

HACKTHORPE WASTEWATER TREATMENT IMPROVEMENTS, CUMBRIA



Desk-Based Assessment and Rapid Walkover Survey



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SUMMARY

United Utilities are proposing the construction of a new Wastewater Treatment Works and outfall pipe at Hackthorpe, Cumbria (NY 5380 2374 to NY 5507 2399). Cumbria County Council Archaeology Service issued a brief for a programme of archaeological works to be undertaken, prior to the development.

In the first instance, these works comprised a desk-based assessment and rapid walkover survey of the route of the proposed pipeline. The desk-based assessment comprised a search of both published and unpublished records held by the Cumbria Sites and Monuments Record (SMR) in Kendal, the Cumbria County Record Office in Kendal, and the archives and library held at OA North. The rapid walkover survey inspected a one-hundred metre corridor along either side of the pipeline.

The desk-based assessment identified 19 sites, 18 (Sites **1-18**) of which were on the SMR, with the walkover survey identifying a further six sites (Sites **20-25**). The sites identified included a Neolithic long barrow (Site **03**); a Bronze Age burial cairn (Site **02**); an Iron Age/Romano-British settlement (Site **01**); a Roman coin hoard and associated metalwork (Sites **15, 16** and **17**); medieval ridge and furrow (Site **07**); Hackthorpe Village Hazard Area (Site **09**) and field system (Site **19**); a post-medieval village (Lowther - Site **05**); quarries (Sites **12** and **13**); a milestone (Site **18**); a terracing wall (Site **20**); a hut (Site **21**); field boundaries (Sites **22** and **23**); a gatepost (Site **24**); an undated farmstead (Site **04**); ridge and furrow (Sites **06**); cropmarks (Sites **08, 10** and **14**); a field system (Site **11**); and an undated hollow (Site **25**).

The significance criteria detailed in PPG 16 (DoE 1990) were employed during the assessment to analyse the sites identified, with the result that a single site, as recognised by its scheduling SM23772 was considered to be of national significance (Site **03**), three sites were considered to be of regional significance (Sites **15, 16** and **17**), whilst the remainder were considered to be of local significance.

The assessment identified seven sites (Sites **01, 07, 18, 19, 20, 22, 23**) that may be impacted upon by the proposed development, and it is recommended that a further programme of archaeological work be undertaken prior to and during the course of the ground works.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to Jo Macintosh at the Cumbria SMR, and all the staff of the County Record Office in Kendal for their assistance with this project.

The desk-based assessment was undertaken by Paul Clark and the walkover survey by Kathryn Blythe. The report was written by Paul Clark and Kathryn Blythe. The drawings were produced by Mark Tidmarsh. The project was managed by Alison Plummer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 United Utilities are proposing the construction of a new Wastewater Treatment Works and outfall pipe, c 3km long, at Hackthorpe, Cumbria (NY 5380 2374 to NY 5507 2399). Cumbria County Council Archaeology Service (CCCAS) issued a brief (*Appendix 1*) for a programme of archaeological works to be undertaken, prior to the development.
- 1.1.2 The archaeological programme of work comprised a desk-based assessment and walkover survey undertaken prior to any development work on site taking place. This report sets out the results of the desk-based assessment and walkover survey in the form of a short document, outlining the findings, followed by a statement of the archaeological potential and significance, and an assessment of the impact of the proposed development

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 A project design (*Appendix 2*) was submitted by OA North in response to a request from United Utilities. The project design, written to comply with the brief issued by CCCAS (*Appendix 1*) was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 DESK-BASED ASSESSMENT

- 2.2.1 Several sources of information were consulted, in accordance with the project design. The study area consisted of a radius of 500m around the proposed development area. The more general area around the study area was also briefly examined to provide an historical and archaeological background.
- 2.2.2 **Sites and Monuments Record (SMR):** the Sites and Monuments Record for Cumbria, held in Kendal, was consulted. This consists of a list of known archaeological sites within the county, and is maintained by Cumbria County Council Archaeological Services. Each site recorded within the assessment area was accessed and a brief entry including grid reference, sources, and description, was added to the gazetteer (see *Section 4*, below).
- 2.2.3 **County Record Office (CRO), Kendal:** the county record office in Kendal holds the majority of original documents and maps for the area around Hackthorpe. It was visited primarily to consult early maps of the area, which can provide details of the landscape development of the landscape, and other documents relevant to the study area.
- 2.2.4 **Oxford Archaeology North:** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise of Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.

2.3 WALKOVER SURVEY

- 2.3.1 Following the desk-based assessment a Level I walkover survey was undertaken to relate the existing landscape to research findings. This encompassed a one hundred metre corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape were recorded using the relevant OA North *pro-forma*, and the features accurately positioned with the use of both a GPS, which can achieve accuracies of +/-0.1m with respect to the OS national grid, or by manual survey techniques, which tied in new features to features already shown on the relevant OS map.

2.3.2 The significance of the results of both the desk-based assessment and walkover survey were assessed using Planning Policy Guidance 16 (PPG16) criteria.

2.4 ARCHIVE

2.4.1 A full professional archive has been compiled in accordance with the project design (*Appendix 2*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in County Record Office (Kendal) on completion of the project.

3. BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The study area comprises an area of 500m either side of the proposed pipeline route, which runs from just to the east of Lowther village (NY 5380 2374) to Waterfalls Bridge (NY 5507 2399). The study area lies within Lowther Parish, in the former county of Westmorland, and is approximately five miles south of Penrith.
- 3.1.2 The fields within the proposed pipeline route are all currently under pasture and the land is generally flat or gently rolling. The land lies between 159m OD and 215m OD.
- 3.1.3 The solid geology comprises a sequence of sandstone, mudstone, and limestone (Institute of Geological Sciences 1982), and appears to outcrop without any covering of glacial drift.

3.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.2.1 *Prehistoric Period:* the village of Hackthorpe lies 8km south-west of the confluence of the Rivers Eden and Eamont, where an area of fertile agricultural land contains one of the greatest clusters of prehistoric archaeological sites in Cumbria, including a concentration of henge monuments suggestive of some density of population in the vicinity in the late Neolithic (LUAU 1997c, 7). This is demonstrated within the study area by the presence of a Neolithic long barrow on Trainford Brow (Site **03**) (Munby 1970). Hackthorpe itself lies at a higher altitude, but several monuments demonstrate Bronze Age activity around the present village. Within the study area, a burial cairn (Site **02**) was excavated in the nineteenth century, and thirteen cremations, an inhumation in a cist, and several flint artefacts were found. Two cropmarks, possibly representing barrows, have been identified on aerial photographs (at NY 5500 2200), whilst elsewhere, a pair of round cairns are known at Round Hill (NY 5410 2190; SMR 5375). A pair of standing stones with associated round cairn c3km to the north at Crooklands also date to this period (NY 5314 2593).
- 3.2.2 The earliest recognised settlement remains in the locality are of Iron Age date. The multi-vallate Castlesteads Hillfort lies 3km north-west of Hackthorpe (NY 5183 2520; SMR 2900; SAM 23677); the site consists of a triple-ramparted, roughly-circular enclosure approximately 53m in diameter, the SMR indicating the presence of internal earthworks which might represent the remains of structures. The hillfort is one of only 18 prehistoric defended enclosures in Cumbria, and has been interpreted as an agricultural settlement of some importance (LUAU 1997a, 16). Cropmarks considered reminiscent of Iron Age or Romano-British settlements have also been identified on aerial photographs of the area, including Site **01**, which lies c100m east of the

proposed pipeline, and a further site (SMR 2841), which lies just to the south of the study area.

