GLASSON UID, CUMBRIA

Archaeological Watching Brief and Evaluation

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SUMMARY

In 2004, United Utilities submitted a planning application to upgrade current sewer works at Glasson, Cumbria (centred on NY 2556 6025). This development involves the insertion of a new chamber within the scheduled area of the Vallum associated with Hadrian’s Wall (SM 26122), and a new overflow pipe adjacent to the same scheduled area. Hadrian’s Wall is a site of international importance, and as such is designated a World Heritage Site. The Hadrian’s Walls Archaeologist of English Heritage therefore recommended a programme of archaeological investigations prior to and during the development. This report sets out the results of the investigations, comprising an archaeological watching brief on three test pits along the pipeline easement, four evaluation trenches along the pipe route outside of the scheduled area and a single trench within the scheduled area.

The watching brief on the test pits, excavated by the client for geotechnical purposes in July 2004, and the four archaeological evaluation trenches (excavated in September 2004) located outside the scheduled area were excavated down to the natural till. Although a number of field drains were located, no deposits of any archaeological significance were present. It was not recommended that any further archaeological excavation be conducted outside the scheduled area, although an archaeological watching brief on the development should be maintained as stipulated in the project design for this work (Appendix 1).

The evaluation within the scheduled area (Trench 5) was undertaken in December 2004 and involved the excavation of a 30.5m long trench to a depth of 2.2m using a 1m wide toothless ditching bucket. Due to the depth of the trench, it was shored to comply with health and safety law. However, due to the nature of the ground, in a number of places, particularly towards the south-eastern end of the trench, the depth of excavation meant that the trench underwent substantial collapse. In an attempt to limit the damage within the scheduled area, the trench was excavated to a lesser depth for the final 5.7m at the south-eastern end of the trench (Fig 3), although it was still excavated into the natural geology.

No trace of the marginal mounds associated with the Vallum were identified within the course of the evaluation and the only evidence for the associated ditch was far from convincing, mainly on account of the piling sheets, which made it very difficult to examine the trench sections effectively. The north-western end of the trench appeared to be entirely truncated by a number of pipe trenches, and beyond the putative Vallum ditch cut, 13, no further archaeological features were observed within the trench.

There is no palaeo-environmental potential for the samples taken from Trench 5, although analysis of the sediments would perhaps aid the better understanding of conditions when the deposits were laid down.
ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank United Utilities for commissioning the work. Further thanks are also due to Mr McNally of Glasson Farm for his assistance during the project.

The archaeological watching brief was carried out by Paul Clark, and the evaluation excavations outside the scheduled area by Andy Bates and Sophie Pullar. The evaluation within the scheduled area was undertaken by Paul Clark and Martin Sowerby. The report was compiled by Paul Clark and Andy Bates, with the drawings produced by Mark Tidmarsh. Alison Plummer managed the project and edited the report, together with Alan Lupton.
1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 An application to upgrade an existing sewer near Glasson (Fig 1) was made by United Utilities. The route runs through an area of high archaeological potential and affects Hadrian’s Wall World Heritage Site (HWWHS). The route of the proposed improvement runs in close proximity to the line of Hadrian’s Wall Vallum (Scheduled Monument 26122), both within and outside of the scheduled area. As a result it was recommended by the Hadrian’s Wall Archaeologist for English Heritage, that a programme of archaeological investigation be carried out prior to any groundwork both within and outside of the area of the Scheduled Monument.

1.1.2 The current program of works outside of the Scheduled Monument Area comprises the insertion of a new overflow pipe for the length of 320m. The archaeological investigation included a watching brief on three trial pits along the pipeline easement, excavated by United Utilities for geotechnical purposes, and evaluation excavations of the pipe route along its centre line. A verbal project brief was provided by the Hadrian’s Wall Archaeologist, in response to which OA North provided a project design (Appendix 1). Following the acceptance of this, OA North was commissioned to carry out the work in September 2004.

1.1.3 Within the scheduled area an archaeological evaluation was required that would evaluate exactly the area required by the proposed development, which meant the excavation of a single trench measuring 35m long, 1m wide and 2.2m deep. A verbal project brief was provided by English Heritage for this work, in response to which OA North provided a project design (Appendix 2). Following the acceptance of this, OA North carried out the work in December 2004.

1.1.4 This report details the results of both the watching brief and the evaluations, together with a concluding chapter outlining recommendations for any further work.

