate some activity at this time in the area. The excavation was, however, successful in identifying the later phases of the mill race from the 18th or 20th centuries onwards to the end of its working life and final infilling phase.

4.1.2 Equally the environmental evidence recovered from the excavation related to this phase of later infilling rather than the medieval period. The open agricultural landscape indicated by the environmental evidence is consisting with that shown on the historical mapping.

4.2 Mill leat

4.2.1 The results of the excavation confirmed the leat was over 6m wide and less than 0.5m in depth. It was constructed of a simple hand-dug ditch with a concave base and gently sloping sides. No stone or metalling was used to reinforce its banks, and post-medieval material was recovered from its basal fills indicating its last phase of recutting.

4.2.2 The parish boundary is still located along the line of the leat, and this line corresponds well with the edge of the gravel terrace. Although not demonstrably medieval in date, it may follow a medieval alignment. The leat must have undergone several phases of re-digging to maintain enough of a flow of water to power the water wheel. The re-digging of the leat along its original alignment may have removed any medieval fills including any finds which may have accumulated during the use of the feature.

4.2.3 The lack of well dated environmental remains from the medieval period means it was not possible to indicate the environmental setting of the mill or its races. The later post-medieval fills from the leat would indicate flowing water conditions with muddy substrata were maintained within an open predominantly tree-less agricultural landscape. The few charred cereal grains that were recovered from the leat were likely windblown and only hint at agricultural production within the wider area.

4.3 St John's Hospital Mill (Spittle Mills)

4.3.1 The mill race relates to St John's Hospital, watermills known as Spittle Mills and a wind mill and a malt mills are believed to be associated with the Hospital. The mills and ownership of properties were the main source of income for the Hospital.

4.3.2 We know the mill was operating in 1631, when a dispute erupted over the rights to grind grain from Lutterworth with the Lord of the manor's mills, the Lodge Mills, located some distance down the River Swift at Morebarnes. A comprise was struck over the arrangement of grinding the corn from Lutterworth. By the 18th-century both mill complexes were in the same ownership, leading to a monopoly position being lodged against the mills. The monopoly was finally broken in 1758 at Leicester assizes (Goodarce 1973).

4.3.3 The route of the medieval mill race is still undetermined and no evidence was revealed during the excavations. It is possible that the later recutting of the leat has removed all evidence of this or that the medieval route followed a different, perhaps shorter path. It is also possible due to shifting river patterns, that the mill was originally located on or closer to the river. A longer mill run may have been required in the post-medieval period due to shifting river systems.

4.3.4 Based on the plan of J.H. Franks' estate from 1868, which is based on this earlier tithe map, we know the mill race transected the northern part of the site during this period. The surrounding fields are shown to be agricultural in nature with no signs of any development of the site. The position of the depicted mill race corresponds well with the results of the geophysical survey and archaeological investigations.

4.3.5 By 1883 the fields comprising the site and Spittle Mill were up for sale from the Frank's Estate described as grass meadow. They were being sold with buildings to the south of the mill described as 'Further Dog Yard and Buildings'. The mill, comprised 'a capital dwelling house...containing…four bedrooms…hall, parlour, sitting room, kitchen, dairy and brew-house. The valuable steam and water corn mill of four floors, with overshot wheel, driving three pairs of stones, engine house and boiler and all necessary machinery and appliances'.

4.3.6 The 1886-1887 OS map shows the site comprising a number of fields with the mill race, which also acts as the parish boundary between Lutterworth to the west and Misterton to the east. A mill dam is marked on the mill race to the west of the site. The mill is labelled as Spital Corn Mill.

4.3.7 By the 1904 OS map, the mill race has been removed consistent with the excavation results but its route remains marked as the parish boundary.

4.4 Recommendations

4.4.1 Based on the limited results of the excavation a short note, probably within the regional fieldwork round-ups, is suggested as an adequate level of publication. This report will be deposited with the Leicester HER and made available as an online report.

APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Leat Trench						
General description					**Orientation**	NW-SE
Trench Sequence					**Length (m)**	30
					Width (m)	4
					Avg. depth (m)	0.53
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
100	Cut	6.36	0.46	Mill leat ditch		
101	Layer	-	-	Fill of leat	CBM	
102	Layer	-	-	Fill of leat	Pottery and CBM	
103	Layer	-	-	Fill of leat	Pottery	
104	Layer	-	0.46	Organic alluvium	Animal bone	
105	Layer	-	-	Light grey alluvial silty clay		
106	Layer	-	0.30	Topsoil /ploughsoil		
107	Bedrock	-	-	Mudstone		
108	Bedrock	-	-	Mudstone		
109	Bedrock	-	-	Blue Lias		
110	Bedrock	-	-	Mudstone		
111	Bedrock	-	-	Mudstone		

APPENDIX B FINDS REPORTS

B.1 Pottery, CBM and animal bone

By John Cotter

Context	Count	Weight (g)	Material
101	2	643	CBM
102	1	2	Pottery
103	1	2	Pottery
103	1	10	CBM
103	1	2	Glass
104	1	8	Animal bone

Table 1: Finds compendium

B.1.1 Two sherds of post-medieval or modern earthenware and white ceramic, were recovered from contexts 102 and 103, which are believed to be part of what was originally a medieval mill-leat. Two fragments of ceramic building material and glass fragments were also found in the same contexts (Table 1).

B.1.2 The dating of the ceramic building material, which includes at least one example of tile, is hampered by the lack of diagnostic features. The tiles and/or brick appear to be hand-made, and the fabric suggest a date somewhere between the 16th to mid-18th centuries.

APPENDIX C ENVIRONMENTAL REPORTS

By Rebecca Nicholson

C.1 Charred and waterlogged plant remains

C.1.1 Seven samples were taken sequentially through the fills of the leat, in 5cm increments. Two litres of each sample were processed using the wash over technique, with both the flots and residues collected on 250µm meshes and kept wet to facilitate preservation. The flots were then scanned in their entirety using a binocular microscope at approximately x10 magnification.

C.2 Results

C.2.1 Very little plant material was present, with the majority being modern roots and indeterminate fibrous material (Table 2). Sample <1> from context (103) at the top of the sequence, produced the majority of waterlogged (uncharred) plant remains, however the seeds were in poor condition, in many cases appearing squashed and distorted or otherwise damaged. Some seeds, especially those of the Caryophyllaceae, were heavily mineral encrusted making a full identification difficult. Fungal fruiting bodies and demonstrably modern nematode eggs were extremely common in the uppermost samples, and sample <1> also contained modern insect fragments.

C.2.2 Small quantities of charcoal and anthracite fragments were noted within all of the sample flots but none of the charcoal is identifiable due to its small size. A single charred grain of wheat (*Triticum* sp.) and fragments of charred oat (*Avena* sp.) awns were also present in sample <7> which is the lowest of the incremental samples.

C.3 Conclusion

C.3.1 The majority of the plant material is likely to be modern, especially in the uppermost samples, and the sandy nature of the soil has probably facilitated the movement of material. The small amount of charred material in the upper part of the sequence is also likely to be intrusive, but the single wheat grain and oat awn fragments from sample <7> from fill 104 at the base of the feature may be of earlier date and is consistent with the small amount of charred grain found in the earlier evaluation (Small 2014). These grains are likely to derive from windblown material and are of very limited interpretative value.

Sample No		1	2	3	4	5	6	7
Context No		103	103	102	102	101	101	104
Depth from top of section		0-5cm	5-10cm	10-15cm	15-20cm	20-25cm	25-30cm	30-35cm
Processed sample volume (L)		2	2	2	2	2	2	2
Flot volume (ml)		<5	<5	<5	<5	<5	<5	<5

Charred Material								
Cereal grain								
cf Triticum sp.	wheat							1
Chaff								
Avena sp.	oat awns							3*
Wild Species								
Vicia/Lathyrus sp. <2 mm	vetch/vetchling/tare, etc				1			
Other								
Indet	seed/fruit						1	
Uncharred Material								
Wild Species								
Rumex sp.	docks	1						
Caryophyllaceae	pink family	22	1					
Chenopodium sp.	goosefoots	4					1	
Amaranthaceae	goosefoot family	18	3*		1			
Sambucus nigra	elder	2	2		1		1	
Other								
Indet	seed/fruit	2	3					
Indet	Possible seed capsule	5*						7*
*Indicates no of fragments								

Table 2: Plant remains

- Indicates number of fragments

APPENDIX D MOLLUSCA ANALYSIS

By Liz Stafford

D.1 Introduction

D.1.1 Seven samples were examined for the preservation of land and freshwater mollusca. The samples derive from an infilled leat and were taken in 0.05m increments through four contexts (101, 102, 103 and 104), to a depth of 0.35m.

D.2 Method

D.2.1 Between two and six litres of sediment was processed for each sample. The sediment was floated onto 250µm mesh and residues retained to 500µm. Both flots and residues were air-dried and identifiable whole shells and apical fragments extracted under a low power binocular microscope. Shells were identified and counted with the aid of a modern reference collection, where possible to species level. Nomenclature follows Anderson (2005) and habitat information follows Ellis (1926) Evans (1972), Kerney (1999) and Boycott (1936).