- 3.2.3 **Roman:** the gently undulating ground between the upper Eden Valley and the Lake District has one of the greatest densities of surviving Romano-British settlement remains in the North West, giving rise to the suggestion that a more intensive use of the landscape was achieved in the Roman period than in later times (LUAU 1997a, 22). A Romano-British enclosed settlement is known at Yanwath Wood, 3.5km north-west of Hackthorpe (NY 5193 2598; SMR 2899). The enclosure is subdivided into at least eight sub-rectangular enclosures, and includes a low mound that has been interpreted as a hut circle; an associated field system includes three large sub-rectangular fields to the east of the enclosure. Excavation of one of the field ditches in 1936 produced second century pottery. The site is 800m away from Castlesteads, demonstrating that this piece of landscape continued to be settled from the Iron Age into the Roman period (*ibid*). A second settlement of probable Romano-British date has been identified at Greatholme Plantation, 1.5km west of Hackthorpe, and again survives in earthwork form (NY 52858 23128; LUAU 1997a). The site is characterised by a series of large, prominent banks forming a series of roughly rectilinear enclosures, enclosed on the north side, at least, by a substantial but broken boundary bank, and contains at least three circular hut structures. Although rectangular in shape, it has been attributed to the Romano-British period on typological grounds; the settlement lacks any defensive qualities, and some of the boundaries have a lynchet profile rather than a raised bank profile. The layout appears to provide for the grouping of domestic structures and yards in one area, and the grouping of enclosures/plots on the other side of the settlement (LUAU 1997b, 18). An earthwork rectilinear enclosure at Round Hill (SMR 4200), 1km south of Hackthorpe, has been attributed to the Romano-British period, and, as noted above, two other enclosures (one of which is Site **01**), potentially indicative of settlements, have been considered to be either of Iron Age or Romano-British date.
- 3.2.4 Finds of the period have also been made in two locations. A hoard of *aes* coins of late Roman date (Site **17**), a late Roman annular bracelet (Site **15**), and a *pelta* mount (Site **16**) were found in the same field at Hackthorpe; the grid reference provided by the SMR indicates a find spot 300m south-west of the village, but it is unclear whether it was intended to refer to this spot, or to the 1km grid square NY 54 23. Elsewhere, a hoard of 88 coins derives from a field c1km south-east of Hackthorpe (SMR 16871); coins found as casual finds in the same area date from the second to fourth centuries.
- 3.2.5 **Early medieval:** the archaeological evidence for the post-Roman centuries in the North West is sparse, particularly compared with that from many other parts of England. Until recently, excavated settlement evidence from eastern Cumbria was confined to the proposed monastic site of Dacre, near Pooley Bridge, where sixth to eleventh century remains were found (Newman and Leech forthcoming), although there are indications that Penrith may have developed from a pre-Conquest nucleus around St Andrew's Church (Newman *et al* 2000; Winchester 1987, 124). However, the presence of these two high status centres implies the existence of well-established agricultural hinterlands,

and ephemeral traces of rural settlements are now being found for the first time. Over the last decade, evidence for timber buildings, probably predating AD 800, has been found at Fremington (Oliver *et al* 1996, 127-169) and Whinfell Forest (Heawood and Howard-Davis 2002), both lying *c* 4km north of Hackthorpe in the parish of Brougham, and at Shap, some 8km south of Hackthorpe (*ibid*). Artefactual evidence from these sites has been limited, as is often the case in this period, but has included loom weights (Fremington and Shap) and pottery (Fremington).

- 3.2.6 To obtain a more balanced view of the settlement of the region in this period, the limited excavation evidence must be supplemented with place name evidence, and finds of Anglo-Scandinavian stone sculpture. Gillian Fellows-Jenson has argued that the Scandinavian *-bý* place names of the Eden valley above Temple Sowerby represent the influx of Danes from the Danelaw into a landscape already well-settled by the English; some of the English *-tun* names survived, whilst others were partially or completely scandinavianised (Fellows-Jenson 1985, 80). The name Hackthorpe itself contains the common Scandinavian generic *þorp*, meaning 'dependent secondary settlement' (*op cit*, 66); in the Eden valley, place names ending in *-þorp* have been taken to represent influence from the Danelaw (*op cit*, 68), although again, it should be cautioned that the generic may have been applied to an existing English township, and need not imply Scandinavian colonisation of vacant land.
- 3.2.7 Finds of stone sculpture in the parish of Lowther further support the hypothesis that the landscape remained settled in the pre-Viking period, then came under Scandinavian influence from the tenth century. Two cross-shafts of later eighth- to early ninth-century date were formerly present inside Lowther Castle, and may have originated from nearby St Michael's Church (LUAU 1997a, 23; Bailey and Cramp 1988, 127-129); they suggest the presence of a contemporary church or monastic institution, with access to an agricultural surplus. Three rather later Anglo-Scandinavian hog-back stones are still present within the church porch (Bailey and Cramp 1988, 130-1), and imply some degree of Scandinavian influence by the late tenth or early eleventh century.
- 3.2.8 **Medieval:** the settlement morphology and surviving earthworks of many villages in the upper Eden Valley have been interpreted as representing evidence of medieval origins (CCAS undat). Two possibilities have been advanced for their distinctive morphology; the first is that they developed along the outgang or narrow fan of land leading from an existing farmstead to the unenclosed common, the second that they were new and deliberate creations, and represent evidence for planning (Roberts 1993, 133). Many show a rectangular plan, sometimes around a green, but often apparently based around a narrow street (Roberts 1993, 131-3); the village fields were laid out at right angles to the street, and there were typically two open fields on either side of the road, which is not uncommon in highland areas of Britain (*op cit*, para 2.9). The former extent of the village fields is often now reflected by numerous narrow fields, which appear to represent the enclosure of groups of strips (as at Askham, 3km west of Hackthorpe). Several of the settlements are characterised by areas, sometimes individual plots, in which there are

earthwork remains of former buildings (*op cit*, para 2.1). This has been interpreted as demonstrating that the villages were larger in the medieval period, or that the focus of settlement has shifted. It has been argued that ‘the quality and number of such remains is quite remarkable, and must be regarded as of national significance’ (*op cit*, para 2.1).

- 3.2.9 The numbers of surviving ‘medieval’ villages is not repeated in the southern half of old Westmorland (*op cit*, para 2.2), suggesting that they were a product of the agricultural wealth of the Eden valley. The date at which the villages originated remains problematic and, to some extent, appears to rest on the assumption that they must have been settled before the disasters of the fourteenth century (plague, diseases of livestock, and Scottish raids; problems described by Winchester 1987, 44-45).
- 3.2.10 Hackthorpe appears to be one of these rectangular settlements with probable medieval origins. Building plots front the main street, as represented by the modern A6, and there is a back lane to the north-east of the settlement (Fig 3, OS 1863). Beyond the building plots, long narrow fields stretch back at right angles to the main street, some field boundaries displaying traces of the reverse ‘S’ curvature typical of medieval ploughing. Further north-east, narrow fields on different alignments appear to represent additional furlongs within the north-east town field. Earthwork remains were also present within the village, in a plot which was the focus of previous archaeological work (OA North 2002, CFA 2003) and in a vacant plot diagonally opposite that plot on the other side of the main street. The central part of the modern settlement is part of SMR Hazard Area 6747 (Site **09**, Fig 2), an area which measures some 600m x 400m.
- 3.2.11 Historical evidence confirms that there was a medieval settlement at Hackthorpe (a township within Lowther parish) which may plausibly be related to the modern village site. A manor at Hackthorpe is known to have been in the possession of Sir Thomas de Strickland in 1361, because in that year he obtained a royal licence to impark his woods in that township and elsewhere, in return for services in the French wars (Bulmer 1885, 345). The Strickland family held the manor until its purchase by the Lowthers in 1535 (*ibid*), but no documents relating to their tenure are listed in the catalogue of Sizergh manuscripts held by the CRO (Kendal).
- 3.2.12 A variety of medieval remains is known elsewhere within the study area. A second potential medieval village site has been identified 600m south-east of Hackthorpe, on the basis of earthworks observed during a rapid field inspection visit (OA North 2002); a hazard area measuring some 500m x 350m was defined (*ibid*). Earthwork ridge and furrow and a trackway, both attributed to the medieval period, have been identified to the west of the proposed pipeline route (Site **07**), and additional earthwork ridge and furrow of medieval character has been noted to the south of the proposed route (Site **19**). Ridge and furrow cultivation features of unknown date have also been identified c300m south-east of the proposed pipeline (Site **06**). Together, the surviving earthwork ridge and furrow remains, and the pattern of field boundaries visible on nineteenth century and modern maps, suggest that in the

medieval period, Hackthorpe was surrounded by open fields, which were used for arable agriculture.