1.2 SITE LOCATION AND GEOLOGY

1.2.1 The development area lies to the south-east of Glasson Farm, centred on NY 2556 6025, initially running across the scheduled area of the Vallum ditch associated with Hadrian’s Wall and then turning to run parallel to it (Fig 2). The landscape is typically flat and exposed to the prevailing south-westerly winds (Countryside Commission 1998, 19). It is commonly used for dairy, but also beef, cattle with large areas of pasture predominating in many areas as a result of extensive land improvement (ibid). Much of this improvement concentrated on the mosses and wetlands, although elements of this remain within the area such as Glasson Moss (op cit, 20).
1.2.2 The underlying solid geology of the area comprises Triassic Mudstones and siltstones of the Mercia Mudstones Group or Keuper Marls (British Geological Survey 1982). The drift geology is boulder clay, commonly found across the region, which was deposited in the immediate post-glacial period. In the last 10,000 years, subsequent to the formation of the boulder clays, soils of the Newport I Association have accumulated in the area around Bowness-on-Solway, which are well-drained typical brown soils (Ordnance Survey 1983). The majority of the area is, by contrast, covered by alluvial gley soils of the Rockcliffe Association (ibid).

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.3.1 A lengthy account and discussion of the history and archaeological remains of the region would be out of place in the confines of this report. Below is presented a brief and concise background to the archaeological remains found in Glasson and its immediate environs.

1.3.2 Prehistory: no prehistoric activity has been noted in the immediate vicinity of Glasson, although a sequence of acute sea-level changes is known to have affected the area from c5000 BC. This at first resulted in a dramatic rise in relative sea level, before a gradual retreat to current levels (Lloyd et al 1999). This resulted in the development of extensive wetlands, which grew out of areas of shallow water held in a number of smaller basins (Hodgkinson et al 2000, 99).

1.3.3 Roman: activity of this period is graphically demonstrated by the presence of Hadrian’s Wall, located approximately 130m to the north-east of the current development. The associated Vallum ditch is located in the immediate vicinity of the proposed development. Hadrian’s Wall was created between cAD 122 and 130, as part of an attempt to construct a permanent frontier border with the native tribes to the north (Daniels 1978, 5). This had been an ongoing process since the area was taken in the later first century, and was the culmination of several attempts to bring stability to the region (op cit, 4-5). Shortly after it was completed the wall was largely abandoned and a new frontier, the Antonine Wall, was constructed between the Forth and the Clyde (op cit, 5). The Antonine Wall’s period of use was short, however, and by AD 155 it was permanently abandoned and Hadrian’s Wall was reoccupied (ibid).

1.3.4 The Vallum lies to the south of Hadrian’s Wall and, although it is not considered to have been part of the original design of the frontier, it appears to have been conceived not long after work began. Indeed, the relationship of the Wall and Vallum in certain places suggests that they were almost contemporary (Breeze and Dobson 2000, 56-7). The two structures, the Wall and the Vallum, would seem to have formed a military zone within which a civilian presence may have required explanation (Frere 1974, 134). Within this zone, military stores, buildings, and camps had some protection (Salway 1981, 180), the completed frontier separating possibly rebellious British to the south from like-minded tribes to the north (Frere 1974, 134).

1.3.5 The section of the wall between Drumburgh and Bowness-on-Solway has been examined in a piecemeal fashion. The remains of a number of turrets and milecastles, have been subject to small-scale excavation (Wilmott 1999), as
have elements of the wall and *Vallum*. In general, the wall and its associated milecastles were initially constructed of turf and timber (although the turrets were stone), which was later replaced with stone, in some cases on a different alignment (Daniels 1978, 19). Specific details, such as the order in which this happened and the dates, are more difficult to acquire, although there is some evidence to suggest the change was carried out during the mid-second century AD (*op cit*, 253).

1.3.6 The results of excavations on Milecastle 77, thought to be located approximately 250m north-east of Glasson, by Dorothy Charlesworth in 1973 were inconclusive (SMR 171). Parts of the *Vallum* have also been excavated in Glasson, by Carlisle Archaeology Unit, as part of an archaeological watching brief. The position of the *Vallum* running through the village was confirmed, and well preserved organic deposits were identified within it (Carlisle Archaeology 2001).

1.3.7 *Early Medieval:* although no early medieval deposits have been located in Glasson, there is evidence for hemp retting thought to date to the seventh century AD (Cox *et al* 2000). This demonstrates that settlement and related infrastructure must have existed in the area at this time.

1.3.8 *Medieval:* while the Norman Conquest may have marked a turning point in British history, it was not until 1092, when William Rufus took Carlisle and the surrounding area from Scotland (Rollinson 1996, 43), that its impact was truly felt in the region. The area was very volatile throughout the medieval period, at first due to continuous cross-border conflict with Scotland (Rollinson 1967, 87-9) and later as a result of general lawlessness associated with the border reivers, although the focus of this conflict tended to be further east (Fraser 1995). This led to the construction of a number of fortified houses in the area. Within Glasson is a now modernised Bastle, or fortified house, called The Barras (SMR 4688).