D.3 Results and Interpretation

D.3.1 The results of the shell counts are presented in Table 3. Shell abundance was moderate in five of the samples and two samples, <1> and <7>, contained no shell. Shell preservation was generally moderate to good, although a higher degree of fragmentation was noted for the bivalves. All of the samples produced shell assemblages of similar character. The samples were dominated by freshwater taxa, particularly flowing water species *Valvata piscinalis* and *Bithynia tentaculata*. Other flowing water species included the river limpet *Ancylus fluviatilis*. Occasional ditch species included *Valvata cristata* and *Anisus* cf. vortex, although it is possible the slum species *Anisus leucostoma* was also present. Catholic freshwater species made up a smaller proportion of the assemblages, *Bathyomphalus contortus*, *Gyraulus albus* and *Lymnaeidae*. The latter included *Radix balthica*. Terrestrial species were present in small numbers including marsh species (*Carychium minimum* and *Succinea/Oxyloma* sp.), catholic species (*Trochulus hispidus* and *Cochlicopa sp*.) and open country taxa (*Vallonia excentrica*, *Vertigo pygmaea*). The shade-demanding component was largely of species at the catholic end of the scale (eg. *Punctum pygmaea*, *Nesovitrea hammonis*, *Oxychilus cellarius*, Vitrea sp.).

D.3.2 Overall the character of the assemblages suggests a clean, well-oxygenated aquatic environment with a slow to moderate flow regime throughout and a muddy substrate. The occurrence of catholic freshwater and a range of terrestrial species suggest some vegetation and silting along the margins and banks of the feature, which may have included reeds, sedges and long grasses, perhaps within a wider more open environment. There is no real indication of dense vegetation such as woodland or scrub in the immediate vicinity. There is no evidence of significant periods of drying and desiccation within the leat channel and it appears to have been a permanent body of water.

Sample number	7	6	5	4	3	2	1
Context number	104	101	101	102	102	103	103
Depth (m)	0.30-0.35	0.25-0.30	0.20-0.25	0.15-0.20	0.10-0.15	0.05-0.10	0.00-0.05
Vol. Processed (litres)	2	6	6	6	6	5	2
TAXA							
FRESHWATER							
Flowing water species							
Bithynia tentaculata		13	14	5	3		
1 Ancylus fluviatilis			1	1			
Valvata piscinalis		23	75	68	25	16	
Ditch species							
Valvata cristata			1				
Anisus spp.		1	1	3		9	
Catholic species							
Bathyomphalus contortus						8	
Lymnaeidae		3	17	10	2		
Gyraulus albus		1	7	2	2	20	
TERRESTRIAL							
Marsh species							
Succinaea/Oxychilus sp.			3		1		
Carychium minimum		2	2	4			
Catholic species							
Cepaea sp.			1				
Cochlicopa sp.			5	1			
Trochulus hispidus		2	13	9	5	2	
Open country species							
Vallonia excentrica		1	1	1	2		
Vallonia sp.			1			1	
Vertigo pygmaea			1	1			
Shade-demanding							
2 Oxychilus cellarius				1			
Punctum pygmaea			1				
Nesovitrea hammonis			3				
Vitrea sp.		2	4	2	1		
Total	0	48	151	108	41	56	0
Bivalves		6	52	23	5	12	

Table 3: Mollusca table

APPENDIX E BIBLIOGRAPHY

Boycott, A E, 1936 The habits of freshwater mollusca in Britain, Journal of animal ecology 144, 129-30

BGS 2017 British Geological Survey viewer, accessed online: http://mapapps.bgs.ac.uk/geologyofbritain/home.html

CgMs Consulting 2017 *Written Scheme of Investigation for Archaeological Trial Trenching. Land off Lutterworth Road, Lutterworth, Leicestershire*, unpublished client report CH/23522/01

CIfA 2014 *Standard and guidance for archaeological field evaluation*
Stratascan 2016 *Land South of Coventry Road, Lutterworth*, unpublished client report J9442

Ellis, A E, 1926 British Snails: Guide to the Non-marine Gastropoda of Great Britain and Ireland, Pleistocene to Recent, Oxford University Press, Oxford

Evans, J G, 1972 Land Snails in Archaeology. Seminar Press, London and New York

Goodacre J 1976, Observations on a Mill: Lutterworth. THE LEICESTERSHIRE HISTORIAN Vol.2 No. 4.