- 3.2.13 A medieval deer park is known to the south-west of Hackthorpe (LUAU 1997b, 15-16 and Fig 4), which was licenced to Sir Hugh Lowther II in either 1283 or 1337, and seems to have comprised around 200 acres (*ibid*). Until c 1350, the seat of the Lowther family seems likely to have been a ringwork at Castlesteads (NY 5188 2414), some 2.6km north-west of Hackthorpe; a peel tower was then built c 400m nearer to Hackthorpe, on a site later occupied by Lowther Castle (LUAU 1997a, 23). Settlement remains to the east and south-east of Castlesteads appear to represent the medieval village of Lowther, pulled down by Sir John Lowther in 1682 (*ibid*). It is evident that the land surrounding this settlement, as at Hackthorpe, was for the most part subject to arable farming.
- 3.2.14 **Post-medieval:** the Westmorland Hearth Tax return for 1674 provides the first indication of the size of post-medieval Hackthorpe. The occupiers of 17 properties are referred to, of whom 15 had one hearth, one had two hearths, and one had six hearths (Cumbria Family History Society 2000). The last named apparently resided at Hackthorpe Hall, which stands 200m south-east of Hackthorpe village. The hall, an early seventeenth century farmhouse built for Sir Christopher Lowther, underwent alteration in the mid-seventeenth century. The only other structure in Hackthorpe that clearly pre-dates 1750 is the Lowther Castle Inn (LB SMR 25157), standing in the middle of the village. The left part of the structure is dated 1717. Seven mid-eighteenth to nineteenth century listed structures are known within the village (*Appendix 3*; LB SMR Nos. 25154-6, 25158-61).
- 3.2.15 Post-medieval settlement evidence recorded in the SMR is confined to the model village at Lowther, located to the west of the proposed pipeline route, built for Sir James Lowther between 1765 and 1773 by Robert Adam but never completed (Site 5). Industry and quarrying are represented within the study area by two quarries (Sites 12 and 13).
- 3.2.16 The first cartographic evidence for Hackthorpe village located by this study is the tithe map of 1837 (Apportionment of the rent charge in lieu of tithes in the Parish of Lowther, CRO (Kendal)), which unfortunately could not be examined as it is currently undergoing restoration. However, utilising the description from previous work (OA North 2002) it has been noted that the disposition of buildings within Hackthorpe appears to be substantially the same as that shown by modern mapping. The field boundaries to the south-west of Hackthorpe appear to correlate exactly with their modern counterparts, though to the north-east of the A6, narrow strip fields aligned north-east/south-west and north-west/south-east have been amalgamated into much larger fields. The narrow fields depicted on the 1837 map appear to demonstrate the enclosure of small groups of strips within the former town fields to either side of the main street.
- 3.2.17 Later maps of the area (Ordnance Survey 1863, 1899) show an almost identical picture to that shown by the tithe map; indeed there are no significant changes to note.

3.2.18 **Undated earthwork/cropmark remains:** various earthwork/cropmark remains of unknown period are listed by the SMR within the study area. They comprise: a possible farmstead (Site **04**); ridge and furrow (Site **06**); cropmarks of a dyke, trackway and possible enclosure (Site **08**); a possible circular enclosure (Site **10**); an earthwork field system (Site **11**); and possible cropmarks and earthworks (Site **14**). These remains demonstrate that the landscape has been intensively utilised in the past, and that settlement patterns have altered.

3.3 ARCHAEOLOGICAL INTERVENTIONS

3.3.1 Antiquarian excavations are known within the study area, in the form of the Bronze Age tumulus (Site **02**), which was removed in the nineteenth century, revealing its contents. Within the village of Hackthorpe, recent work comprising an evaluation (OA North 2002) and subsequent open-area excavation (CFA 2003) produced a rather confusing set of results; the evaluation appeared to confirm that Hackthorpe was a shrunken medieval village, with the shrinkage probably occurring some time prior to the fifteenth century. The excavation, however, failed to add much useful information, merely confirming the medieval occupation of Hackthorpe.

4. WALKOVER SURVEY RESULTS

4.1 INTRODUCTION

- 4.1.1 The walkover survey was undertaken along the proposed route of the pipeline, encompassing an area 100m each side of the projected easement. The main aim of the survey was to rapidly identify, and record the existence, location and extent of, any previously unrecorded sites. In total, six sites were identified, two of which, Sites **20** and **22**, lie within or very close to the proposed pipeline, and may be affected by it (Fig 2).
- 4.1.2 Both the M6 motorway and the West Coast main railway line truncate the study area in a north/south direction. It is bounded to the west by the A6 and the east by the River Leith. The route surveyed extended from Waterfall Bridge on the River Leith to the east of the M6, via a bridge under the M6 to Warrengill Plantation north of Hackthorpe (Fig 2). The results of the survey are discussed in this order (from east to west) by field and include all the new sites identified by the desk-based assessment, in addition to any other features of note within the survey area.
- 4.1.3 The immediate landscape is commonly used for pasture. The land tended to be flat or gently sloping with the exception of Field 1, which sloped sharply south-eastwards down to the River Leith, and Field 5 which sloped sharply northwards towards Warrengill Plantation (Fig 2).
- 4.1.4 The majority of the fields within the study area are large in size and irregular in shape, which would appear to be the result of post-medieval agricultural development.

4.2 RESULTS

- 4.2.1 **Field 1:** a stone terracing wall (Site **20**) extended north-east from the south-west corner of Waterfall Bridge. The wall measured at least 9.4m in length (its south end was increasingly covered in undergrowth) and consisted of five stone courses stepping down one course at a time to the river
- 4.2.2 A dry stone wall extended from the bridge, in a north-westerly direction along the edge of the field boundary and continued intermittently along this boundary. Parts of this wall had collapsed and tumbled into Field 1. The part of the wall nearest Waterfall Bridge appeared to be a relatively recent build and two ceramic pipes were built into it, presumably draining water from the road above (to the north-east). The other boundaries of this field were fenced, except for the north-east area in the vicinity of the terracing wall, which was bounded by the river.
- 4.2.3 **Field 2:** the boundaries of Field 2 comprised hedges and fences with an intermittent dry stone wall bounding the north. The access to this field was through a gate directly aligned with the railway bridge to the south-west.

Outside of this gateway, on the west side of it, was a collection of stones and boulders presumably cleared from the field relatively recently.

- 4.2.4 The railway bridge was constructed of red sandstone, and dry stone walls joined it on its north-east side. The north-westernmost drystone wall curved to the north where it met a field entrance. The south-easternmost of the walls headed north-east to a grassy track running parallel with the railway line. A track extended south-west from the bridge. It was bordered by hedges and fences and continued in a south-westerly direction beneath the M6 to Hackthorpe.
- 4.2.5 **Field 3:** the boundaries of Field 3 comprised hedges and fences, with a relatively modern fence on the east side separating it from the railway embankment. No archaeological sites were observed in this field.
- 4.2.6 **Field 7:** a stone hut (Site **21**) was noted on the south side of the track noted in Field 2 against the boundary of Field 7. The north-west wall of the hut was built into the dry stone wall, which extended from here to the boundary in the west corner of the field. To the north-east of the hut the field was bounded by a hedge and fence.
- 4.2.7 **Field 4:** three boulders (Site **22**) aligned north/south, extending for 2.5m, were recorded on the west side of the gateway into the east side of Field 4. These boulders appeared to be aligned with the boundary on the south side of the modern gate, which turned to be aligned east/west, thereby running along the north side of the trackway. These boulders, therefore, appeared to represent part of an old field boundary now replaced. The track observed in Field 2 ran parallel with the M6 motorway in Field 4 and was observed to be significantly lower than both the motorway to the west, and the field to the east, suggesting that it had been cut into the landscape possibly at the same time that the bridge was built. Equally, the land to the west of the track had been built up into an embankment sloping down from the motorway, and therefore represents a fairly modern dump of material.
- 4.2.8 **Field 5:** the remnants of a dry stone wall (Site **23**) were recorded in Field 5 on the north part of its western boundary. The wall comprised a low mound of grassed-over stones aligned north/south. To the north it met with the current boundary, which also consisted of a low mound, representing the remains of a wall, with a Hawthorn hedge growing over it. This boundary ran parallel with, and on the east side of, a stream to the north.
- 4.2.9 To the south, Wall **23** met an east/west boundary fence, which returned to the north approximately 4m west of the wall. The current Ordnance Survey 1:2500 map shows this return, as well as the continuation of this east-west boundary to the western boundary of the field with the A6. However, this western part no longer exists in the field. To the east the fenceline extended for approximately 70m and then returned towards the south-east. Just inside this corner (within Field 5) was a single gatepost no longer in use (Site **24**). This represents further alterations between the boundary of Field 5 and Field 6. This gatepost comprised one large sandstone block, rounded at its top and with

two iron fixtures on one side. Many comparable examples to this gatepost could be seen in the fields surveyed and in the village of Hackthorpe.