1.3.9 *Post Medieval:* the rural situation of the general area left it largely unaffected by the changes of the Industrial Revolution. However, plans to improve Carlisle’s connections with the coast, to improve the transport infrastructure of the area, had been made as early as the late eighteenth century (Hadfield and Biddle 1970, 336-7). In 1807 moves were made to encourage the construction of a canal from Carlisle to the sea in order to facilitate coal supplies to the city (Ramshaw 1997, 9), but it was not until 1817 that the plan was finally put into action (*op cit*, 10; D/Lons/L5/3/1/72). The Carlisle Navigation Canal was opened in 1823 (Ramshaw 1997, 25), reaching the sea at Port Carlisle, passing though Glasson c100m to the north of the development area. The canal was successful, and in 1836 plans were made to expand the capacity of the docks at Port Carlisle (D/Lons/L5/3/54), although these were evidently never carried out. It was, however, intended that the canal should ultimately connect with similar schemes that would provide a link all the way to Newcastle-upon-Tyne (Ramshaw 1997, 6).

1.3.10 The coming of the canal lead to the expansion of many of the adjoining villages. In time though, the canal was not considered profitable enough, and railways were being favoured over them. It had never achieved its aim of forming part of a connection to Newcastle, and the coming of the railways had meant that they were now forming the major part of the national transport
network (Ramshaw 1997, 135). In 1848 a proposal was put forward to convert the canal into a railway but this was turned down (op cit, 123). Nevertheless, the scheme was not forgotten. The construction of the railway along the route of the canal began in 1853, following the draining of the canal and dismantling of the locks, and the last boats to have used it were sold off or went elsewhere (op cit, 135-7).
2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (Appendix 1) was submitted by OA North in response to a request by United Utilities for a programme of archaeological investigation along the route of an overflow pipe at Glasson Farm outside of the area of the Scheduled Monument of the Vallum. A further project design (Appendix 2) was submitted for the evaluation within the scheduled area. The project designs were compiled following consultations with English Heritage. The work undertaken followed the method statements detailed in the project designs (Appendices 1 and 2) and complied with current legislation and accepted best practice, including the Code of Conduct and the relevant professional standards of the Institute of Field Archaeologists (IFA).

2.2 FIELD WORK

2.2.1 **Watching Brief:** the topsoil strip and excavation of three 2.0m by 0.7m test pits was carried out using a mechanical excavator fitted with a 0.7m wide toothed bucket. Permanent observation of the work was undertaken, as well as examination of any soil horizons exposed, and the accurate recording of all archaeological features, horizons and any artifacts found during the excavations.

2.2.2 **Evaluation:** four evaluation trenches, 50m in length, were excavated along the centre line of the proposed overflow pipe outside the scheduled area. The trenches were initially excavated with a mechanical excavator, fitted with a 1.7m wide toothless bucket, down to natural geology or the first archaeologically significant deposits. Any further excavation was completed by hand in accordance with the project design (Appendix 1). The evaluation within the scheduled area was initially undertaken with a mechanical excavator fitted with a 1m wide toothless bucket. The trench was excavated to a depth of 2.2m along its length; the depth required by the design of the overflow pipe. The depth required for this trench meant that shoring was necessary to comply with health and safety laws; the shoring agreed upon comprised a number of cross-braced vertical plates (Plates 2 and 4), which allowed for limited examination of the trench’s section. Two column samples were taken from the open section within this trench (Section 6).

2.2.3 **Recording:** all spoil was scanned for finds during the excavations. A complete record of all features and horizons exposed was made, comprising of a full description and preliminary classification of features or structures revealed, on OA North pro-forma sheets, and their accurate location in plan. A plan of the site was produced, showing the position of the excavations (Fig 2). A photographic record in colour slide and monochrome formats was also compiled. The location of the trenches were accurately recorded, using a Differential Global Positioning System accurate to ±0.25m.
2.3 ARCHIVE

2.3.1 A full archive has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in the Cumbria County Record Office (Carlisle) and to English Heritage on completion of the project. A copy of the report will be deposited with the Cumbria SMR in Kendal.
3. RESULTS OF THE WATCHING BRIEF

3.1 INTRODUCTION
3.1.1 Three test pits were excavated by the client along the easement of the pipeline route, to gain geotechnical information prior to the development taking place (Fig 2). Below is presented the results of the archaeological watching brief maintained on these excavations.

3.1.2 Each Test pit measured 2.0m by 0.7m in size. The removed soil horizon in each test pits was identical in character, described as a loose light brown silty-sand varying from 0.35m to 0.40m in depth.