Kerney, M, 1999 Atlas of land and freshwater molluscs of Britain and Ireland, Harley Books

Small, R, 2014 Appendix 2. The charred plant remains, in R Kipling, An Archaeological Evaluation on Land at Lutteworth Road, Lutterworth, Leicestershire (SP 5487 8399, unpublished report by ULAS for CGMS Consulting

ULAS 2014 Iron Age Settlement Excavated near Lutterworth, accessed online: https://ulasnews.com/2014/09/22/iron-age-settlement-excavated-near-lutterworth/

APPENDIX F SITE SUMMARY DETAILS

Site name:	Lutterworth Road, Lutterworth, Leicestershire
Site code:	X.A47.2017
Grid Reference	SP 5487 8399
Type:	Excavation
Date and duration:	July 2017
Area of Site	4mx30m
Location of archive:	The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Leicestershire Museum in due course, under the following accession number: X.A47.2017.
Summary of Results:	Oxford Archaeology (OA) was commissioned by CgMs Consulting to undertake an archaeological excavation across a medieval mill leat on land to the north of Lutterworth Road, Lutterworth, Leicestershire. The excavation did not reveal any features or fills that could be dated to the medieval period. The excavation was, however, successful in identifying the later phases of the mill race from the 18th or 20th centuries onwards to the end of its working life and final infilling phase.