4.2.10 **Field 6:** Site **25** was located towards the north end of Field 6. This comprised a fairly pronounced hollow, 14m in diameter and approximately 1m in depth. It was fairly regular in shape with gently curved sides running down on to a flattish base. The function of this feature was unclear and it was uncertain whether it was a natural feature or a man-made one, possibly a quarry or a dew pond.

5. GAZETTEER OF SITES

Site number	01
Site name	Hackthorpe Settlement
NGR	NY 5460 2340
Site type	Settlement
Period	Iron Age/Romano-British
SMR No	2840
Sources	SMR, Aerial Photo Ref MU CS 34:14, MU CS 35:22-25, MU CS 97:15 (1/3/1975) Northern Archaeological Survey 1975, 25
Description	The site of cropmarks, apparently representing a settlement, although the aerial photograph is very difficult to interpret.
Assessment	The site mainly lies outside the easement of the proposed development, although the north-western edge of the site might fall within the pipeline easement and so be affected by the development

Site number	02
Site name	Hackthorpe Burial Cairn
NGR	NY 5480 2315
Site type	Burial Cairn
Period	Bronze Age
SMR No	2874
Sources	SMR, Collingwood 1926
Description	Tumulus, removed in the nineteenth century. Composed of soil, amongst which were bones and charcoal. Soil covered a stone circle with a radius of 10m. An inverted urn containing a cremation, and 12 other cremations, were found, four of which were in a pit. The lower tier of a cist at the centre of the circle contained human bones. Flint flakes and artefacts were found with some of the cremations
Assessment	The site lies outside the easement of the proposed development and will not be affected by it.

Site number	03
Site name	Long Barrow, Trainford Brow
NGR	NY 5369 2431
Site type	Long barrow
Period	Neolithic
SMR No	2877
S.A.M. No	23772
Sources	SMR
Description	A partly mutilated long barrow located on Trainford Brow a short distance north of Lowther village. It is aligned E-W and includes a mound of earth and stones with max dimensions of 104m long by 24m wide. At its eastern end it measures c3.5m high but the barrow tapers down towards the western end where it measures c1.5m high. Despite some quarrying at the monument's centre and southern side, the barrow survives reasonably well.
Assessment	The site lies outside the easement of the proposed development and will not be affected by it.

Site number	04
Site name	Burnbank Farmstead Site
NGR	NY 5530 2430
Site type	Farmstead
Period	Unknown
SMR No	5175
Sources	SMR, Aerial Photograph Ref Gas Corp

Description Possible farmstead site apparently appearing on a Gas Corp aerial photograph, although this photograph was not at the SMR and could not be consulted.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 05
Site name Lowther Village
NGR NY 5360 2360
Site type Building Complex
Period Post-medieval
SMR No 5484
LB SMR Nos. 25176-25181 (LB Grade II*)
Sources SMR, Ordnance Survey 1863, Pevsner 1967, 274, Aerial Photograph Ref CCC 2825:17.

Description Lowther Village, which was built between 1765 and 1773 and spasmodically thereafter, consists of 2 closes, both ending on the north side with a 7-bay, 2-storey house with a 3-bay centre and a hipped roof. The architect was probably James Adam. The side ranges of the west close are 21 bays long and articulated in height and roofs. The second close has as its side pieces single-storey terraces with southern returns running east and west. Finally, the east end of the composition is a crescent open to the east, broken by the road. The beginning and the end of both halves are marked by a higher square pavillion with a pyramid roof. The original plan for the building was for four ranges which would have made a complete circus.

Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 06
Site name Hackthorpe Ridge and Furrow
NGR NY 5490 2360
Site type Ridge and Furrow
Period Unknown
SMR No 6211
Sources SMR, Aerial Photographs Ref CCC 2803:3, CCC 2825:20, CCC 2825:27

Description Ridge and furrow.

Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 07
Site name Hackthorpe Ridge and Furrow
NGR NY 5410 2350
Site type Ridge and Furrow
Period Medieval
SMR No 6212
Sources SMR, Aerial Photograph Ref CCC 2803:4

Description Ridge and Furrow

Assessment The eastern extent of this site might lie within the easement of the proposed development and be affected by it.

Site number 08
Site name Lowther Cropmarks
NGR NY 5410 2290
Site type Dyke, enclosure and trackway
Period Unknown
SMR No 13587
Sources SMR, Aerial Photographs Ref CCC 3022:26-28 (5/7/1989)

Description Cropmarks of a dyke, trackway and possible enclosure.

Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 09
Site name Hackthorpe Village Hazard Area
NGR NY 5410 2320
Site type Hazard Area
Period Medieval
SMR No 6747
Sources SMR, Aerial Photograph Ref CCC 2825:18-19, MU CS 34:16 (1/3/75), OA North 2002, CFA 2003
Description The Hazard Area for Hackthorpe medieval village. A field system is visible on the aerial photograph CCC 2825:19 at NY 5420 2350. Work by OA North (OA North 2002) and CFA (CFA 2003) has illustrated the potential for the retrieval of medieval remains in the area designated as the Hazard Area.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 10
Site name Lowther Circular Enclosure Cropmark
NGR NY 5350 2420
Site type Circular Enclosure
Period Unknown
SMR No 13585
Sources SMR, Aerial Photo Ref CCC 3022:24
Description Cropmark of a possible circular enclosure
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 11
Site name Lowther Field System
NGR NY 5340 2370
Site type Field System and earthwork
Period Unknown
SMR No 13586
Sources SMR, Aerial Photograph Ref CCC 3022:25
Description The remains of a field system and other, unclassified, earthworks, shown on the aerial photograph.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 12
Site name Highcross Quarry
NGR NY 5332 2388
Site type Quarry
Period Post-medieval
SMR No 15450
Sources SMR, Ordnance Survey 1858
Description A quarry located in fields near Highcross Wood and Lowther village.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 13
Site name Bowberthill Quarries
NGR NY 5524 2375

Site type Quarry
Period Post-medieval
SMR No 15508
Sources SMR, Ordnance Survey 1863
Description Bowberthill Quarries comprise a number of quarries stretching from Bowberthill to Waterfall Bridge.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 14
Site name Great Strickland Cropmarks
NGR NY 5535 2380
Site type Cropmarks and earthwork
Period Unknown
SMR No 17000
Sources SMR, Aerial Photograph Ref CCC 2825:22
Description An aerial photograph reveals possible cropmarks and earthworks around the parish boundary between Lowther and Great Strickland.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 15
Site name Annular Bracelet
NGR NY 5400 2300
Site type Findspot
Period Roman
SMR No 19659
Sources SMR, Richardson 1998, 20
Description An annular bracelet (now sprung apart) of a simple undecorated type dating to the 3rd or 4th century AD was found in same field as two other Romano-British finds (see SMR Nos 19660 & 19674). This bracelet and SMR No 19660 may well have formed part of the coin hoard (SMR No 19674). Plain annular bracelets have been recovered from a number of Romano-British sites, including Colchester, Winchester and South Shields.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 16
Site name Pelta Mount
NGR NY 5400 2300
Site type Findspot
Period Roman
SMR No 19660
Sources SMR, Richardson 1998, 20
Description A circular mount with open-work pelta motifs found in the same area as the coin hoard (SMR No. 19674) and the bracelet (SMR No. 19659). Two circular sectioned attachment shanks project from the rear with the circular heads still intact. Pelta mounts such as this one have a wide distribution and were used for either decorating leather harness or personal equipment. There is a close parallel for the Hackthorpe mount from South Shields.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 17
Site name Coin Hoard
NGR NY 5400 2300

Site type	Findspot Roman
SMR No	19674
Sources	SMR, Richardson 1998, 24, Shotter 1994, 291-2
Description	A hoard of aes coins of late Roman date was found at Hackthorpe by a metal detector-operator in 1992. A few Romano-British pottery sherds and metal items of varying date were also found in the vicinity, (including SMR Nos 19659 & 19660).
Assessment	The site lies outside the easement of the proposed development and will not be affected by it.