3.2 TEST PIT 1
3.2.1 The soil horizon was excavated to a depth of 0.40m, revealing the underlying natural glacial till. The till was described as a light yellowish-brown silty-sand. Excavation continued to a maximum depth of 3.9m, though varying natural till deposits. No archaeologically significant deposits were observed in the test pit.

3.3 TEST PIT 2
3.3.1 The soil horizon was excavated to a depth of 0.35m, down to the natural glacial till identical to that described in test pit one. Excavation continued though varying till deposits, including sands and gravels, to a depth of 3.8m. No archaeologically significant deposits were observed in the test pit.

3.4 TEST PIT 3
3.4.1 The soil horizon was excavated to a depth of 0.35m, beneath which the natural glacial till was located identical to that previously describes. Excavation continued to a maximum depth of 4.3m though varying till deposits, including layers of sands, gravels, and a silty-organic deposit. No archaeological features were observed.

3.5 DISCUSSION
3.5.1 The watching brief carried out on the three test pits identified varying natural tills below 0.35m to 0.40m of soil horizon, but no archaeologically significant features were observed.
4. RESULTS OF THE EVALUATION OUTSIDE THE SCHEDULED AREA

4.1 INTRODUCTION

4.1.1 Four 50m by 1.7m evaluation trenches were excavated along the centre line of the proposed pipeline route (Fig 2), outside the scheduled area. They were excavated on a north-west/south-east orientation. Below is given a detailed description of each trench, followed by a brief discussion of their significance. The soil horizon for each trench was identical, comprising a very dark grey silty-clay topsoil, 0.20m to 0.30m thick, above a dark grey clayey-subsoil of roughly equal thickness.

4.2 TRENCH 1

4.2.1 Trench 1 was excavated to a depth of 0.6m. Removal of the soil horizon revealed an mid-orangy grey clayey-glacial till with areas of sandy clay till, which had been cut by a total of five field drains.

4.3 TRENCH 2

4.3.1 Trench 2 was excavated to a depth of 0.5m. Below the excavated soil horizon was a mid-orangy grey clayey-glacial till with area of sandy-clay till. One linear feature was noted at the north-western end of the trench, which was identified as a field drain.

4.4 TRENCH 3

4.4.1 Trench 3 was excavated to a depth of 0.5m. Below the soil horizon was a glacial till of a varying composition and colour, from a mid-orangy grey clay to a light grey sandy-clay. In the south-eastern 2.5m of the trench a deposit of small pebbles within a mid-orangy grey clayey-matrix was noted, which was interpreted as a stony layer within the natural till.

4.5 TRENCH 4

4.5.1 Trench 4 was excavated to a maximum depth of 0.5m down to a glacial clayey till, and described as varying from a mid-greyish orange to a light grey in colour. Two field drains, one stone filled and one containing ceramic pipe, were noted cutting across the length of the trench.

4.6 DISCUSSION

4.6.1 Although 11 field drains, ten containing post-medieval ceramic pipes and one stone filled, were identified in the excavations, no deposits of archaeological significance were observed. Where possible these field drains were not disturbed by the excavations.
5. RESULTS OF THE EVALUATION WITHIN THE SCHEDULED AREA

5.1 INTRODUCTION

5.1.1 The project design (Appendix 2) called for a 35m long trench to be excavated to a width of 1.0m and to a depth of 2.2m, which was the same size as the proposed trench within the scheduled area required for the sewer upgrade work. However on-site consultation with the site engineer made it clear that the trench would not be required to be as large as originally designed, and so only the area to be affected was evaluated. This led to the original 35m long trench being reduced in length to 30.5m, although only 28.4m of this was excavated down to the natural, with the remaining 2.1m stepped down to allow safe access into the trench.

5.1.2 Due to the depth of the trench, it was shored (Plate 2) to comply with health and safety law. However, due to the nature of the ground, in a number of places, particularly towards the south-eastern end of the trench, the depth of excavation meant that the trench underwent substantial collapse. In an attempt to limit the damage within the scheduled area, the trench was excavated to a lesser depth for the final 5.7m at the south-eastern end of the trench (Fig 3), although it was still excavated into the natural geology.