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Figure 1: Site location

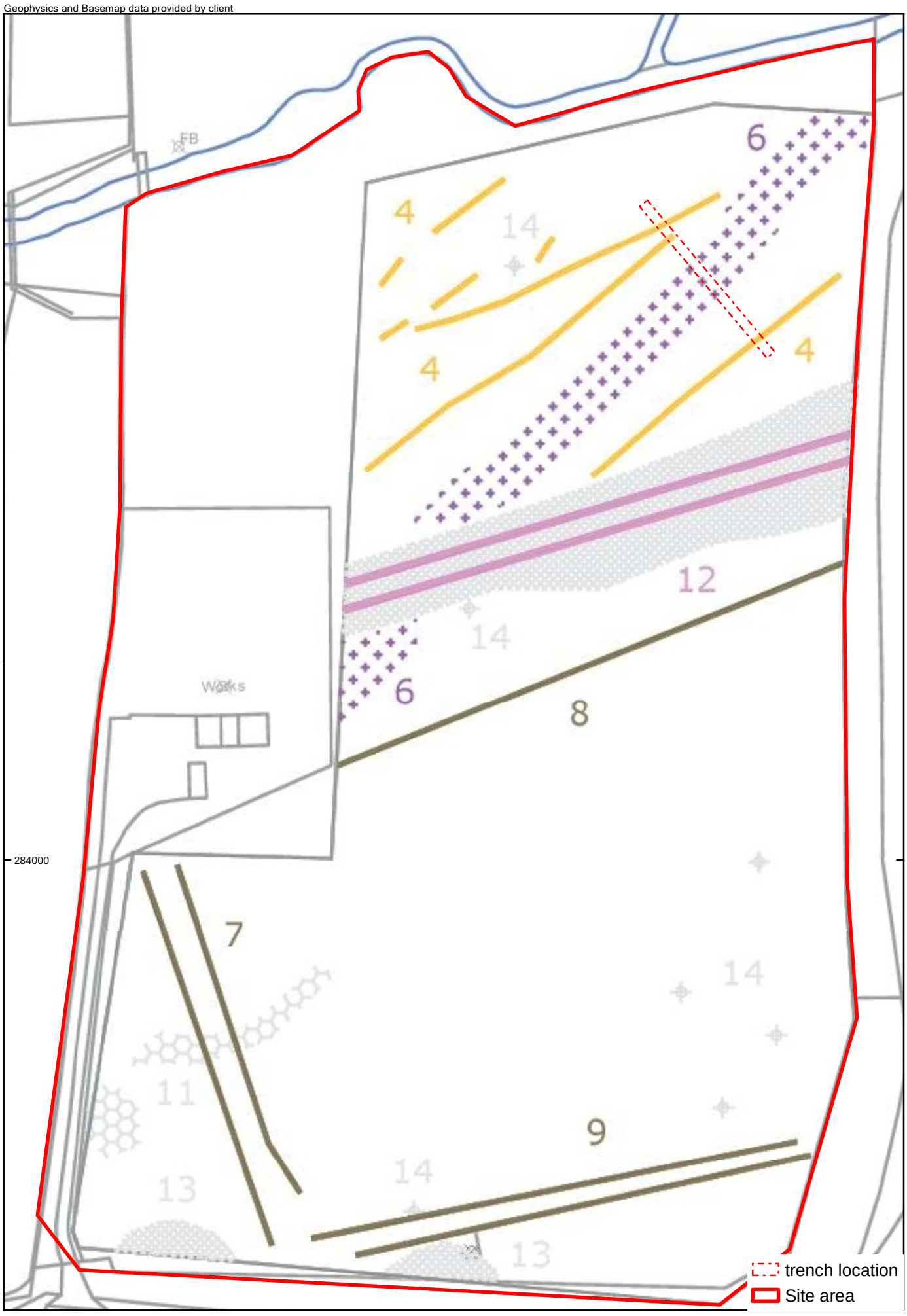

Figure 2: Trench Location

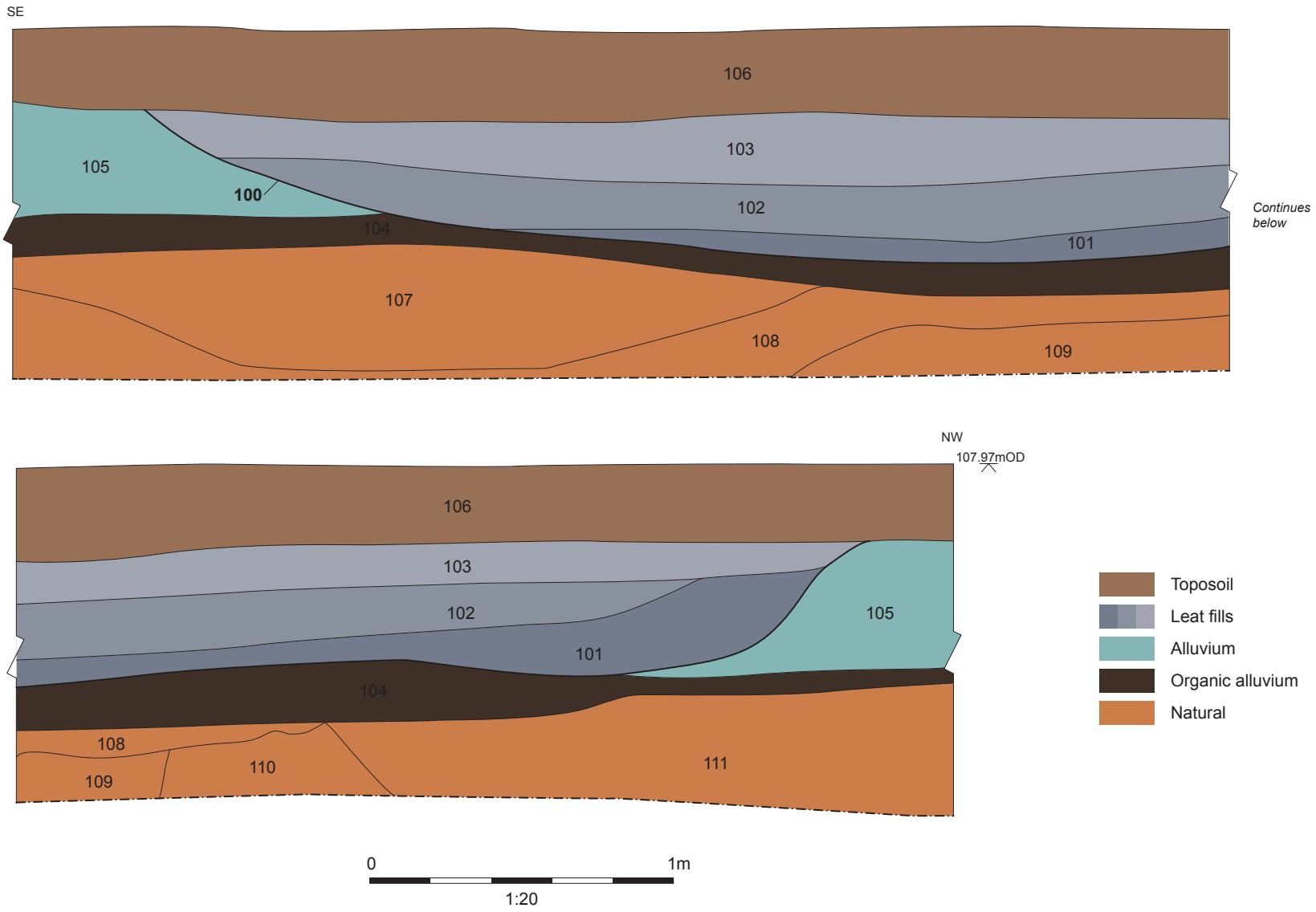

Figure 3: Trench section

Plate 1: Section through mill leat and floodplain sequence (2x 1m scale)

Plate 2: Mill leat and floodplain sequence (2x 1m scale)

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