Site number	18
Site name	Milestone
NGR	NY 5383 2377
Site type	Milestone.
Period	Post-medieval
LB SMR No	25153 (LB Grade II)
Sources	SMR, Ordnance Survey 1863
Description	A milestone located to the north of Hackthorpe and dated 1825. It consists of a fluted cast iron post with a rounded head inscribed to the left 'SHAP 6 MILES' and to the right 'PENRITH 4 1/2 MILES' with '1825' in centre.
Assessment	The site lies within the easement of the proposed development and may be affected by it.

Site number	19
Site name	Hackthorpe Field System
NGR	NY 5493 2381
Site type	Field System
Period	Medieval
SMR No	-
Sources	Lambert 1996, 194, OA North 2002
Description	Field System and Trackway
Assessment	The northern edge of the site might lie within the easement of the proposed development and may be affected by it.

Site number	20
Site name	Waterfall Bridge Terracing Wall
NGR	NY 5507 2400
Site type	Terracing wall
Period	Post-medieval (?)
SMR No	-
Sources	Walkover Survey
Description	A stone terracing wall extending from the south-west side of the bridge, aligned south-south-west/north-north-east. It is visible for 9.4m but may extend further into the undergrowth. It consists of five courses of stepped wall, with each step one course high.
Assessment	This wall lies to the immediate north-east of the proposed pipeline, and may be affected by it.

Site number	21
Site name	Hut, north-east of Hackthorpe
NGR	NY 5461 2371
Site type	Stone-built hut
Period	Post-medieval (?)
SMR No	-
Sources	Walkover Survey

Description A stone hut which shares its north-west wall with a north-east/south-west aligned dry stone wall forming a field boundary.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 22
Site name Field boundary north-east of Hackthorpe
NGR NY 5448 2349
Site type Stone field boundary
Period Post-medieval (?)
SMR No -
Sources Walkover Survey
Description Three large boulders aligned north/south extend into a field for 2.5m. They appear to represent the remains of a field boundary no longer in use.
Assessment This boundary lies on the route of the proposed pipeline, and may be affected.

Site number 23
Site name Field Boundary, Hackthorpe
NGR NY 5400 2367
Site type Dry stone wall
Period Post-medieval (?)
SMR No -
Sources Walkover Survey
Description The remains of a dry stone wall aligned approximately north/south. This would have originally formed a field boundary, but has now been replaced by a fence to the west. The wall survives as a low grass covered mound with some areas of stone visible.
Assessment This boundary lies on the route of the proposed pipeline, and may be affected.

Site number 24
Site name Gatepost, Hackthorpe
NGR NY 5407 2371
Site type Stone gatepost
Period Post-medieval (?)
SMR No -
Sources Walkover Survey
Description A red sandstone gatepost, with two iron fixtures attached, situated to the immediate north of a field boundary. The gatepost is no longer in use, but still stands in the field.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

Site number 25
Site name Hollow, Hackthorpe
NGR NY 5396 2382
Site type Hollow
Period Unknown
SMR No -
Sources Walkover Survey
Description A fairly pronounced circular scoop in a field. It measures 14m in diameter and approximately 1m in depth. Its edges are fairly gradually sloped and come down on to a flattish base. This could be a natural feature or it may be related to land use, for instance it could be a dew pond or quarry.
Assessment The site lies outside the easement of the proposed development and will not be affected by it.

6. SIGNIFICANCE OF THE REMAINS

6.1 INTRODUCTION

- 6.1.1 The SMR provided evidence of 18 sites within the study area (Sites **1-18**), to which can be added six sites identified during the walkover survey (Sites **20-25**) and one further site identified by previous fieldwork (Site **19**).
- 6.1.2 A single Scheduled Monument was identified within the study area (Site **03**), whilst a total of 16 listed buildings were identified (*Appendix 3*).

Period	No of sites	Sites
Neolithic	1	Long Barrow, Trainford Brow (Site 03)
Bronze Age	1	Hackthorpe Burial Cairn (Site 02)
Iron Age/ Romano-British	1	Hackthorpe Settlement (01)
Roman	3	Annular Bracelet (Site 15), Pelta Mount (Site 16), Coin Hoard (Site 17)
Medieval	3	Hackthorpe Ridge and Furrow (Site 07), Hackthorpe Village Hazard Area (Site 09), Hackthorpe Field System (Site 19)
Post-medieval	9	Lowther Village (Site 05), Highcross Quarry (Site 12), Bowberthill Quarries (Site 13), Milestone (Site 18), Waterfall Bridge Terracing Wall (Site 20), Hut (Site 21), Field Boundary (Site 22), Field Boundary (Site 23), Gatepost (Site 24)
Unknown	7	Burnbank Farmstead Site (Site 04), Hackthorpe Ridge and Furrow (Site 06), Lowther Cropmarks (Site 08), Lowther Circular Enclosure Cropmark (Site 10), Lowther Field System (Site 11), Great Strickland Cropmarks (Site 14), Hollow (Site 25)

Table 1: Number of sites by period

6.2 CRITERIA

- 6.2.1 There are a number of different methodologies used to assess the archaeological significance of sites; that to be used here is the ‘Secretary of State’s criteria for scheduling ancient monuments’ which is included as Annex 4 of PPG 16 (DoE 1990). The sites previously listed (*Section 4*, above) were each considered using the criteria, with the results below.
- 6.2.2 **Period:** the study area comprises sites spanning the Neolithic to the post-medieval periods including a number of sites that are characteristic types of

site for their particular period. The long barrow (Site **03**) characterises monumental burial practices within the Neolithic. Equally, the Bronze Age burial cairn (Site **02**) and Iron Age/Romano-British settlement (Site **01**) characterise the burial and settlement practices of their periods respectively. All of these sites lie outside the easement for the proposed pipeline. The medieval ridge and furrow (Site **07**) characterises agricultural practices in this period. This is also the only site within the easement of the proposed pipeline that is considered to be significant on account of this criteria.

- 6.2.3 **Rarity:** the coin hoard (Site **17**) is considered to be of at least regional rarity as it is the only hoard in the North-West that terminates in the early 350s and it is also rare to find a hoard with such a high proportion of coins of Magnentius (AD350-353 - Shotter, 1994, 291). The metalwork (Sites **15** and **16**) associated with the hoard is locally rare. The long barrow (Site **03**) is not only of national significance but is considered to be of regional rarity (Manby 1970), whilst the remainder of the sites, including all those within, or affected by, the easement of the proposed pipeline, Sites **07, 18, 20-23** and **25**, are not considered to be particularly rare.
- 6.2.4 **Documentation:** although the post-medieval sites in the study area (See Table 1, above) are covered by documentary sources (predominantly the cartographic sources), the study area is not considered to be sufficiently enhanced by this documentation to state that this added to its significance.
- 6.2.5 **Group Value:** the long barrow (Site **03**) is considered significant in terms of its group value when considered with the other known Neolithic monuments from the area (LUAU 1997c). The burial cairn (Site **02**) also gains significance when considered with the other Bronze Age features in the area (*Section 3.2.1*, above). The medieval sites (Sites **07, 09** and **19**) gain a degree of significance when considered together, as do the Roman sites (Sites **01, 15, 16** and **17**). There is, however, little to be gained from grouping together Sites **18, 20-23** and **25**, located within the easement of the proposed pipeline route.
- 6.2.6 **Survival/Condition:** the long barrow (Site **03**) survives to a good degree, despite some quarrying. The post-medieval sites (Sites **05, 12, 13, 18, 20, 21, 22, 23**, and **24**) all survive fairly well. The fact that most of the cropmark and earthworks sites (Sites **01, 04, 06, 07, 08, 10, 11** and **14**) were visible from aerial photographs illustrates their survival, at least when the photographs were taken. The coin hoard and associated metal finds (Sites **15, 16** and **17**) survive in museums, whilst the burial cairn (Site **02**) was removed in the nineteenth century. Sites **18, 20-23** and **25** lying within the proposed pipeline easement are not considered to be significant on account of their survival/condition.
- 6.2.7 **Fragility/Vulnerability:** none of the sites are considered to be particularly vulnerable, with the most vulnerable sites probably being the sites of cropmarks and earthworks (Sites **01, 04, 08, 10, 11, 14** and **19**), which are potentially at danger from agricultural activity. However, even these sites are not considered to be significant on the grounds of their Fragility or Vulnerability to the pipeline development.