5.2 TRENCH 5

5.2.1 The most recent deposit, 14, revealed within this trench was located at the north-western end of the trench and was the backfill of the cut for a modern pipe, 15 (Fig 3 and 4). This cut truncated a loose mid-brown sandy-clay layer, 8, which appeared to be the uppermost fill of the cut, 11, for the current sewage pipes. The lower two fills of this cut, 9 and 10, comprised a dark-brown organic-rich silty-sand fill and a light-grey sandy-clay fill respectively. Cut 11 appeared to truncate the topsoil, 1, comprising mid greyish-brown sandy-silty-clay. This in turn overlay two further soil deposits, 2 and 3, which comprised a greyish-brown sandy-silty-clay and a grey sandy-silty-clay respectively. The lower of these layers, 3, appeared to seal fill 12, although this remains unproven because of the position of the shoring and the fill may have been overlain by a later layer. Fill 12 comprised light-grey sandy-clay and was the only fill within cut 13. Due to the shoring piles very little of this cut was actually observed, although it seems possible that it represents the cut of the Vallum ditch (Fig 4, Plate 3). This cut appeared to truncate layer 4, a thin band of dark grey organic material, which overlay layer 5, which comprised a light grey sterile clay, containing few inclusions, to a maximum thickness of 0.6m. This in turn overlay a dark-grey sandy-clay, 6, which contained a fair proportion of degraded sandstone and overlay a well-compacted orange clay, 7.

5.3 DISCUSSION
5.3.1 No trace of the marginal mounds associated with the *Vallum* were identified within the course of the evaluation and the only evidence for the associated ditch was far from convincing, mainly on account of the piling sheets, which made it very difficult to examine the trench sections effectively. The north-western end of the trench appeared to be entirely truncated by a number of pipe trenches, and beyond the putative *Vallum* ditch cut, *T3*, no further archaeological features were observed within the trench. The trench produced evidence of a number of distinct layers, discussed above, which only varied slightly along the length of the trench; these are discussed in greater depth in the following environmental section.
6. ENVIRONMENTAL RESULTS

6.1 INTRODUCTION

6.1.1 Environmental samples were recovered from Trench 5 to help understand the conditions in which the deposits were laid down.

6.1.2 Two monolith samples (1 and 2) were recovered from the open section of Trench 5 (Fig 3 and Plate 4). The monoliths were taken through layers 2, 3, 4, 5, 6 and 7.

6.1.3 Methods: the stratigraphy of the sediments in sample 1 was described and recorded in the laboratory. The data is shown in Table 1. Four small samples (less than 5g) were taken from layers 4, 5, 6 and 7 and suspended in water and examined under a microscope for biological indicators eg pollen, foraminifera and diatoms to try and understand the conditions in which the deposits accumulated.

6.1.4 Results: the stratigraphy of the deposits is shown in Table 1. A clayey-loam topsoil (layer 2) and clayey-loam with stones (layer 3) overlies a narrow darker more organic layer (4), sealing a thick band of grey clay, which becomes a dark grey sandy-clay containing degraded sandstone (layer 5). This overlies a light grey stiff sandy-clay with degraded sandstone (layer 6) which grades into a stiff orange clay (layer 7).

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth from ground surface (m)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/3</td>
<td>0.27-0.47</td>
<td>Brown clayey-loam topsoil</td>
</tr>
<tr>
<td>4</td>
<td>0.37-0.39</td>
<td>Darker, more organic band</td>
</tr>
<tr>
<td>5</td>
<td>0.47-0.67</td>
<td>Brown clayey-loam with stones</td>
</tr>
<tr>
<td>5</td>
<td>0.67-0.1.05</td>
<td>Grey sterile clay with iron staining and occasional black mottling and charcoal at base.</td>
</tr>
<tr>
<td>6</td>
<td>1.05-1.13</td>
<td>Dark grey sandy-clay</td>
</tr>
<tr>
<td>6/7</td>
<td>1.13-1.48</td>
<td>Light grey stiff clay with degraded sandstone grading into stiff orange clay</td>
</tr>
</tbody>
</table>

Table 1 Glasson UID, Cumbria: showing the stratigraphy of sample 1 through the deposits in Trench 5

6.1.5 No pollen, foraminifera or diatoms were recorded in the samples examined.

6.1.6 Discussion: the deposits appear to be natural in origin. The stiff sterile grey clay (layer 5) may be fluvial in origin but there are no diagnostic features or microfossils present to confirm this. The basal stiff orange clay is likely to be the boulder clay that is recorded at many sites in Northern Cumbria (John Zant pers comm).
6.1.7 It was hoped that if pollen, diatoms or foraminifera had been present in the deposits they would have provided information about the conditions during which they accumulated. Foraminifera are marine organisms and their presence would have suggested that the grey clays were marine in origin.

6.1.8 **Potential:** there is no palaeo-environmental potential for the deposits although analysis of the sediments would perhaps help in the better understanding of what the conditions were when the deposits were laid down.
7. IMPACT AND RECOMMENDATIONS

7.1 IMPACT

7.1.1 No deposits of archaeological significance were observed during the watching brief or the evaluation outside the scheduled area. Within the scheduled area, the only feature of note was the putative *Vallum* ditch, which appeared to be heavily truncated by the existing sewage pipes. Providing the proposed development remains within the trench excavated for this evaluation there should be little further impact upon this feature, although there could be a degree of collapse of the trench edges which may impact upon the ditch.

7.2 RECOMMENDATIONS

7.2.1 It is not recommended that any further archaeological excavation be carried out outside the scheduled area on this section of the development. However, an archaeological watching brief should be maintained on any excavations for the development as initially stipulated in the Project Design (Appendix 1). Within the scheduled area a watching brief, to record any archaeology exposed by collapsing trench edges, is also recommended.
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Plate 4: Working shot of environmental samples being taken.
APPENDIX 1: PROJECT DESIGN FOR INVESTIGATION OUTSIDE SCHEDULED AREA
Proposals

The following project design is offered in response to a request by United Utilities for an archaeological evaluation and watching brief during the upgrading of an existing sewer system at Glasson, Cumbria.
1. INTRODUCTION

1.1 United Utilities (hereafter the client) are proposing to upgrade their existing sewer south of Glasson, Cumbria. The route runs through an area of high archaeological potential and affects Hadrian’s Wall World Heritage Site (HWWHS). The route of the proposed improvement runs in close proximity to the line of Hadrian’s Wall vallum but within and outside of the area of Scheduled Monument. This document presents a methodology for the archaeological work to be undertaken outside of the Scheduled area; during the proposed improvement works, and has been prepared following discussions with the client and the Hadrian’s Wall Archaeologist.

1.2 OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

1.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archæologists (IFA) registered organisation, registration number 17, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

2.1 The following programme has been designed to provide an accurate archaeological assessment of the designated area within its broader context. The required stages to achieve these ends are as follows:

2.2 Watching brief: to maintain a permanent presence watching brief during the excavation of trial pits along the proposed route of the new overflow pipe, which runs parallel to the alignment of the vallum.

2.3 Evaluation: to implement a programme of trial trenching examining 5% of the working easement for the new overflow pipe. The evaluation will determine the necessity for any further watching brief to be undertaken.

2.4 Report and Archive: an interim report may be issued should there be any further mitigation work necessary. The final report will be produced for the client within eight weeks of completion. A site archive will be produced to English Heritage guidelines (MAP 2) and in accordance with the Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990).

3 METHOD STATEMENT

3.1 WATCHING BRIEF

3.1.1 Methodology: a programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits during the excavation of trial pits along the route of the proposed new overflow pipe. This work will comprise observation during the excavation for
these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.

3.1.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the Client. A photographic record will be undertaken simultaneously.

3.1.3 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.

3.1.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

3.1.5 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered, but this would only be called into effect in agreement with the Client and English Heritage and will require a variation to costing.

3.1.6 Full regard will, of course, be given to all constraints (services etc.), as well as to all Health and Safety regulations. OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Unit Managers.

3.1.7 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. English Heritage and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations, and if appropriate, in compliance with the ‘Disused Burial Grounds (Amendment) Act, 1981.

3.2 **Evaluation**
3.2.1 The programme of evaluation will require trial trenching to establish the presence or absence of any previously unsuspected archaeological deposits and, if established, will then test their date, nature, depth and quality of preservation. In this way, it will adequately sample the threatened available area.

3.2.2 The trial trenching is required to investigate no less than 5% of the area of the proposed route of the new overflow pipe. This equates to approximately four fifty-meter long trenches. The positioning of the trenches will be informed by the results of the watching brief.

3.2.3 The topsoil will be removed by machine (fitted with a toothless ditching bucket, approximately 1.6m in width) under archaeological supervision to the surface of the first significant archaeological deposit. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest must be investigated and recorded unless otherwise agreed by the County Archaeology Service. The trenches will not be excavated deeper than 1.20m to accommodate health and safety constraints; any requirements to excavate below this depth will involve recosting.

3.2.4 All trenches will be excavated in a stratigraphical manner, whether by machine or by hand. Any investigation of intact archaeological deposits will be exclusively manual. A minimum sample of 50% of archaeological features must be examined by excavation. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no less than a 25% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation in situ.

3.2.5 The trenches will be backfilled. No other reinstatement will take place. Any requirement to close the trenches prior to the completion of the entire programme of work will result in a variation to the project cost.

3.2.6 Environmental Sampling: environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Subject to the results of the evaluation an assessment of any environmental samples will be undertaken by the in-house palaeoecological specialist, who will examine the potential for further analysis. The assessment would examine the potential for macrofossil, arthropod, palynological and general biological analysis. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect in agreement with the County Archaeologist, English Heritage, and the Client.

3.2.7 Samples will also be collected for technological, pedological and chronological analysis as appropriate. If necessary, access to conservation advice and facilities can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeozoological specialists with considerable
expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.