- 6.2.8 **Diversity:** within the study area sites relating to burial practice (Sites **03** and **02**), settlement (Sites **01**, **05**, **09** and **10**), agriculture (Sites **07**, **19**, **21**, **22**, **23**, **24**, **04**, **06**, **08** and **11**), and industry (Sites **12** and **13**) have been identified. This assessment has, however, highlighted the large range of site types within the study area and the wide range of periods represented. The sites potentially within the pipeline easement, Sites **18**, **20-21** and **25** (*Section 6.1*), are not, however, considered to be significant on account of their diversity.
- 6.2.9 **Potential:** the potential of the study area lies mainly in its cropmark and earthwork sites (Sites **01**, **04**, **08**, **10**, **11**, **14** and **19**). For the area of the easement of the proposed pipeline, the sites discovered by this assessment have highlighted the potential for remains dating to a wide variety of periods. The study area's location to the south of the group of Neolithic monuments near Penrith (*Section 3.2.1*) and the long barrow (Site **03**) within the study area itself highlight the potential for Neolithic remains within the study area. Similarly, finds within both the study area and the immediate vicinity dating to the following periods demonstrate the high potential for uncovering archaeological remains during the course of the proposed works.

6.3 SIGNIFICANCE

- 6.3.1 Sites within the study area score highly in the criteria of period, rarity, group value and survival/condition, with Site **03** considered to be of national significance and Site **02** considered to be of high regional significance. The Roman coin hoard and associated metalwork (Sites **15**, **16** and **17**) are of regional importance, predominantly on the basis of rarity, but with group value and survival/condition criteria also contributing.
- 6.3.2 **Pipeline easement:** within the area of the proposed easement itself, potential and diversity seem to be the most significant criteria, as this assessment has highlighted the wide range of archaeological sites within the vicinity, suggesting further undiscovered sites may be uncovered during the course of the wastewater treatment improvement works.

7. IMPACT AND RECOMMENDATIONS

7.1 IMPACT

7.1.1 This assessment has highlighted the widespread remains of field systems (Sites **06, 07, 08, 11, 14** and **19**) and settlement remains (Sites **01, 04 09** and possibly **10**) surviving within the study area, leading to the possibility of the survival of further undiscovered sites. The assessment has also identified sites dating to a wide range of periods (see *Table 1*).

7.1.2 The assessment highlighted seven sites (Sites **01, 07, 18, 19, 20, 22, 23**) that may be impacted upon by the proposed development, one of which (Site **18**) is a listed building.

7.2 RECOMMENDATIONS

7.2.1 The listed building (Site **18**) must be protected during the works and it is recommended that it is cordoned off before any development commences. Topographic surveys are recommended for the earthwork sites (Sites **07** and **19**). An evaluation in the immediate vicinity of Site **01** is recommended to be followed by a permanent presence watching brief during the course of the invasive groundworks along the course of the pipeline. This should be sufficient to locate and record any of the sites that extend into the easement.

Site No	Type	Period	Impact	Recommendations
01	Settlement	Iron Age/Romano-British	May be affected	Evaluation
07	Ridge and Furrow	Medieval	May be affected	Topographic Survey
18	Milestone	Post-medieval	May be affected	Client to ensure no impact on milestone
19	Field System	Medieval	May be affected	Topographic Survey
20	Terracing Wall	Post-medieval	May be affected	Watching brief
22	Field Boundary	Post-medieval	Likely to be affected	Watching brief
23	Field Boundary	Post-medieval	Likely to be affected	Watching Brief