3.2.8 **Recording:** all information identified in the course of the site works will be recorded stratigraphically, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.

3.2.9 Results of the field investigation will be recorded using a paper system, adapted from that used by Centre for Archaeology of English Heritage. The archive will include both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20, and 1:10). Levels will be tied into the Ordnance Datum. All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

3.2.10 **Treatment of finds:** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.

3.2.11 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

3.2.12 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum’s archive curator.

3.2.13 **Contingency plan:** in the event of significant archaeological features being encountered during the evaluations, discussions will take place with the English Heritage, as to the extent of further works to be carried out, and in agreement with the Client. All further works would be subject to a variation to this project design. In addition, a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the costing and would be in agreement with the client.

3.3 **_ARCHIVE/REPORT**

3.3.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be
provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the CSMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OA North recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.

3.3.2 The Arts and Humanities Data Service (AHDS) online database Online Access to index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project.

3.3.3 Report: one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further three copies submitted to the Cumbria SMR within eight weeks of completion of fieldwork. The Hadrian’s Wall Archaeologist will also receive a copy of the report. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.

3.3.4 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans. This report will be in the same basic format as this project design; a digital copy of the report can be provided, if required.

3.3.5 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained.

3.3.6 Confidentiality: all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4 PROJECT MONITORING
4.1 Monitoring of this project will be undertaken through the auspices of the Hadrian’s Wall Archaeologist, who will be informed of the start and end dates of the work.

5 WORK TIMETABLE

5.1 The duration of the watching brief will be dependent upon the progress of the contractor.

5.2 It is anticipated that the evaluation will take in the region of 6 days.

5.3 The client report will be completed within twelve weeks following completion of the fieldwork.

6 STAFFING

6.1 The project will be under the direct management of Alison Plummer BSc (Hons) (OA North Senior Project Manager) to whom all correspondence should be addressed.

6.2 The evaluations will be directed by an OA North supervisor. All OA North’s project officers and supervisors are experienced field archaeologists who regularly undertaken supervision of numerous small- and large-scale evaluation and excavation projects.

6.3 An archaeological assistant will assist the supervisor.

6.4 The processing and analysis of any palaeoenvironmental samples will be carried out under the auspices of Elizabeth Huckerby BA, MSc (OA North project officer), who has extensive experience of the palaeoecology of the North West, having been one of the principal palaeoenvironmentalists in the English Heritage-funded North West Wetlands Survey.

6.5 Assessment of any finds from the excavation will be undertaken by Sean McPhillips BA. Sean has worked as a finds supervisor for English Heritage and MOLAS on a number of occasions and has extensive knowledge concerning finds.

7 INSURANCE

7.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.
APPENDIX 2: PROJECT DESIGN FOR INVESTIGATION WITHIN SCHEDULED AREA
Proposals
The following project design is offered in response to a request by United Utilities for an archaeological evaluation and watching brief during the upgrading of an existing sewer system at Glasson, Cumbria.
1. INTRODUCTION

1.1 United Utilities (hereafter the client) are proposing to upgrade their existing sewer south of Glasson, Cumbria. The route runs through an area of high archaeological potential and affects Hadrian’s Wall World Heritage Site (HWWHS). The route of the proposed improvement runs in close proximity to the line of Hadrian’s Wall vallum both within and outside of the Scheduled Monument. This document presents a methodology for the evaluation work to be undertaken within the Scheduled area; during the proposed improvement works, and has been prepared following discussions with the client and the Hadrian’s Wall Archaeologist.

1.2 OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

1.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) registered organisation, registration number 17, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

2.1 The following programme has been designed to provide an accurate archaeological assessment of the designated area within its broader context. The required stages to achieve these ends are as follows:

2.2 Evaluation: to implement a programme of evaluation examining the full extent of the ground disturbance prior to the excavation for the outfall pipe associated with the installation of a new chamber/extension to the existing chamber for the new overflow pipe.

2.3 Report and Archive: an interim report may be issued to allow speedy consideration of the archaeological implications highlighted by the evaluation. The final report will be produced for the client within eight weeks of completion. A site archive will be produced to English Heritage guidelines (MAP 2) and in accordance with the Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990).