Table 2: Recommendations for sites that may be impacted upon

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9. ILLUSTRATIONS

9.1 LIST OF FIGURES

Figure 1: Site Location Map

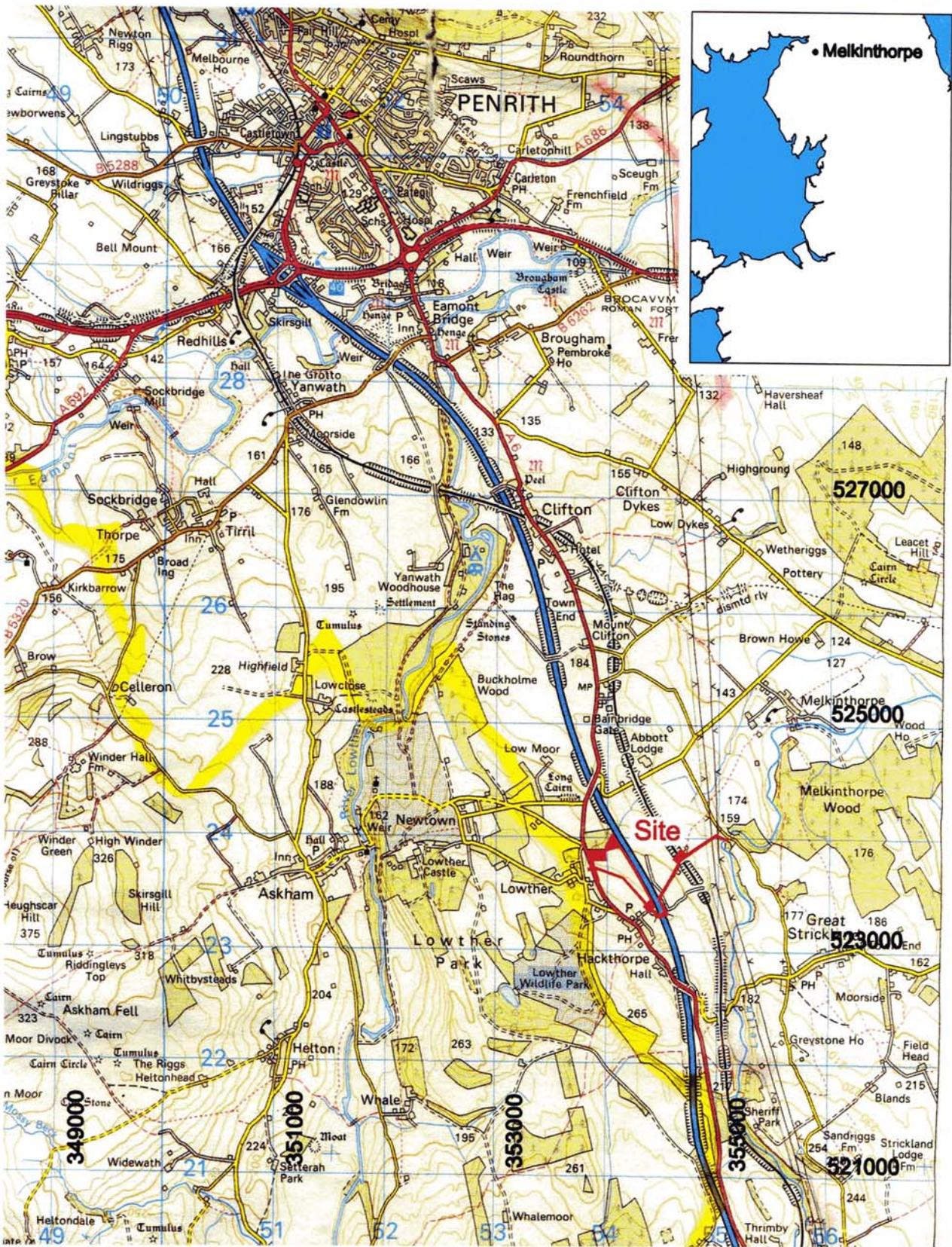
Figure 2: Plan of Gazetteer Sites

Figure 3: Ordnance Survey 1863, 1st Edition. 6" : 1 mile

9.2 LIST OF PLATES

Plate 1: Site **20**, north-west-facing

Plate 2: Site **22**, west-facing

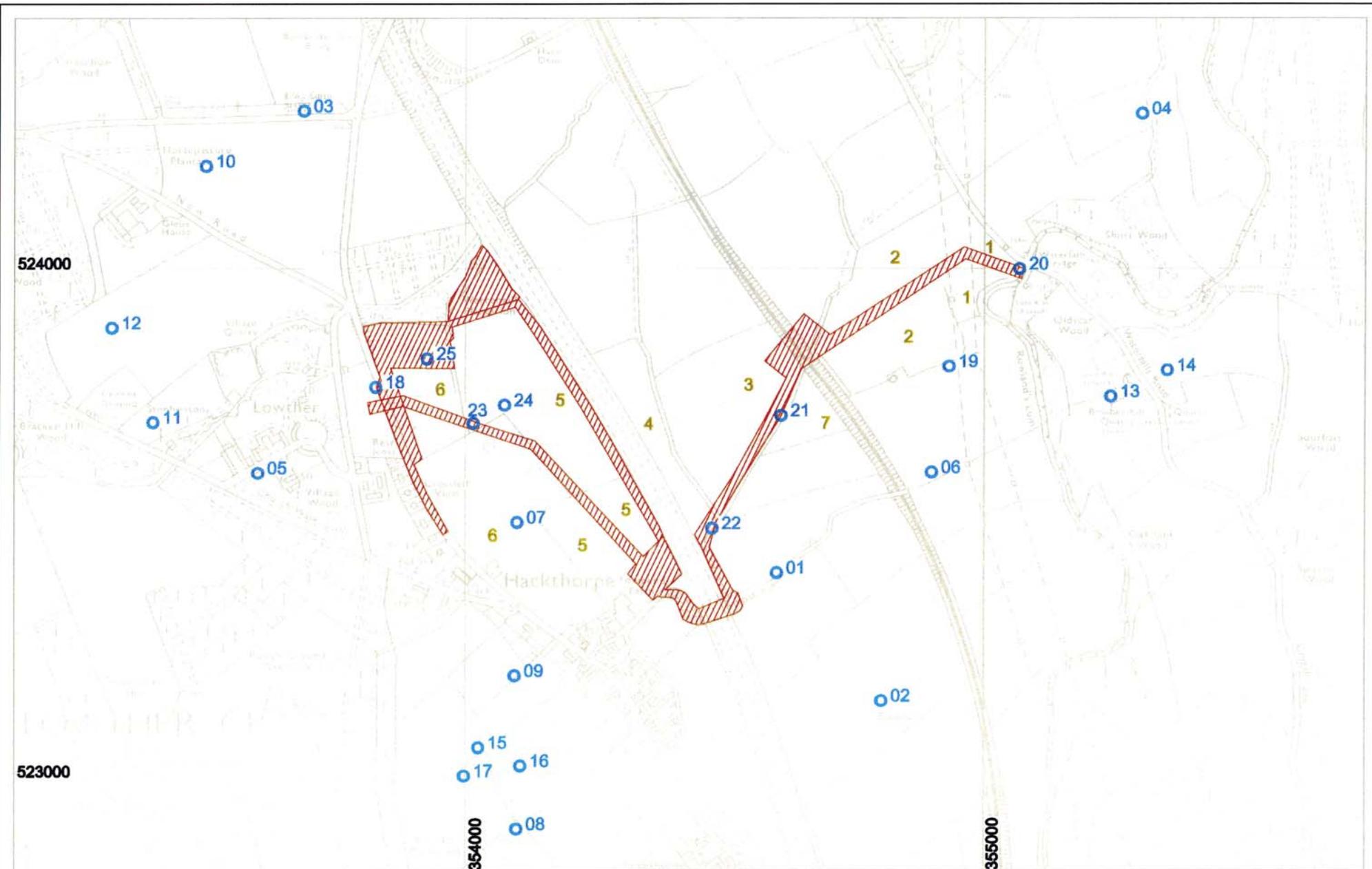


based upon the Ordnance Survey 1:50000
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0 500 1000
metres

Figure 1: Location Map



based upon the Ordnance Survey 1:50000
 with the permission of the controller of HMSO
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 Route
 1 Field numbers
 01 Site numbers

Scale 1:10,000

0 200m



Figure 2: Plan of gazetteer sites



Plate 1: Site **20**, north-west-facing



Plate 2: Site **22**, west-facing

APPENDIX 1: PROJECT BRIEF

**BRIEF FOR AN ARCHAEOLOGICAL WALKOVER SURVEY & WATCHING BRIEF
ON THE HACKTHORPE PIPELINE, WwTW & OUTFALL SCHEME**

HACKTHORPE, CUMBRIA

Issued by the

County Archaeology Service
Environment Unit, Community Economy and Environment



COUNTY COUNCIL

Date of Brief: 06 September 2004

This Design Brief is only valid for 1 year after the above date. After this period the County Archaeology Service should be contacted. Any specification resulting from this Brief will only be considered for the same period.

1. SITE DESCRIPTION AND SUMMARY

Site: Hackthorpe pipeline, WwTW & outfall

Grid Reference: NY 5380 2374 – NY 5507 2399

Detailed proposals and tenders are invited from appropriately resourced, qualified and experienced archaeological contractors to undertake the archaeological project outlined by this Brief and to produce a report on that work. The work should be under the direct management of either an Associate or Member of the Institute of Field Archaeologists, or equivalent. No fieldwork may commence until approval of a specification has been issued by the County Archaeology Service.

2. PLANNING BACKGROUND

- 2.1 Cumbria County Council's Archaeology Service (CCAS) has been consulted by United Utilities regarding a proposed scheme for a water pipeline, wastewater treatment works and outfall at Hackthorpe, south of Penrith.
- 2.2 The scheme affects an area of archaeological significance and consequently a programme of archaeological works is required comprising a rapid desk based assessment, walkover survey and watching brief during the course of the ground works.
- 2.3 This advice is given in accordance with the advice of the Water Industry Act 1991 Code of Practice on Conservation, Access and Recreation 2000.

3. ARCHAEOLOGICAL BACKGROUND

- 3.1 The route lies in an area of prehistoric potential with a Neolithic long barrow to the north of the site (SMR no. 2877) and a Bronze Age cairn covering multiple cremations was excavated to the south (SMR no. 2874). Aerial photographs indicate that a cropmark of a possible prehistoric settlement is located adjacent to part of the route (Sites & Monuments Record no. 2840), although this interpretation should be treated with some caution.
- 3.2 Two areas of earthworks of medieval ridge and furrow field systems also lie on, and close to, the pipeline route (SMR nos. 6211 & 6212).

4. SCOPE OF THE PROJECT

4.1 Objectives

- 4.1.1 To identify any surviving archaeological remains within the working easement, soil strip and pipe trench cut and to investigate and record any revealed archaeological remains or deposits.

4.2 Work Required

- 4.2.1 Before any on site work commences the County Sites and Monuments Record should be consulted and a rapid desk-based survey of the existing resource undertaken. This should include an assessment of those primary and secondary sources referenced in the County Sites and Monuments Record.
- 4.2.2 A walkover survey of the pipeline route, encompassing the proposed working easement as a minimum. Any surface features of potential archaeological interest should be recorded together with areas of potentially significant disturbance, and hazards and constraints to undertaking further archaeological work on site (including the siting of live services, Tree Preservation Orders and public footpaths).
- 4.2.3 All topsoil stripping and footings excavated outside road surfaces must be carried out under archaeological supervision. Any putative archaeological features must then be cleaned by hand and if possible a stratigraphic record made. Finds and environmental samples should be retrieved as appropriate. A reasonable period of uninterrupted access should be allowed to the archaeologist for all necessary archaeological recording. Both

archaeological features observed in the soil strip for any working easement and the excavation for the pipe trench should be subject to the archaeological recording outlined above

5. SPECIFICATION

- 5.1 Before the project commences a specification must be submitted to and approved by the County Archaeologist.
- 5.2 Proposals to meet this Brief should take the form of a detailed specification prepared in accordance with the recommendations of *The Management of Archaeological Projects*, 2nd ed. 1991, and must include:
- ❖ A description of the methods of observation and recording system to be used
 - ❖ A description of the finds and environmental sampling strategies to be used
 - ❖ A description of the post excavation and reporting work that will be undertaken
 - ❖ Details of key project staff, including the names of the project manager, site supervisor, finds and environmental specialists and any other specialist sub-contractors to be employed
 - ❖ Details of on site staffing, e.g. the number of people to be employed on site per day
 - ❖ A projected timetable for all site work and post excavation work (through to final publication of results)
- 5.3 Any significant variations to the proposal must be agreed by the County Archaeologist in advance.