3 METHOD STATEMENT

3.1 EVALUATION

3.1.1 The proposed new outfall pipe runs for a distance of approximately 35m across the Scheduled Monument to the position of the existing valve chamber. The 375mm pipe will be laid in a trench 2.2m in depth and approximately 1m wide. The trial trenching is required to evaluate the entire length of the proposed outfall as it crosses the Scheduled Monument. The trench will need to be shored beyond 1m in depth to accommodate health and safety constraints. However, it
is anticipated that much of the archaeology will be in the top metre, the only deeper feature being the vallum ditch itself; it is not the purpose of the evaluation to excavate to the base of the vallum ditch unless unforeseen discoveries make this unavoidable. Therefore, it may be possible to limit the areas of shoring and avoid flooding from the vallum ditch. Any requirement for shoring will be undertaken by the contractor at the clients’ expense and will comprise trench sheeting. The trench will not be stepped out, which method must be avoided.

3.1.2 All machining will be undertaken with a toothless ditching bucket, and under direct archaeological supervision. The trench will be machine excavated to the surface of the first significant archaeological deposit. This deposit will be cleaned by hand, using either hoes, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest must be investigated and recorded unless otherwise agreed by English Heritage. All deposits will be sampled sufficiently to allow them to be characterised.

3.1.3 Any investigation of intact archaeological deposits will be exclusively manual. A minimum sample of 50% of archaeological features must be examined by excavation. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no less than a 25% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation in situ.

3.1.4 The trench will be backfilled but not otherwise reinstated. Any requirement to reinstate the trench will result in a variation to the project cost.

3.1.5 Environmental Sampling: environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). A column sample will be taken from both sections of the evaluation trench by a suitably qualified palaeoecological specialist. The columns will be positioned to capture samples from across the vallum mounds. The resulting analysis of the column samples will be used to determine the nature of the buried soil prior to the construction of the vallum.

3.1.6 Subject to the results of the evaluation an assessment of any environmental bulk samples will be undertaken by the in-house palaeoecological specialist, who will examine the potential for further analysis. The assessment would examine the potential for macrofossil, arthropod, palynological and general biological analysis. Due to the unknown nature of the samples, assessment costs are presented as day rates. Following the initial assessment of samples the level of further analysis required would be discussed with English Heritage. Although the cost for analysis will be subject to a variation, the analysis itself should be seen as an integral part of this project.

3.1.7 Samples will also be collected for technological, pedological and chronological analysis as appropriate. If necessary, access to conservation advice and facilities
can be made available. OA North maintains close relationships with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs artefact and palaeozoological specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation.

3.1.8 **Recording:** all information identified in the course of the site works will be recorded stratigraphically, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.

3.1.9 Results of the field investigation will be recorded using a paper system, adapted from that used by Centre for Archaeology of English Heritage. The archive will include both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20, and 1:10). Levels will be tied into the Ordnance Datum. All plans and sections will be tied into the National Grid using a total station. All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

3.1.10 **Treatment of finds:** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.

3.1.11 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

3.1.12 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum’s archive curator.

3.1.13 **Contingency plan:** A contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the costing and would be in agreement with the client.

3.2 **ARCHIVE/REPORT**

3.2.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be
provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the CSMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OA North recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.

3.2.2 The Arts and Humanities Data Service (AHDS) online database Online Access to index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project.

3.2.3 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and a further three copies submitted to the Cumbria SMR within eight weeks of completion of fieldwork. The Hadrian’s Wall Archaeologist will also receive a copy of the report. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.

3.2.4 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans. This report will be in the same basic format as this project design; a digital copy of the report can be provided, if required.

3.2.5 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained.

3.2.6 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4 **PROJECT MONITORING**
4.1 Monitoring of this project will be undertaken through the auspices of the
Hadrian’s Wall Archaeologist, who will be informed of the start and end dates of
the work.

5 WORK TIMETABLE

5.1 It is anticipated that the evaluation will take in the region of two to three days.
The column sampling will take one day.

5.2 The client report will be completed within eight weeks following completion of
the fieldwork.

6 STAFFING

6.1 The project will be under the direct management of Alison Plummer BSc
(Hons) (OA North Senior Project Manager) to whom all correspondence should
be addressed.

6.2 The evaluation will be directed by an OA North supervisor. All OA North’s
project officers and supervisors are experienced field archaeologists who regularly
undertaken supervision of numerous small- and large-scale evaluation and
excavation projects.

6.3 An archaeological assistant will assist the supervisor.

6.4 The processing and analysis of any palaeoenvironmental samples will be carried
out under the auspices of Elizabeth Huckerby BA, MSc (OA North project
officer), who has extensive experience of the palaeoecology of the North West,
having been one of the principal palaeoenvironmentalists in the English Heritage-
funded North West Wetlands Survey.

6.5 Assessment of any finds from the excavation will be undertaken by Sean
McPhillips BA. Sean has worked as a finds supervisor for English Heritage and
MOLAS on a number of occasions and has extensive knowledge concerning
finds.

7 INSURANCE

7.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of
which can be supplied as required.
### APPENDIX 3: CONTEXT LIST

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