6. REPORTING AND PUBLICATION

- 6.1 The archaeological work should result in a report, this should include as a minimum:
- ❖ A site location plan, related to the national grid
 - ❖ A front cover/frontispiece which includes the planning application number and the national grid reference of the site
 - ❖ A concise, non-technical summary of the results
 - ❖ A description of the methodology employed, work undertaken and the results obtained
 - ❖ Plans and sections at an appropriate scale showing the location and position of deposits and finds located
 - ❖ A list of, and dates for, any finds recovered and a description and interpretation of the deposits identified
 - ❖ A description of any environmental or other specialist work undertaken and the results obtained
 - ❖ The dates on which the project was undertaken
- 6.2 Three copies of the report should be deposited with the County Sites and Monuments Record within six months of completion of fieldwork. This will be on the understanding that the report will be made available as a public document through the County Sites and Monuments Record.
- 6.3 A summary report should be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork. If archaeological remains of significance are identified, one or more full reports should also be submitted to a suitable journal or other publication in due course.
- 6.4 Cumbria SMR is taking part in the pilot study for the *Online Access to Index of Archaeological Investigations* (OASIS) project. The online OASIS form at <http://ads.ahds.ac.uk/project/oasis> must therefore also be completed as part of the project. Information on projects undertaken in Cumbria will be made available through the above website, unless otherwise agreed.

7. THE ARCHIVE

- 7.1 An archive must be prepared in accordance with the recommendations of *The Management of Archaeological Projects*, 2nd ed. 1991, and arrangements made for its deposit with an appropriate repository. A copy shall also be offered to the National Monuments Record.

7.2 The landowner should be encouraged to transfer the ownership of finds to a local or relevant specialist museum. The museum's requirements for the transfer and storage of finds should be discussed before the project commences.

7.3 The County Archaeological Service must be notified of the arrangements made.

8. PROJECT MONITORING

8.1 One weeks notice must be given to the County Archaeology Service prior to the commencement of fieldwork.

9. FURTHER REQUIREMENTS

9.1 It is the archaeological contractor's responsibility to establish safe working practices in terms of current health and safety legislation, to ensure site access and to obtain notification of hazards (eg. services, contaminated ground, etc.). **The County Archaeology Service bears no responsibility for the inclusion or exclusion of such information within this brief or subsequent specification.**

9.2 The Code of Conduct of the Institute of Field Archaeologists must be followed.

9.3 The involvement of the County Archaeology Service should be acknowledged in any report or publication generated by this project.

10. FURTHER INFORMATION

For further information regarding this Brief, contact

Jeremy Parsons
Assistant Archaeologist
Cumbria County Council
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Kendal
Cumbria LA9 4RQ
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Email: Jeremy.Parsons@cumbriacc.gov.uk

For further information regarding the County Sites and Monuments Record, contact

Jo Mackintosh
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As part of our desire to provide a quality service to all our clients we would welcome any comments you may have on the content or presentation of this design brief. Please address them to the Assistant Archaeologist at the above address.

APPENDIX 2: PROJECT DESIGN

1. INTRODUCTION

- 1.1 United Utilities (hereafter the client) are proposing the construction of a new Wastewater Treatment Works and outfall pipe at Hackthorpe, Cumbria (NY 5380 2374 to NY 5507 2399). As the scheme will affect an area rich in prehistoric remains the Cumbria County Council's Archaeology Service has issued a brief for a programme of archaeological works to be undertaken.
- 1.2 The area of the proposed pipeline is known to have been a focus for prehistoric activity and settlement. Recorded sites in close proximity to the proposed route include a Neolithic long barrow (SMR 2877) and a Bronze Age cairn (SMR 2874). Other sites include a cropmark indicating a possible prehistoric settlement (SMR 2840) and two areas of medieval ridge and furrow (SMR 6211 and 6216).
- 1.3 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.
- 1.4 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 for accurate recording of any archaeological deposits that are disturbed by topsoil stripping activities and trench cutting associated with the pipeline. A rapid desk-based assessment will precede a programme of fieldwork to place any findings that are made in to the context of known archaeological sites and/or artefact discovery sites in the immediate vicinity.
- 2.2 A written report will assess the significance of the data generated by the desk-based assessment and subsequent fieldwork, within a local and regional context.

3 METHOD STATEMENT

3.1 DESK-BASED ASSESSMENT

- 3.1.1 The following will be undertaken as appropriate, depending on the availability of source material. The level of such work will be dictated by the time scale of the project.
- 3.1.2 **Documentary and Cartographic Material:** this work will comprise a rapid desk-based assessment of the existing resource. It will include an appraisal of the data in the CSMR (Kendal), appropriate sections of County histories, early maps (printed and manuscript), and such primary documentation (tithes and estate plans etc.) as may be reasonably available. Particular attention will be paid to field and place names recorded on early cartographic sources relating to estate and parish boundaries, field boundaries, woodlands and routes, as these often provide important evidence of archaeological activity and transformation of the historic landscape. All available published and unpublished documentary sources will also be examined and assessed. The Cumbria Record Office (Carlisle) will also be consulted.

- 3.1.3 **Aerial Photography:** any relevant photographic material held by Cumbria County Council will also be studied. This may indicate the range and survival of archaeological and structural features in the designated area no longer visible at ground level.
- 3.1.4 **Physical Environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken in order to set the archaeological features in context. Any engineering and/or borehole data relating to the site will also be examined.
- 3.2 **WALKOVER SURVEY**
- 3.2.1 **Visual Inspection:** following the desk-based assessment a level I walkover survey (*Appendix 1*) will be undertaken to relate the existing landscape to research findings. This will encompass one-hundred metre corridor along either side of the pipeline, walked in a systematic fashion. Archaeological features identified within the landscape will be recorded using the relevant OA North pro forma, and the features accurately positioned with the use of either a GPS, which can achieve accuracies of $\pm 0.1\text{m}$ with respect to the OS national grid, or by manual survey techniques which will tie in new features to features already shown on the relevant OS map.
- 3.3 **Watching Brief**
- 3.3.1 A programme of field observation will record accurately the location, extent, and character of any surviving archaeological features and/or deposits within the area of topsoil stripping and footings outside road surfaces. 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.
- 3.3.2 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 (ie 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).
- 3.3.3 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 the County Archaeology Service and will require a variation to costing.
- 3.3.4 **Written Record:** during this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed. All information identified in the course of the site works will be recorded stratigraphically utilising OA North pro-forma. Areas of excavation will be assigned trench numbers and context numbers will be applied to archaeological features.
- 3.3.5 **Site Drawings:** a large-scale plan (provided by the client) will be produced of the area of the groundworks showing the location and extent of the ground disturbance, appropriately labelled to correspond with the written record. Archaeological features will be recorded accurately (either on plan (1:20) and/or section (1:10), and as grid co-ordinates where appropriate).

- 3.3.6 The site drawings will be manipulated in an industry standard CAD package (AutoCAD release 14/release 2000) for the production of final drawings.
- 3.3.7 A photographic record will be undertaken simultaneously. This will utilise a 35mm camera for the production of both colour slides and monochrome prints. A photographic scale will appear in all images captured. The photographic index will describe and locate each area/feature photographed.
- 3.3.8 **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. CCCAS 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.
- 3.3.9 **Treatment of finds:** no sampling of finds will take place during fieldwork. 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.
- 3.3.10 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.
- 3.3.11 **Treasure:** any gold and silver artefacts recovered during the course of the excavations 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.
- 3.4 **REPORT AND ARCHIVE**
- 3.4.1 **Interim Statement:** in the event that further work is recommended an interim statement will be issued. In this instance or in the event that the client specifically requests an interim statement it should be noted that all illustrations will be copies of field drawings and not completed CAD drawings.
- 3.4.2 **Final Report:** two copies of the final report will be submitted to the client and a further two to CCCAS. Both paper and digital copies will be provided on CD-ROM in pdf format. The report will present the following information:
- (i) **Summary:** a summary statement of the findings;
 - (ii) **Introduction:** the background to the project including location details;
 - (iii) **Methodology:** an outline of the methodology of all elements of the programme of work;
 - (iv) **Historical Background:** a brief historical background to the site;
 - (v) **Results:** an account of the past and present land use of the study area;
- An account of known sites identified through the study of documentary sources;
- Any evidence for the remains of archaeological sites identified by the walkover;
- An account of archaeological features identified during the course of the watching brief:

- (vi) **Discussion:** a discussion of the relative significance of sites within the study area;
A description of the significance of the study area in its local and regional context;
- (vii) **Impact/Recommendations:** the identification of areas where further development will impact upon the archaeological resource in addition to the impacts of the current development;
- (viii) **Illustrations:** maps, plans, sections and copies of the site photographic archive;
- (ix) **Appendices:** a copy of the brief and this project design;

3.4.3 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.

3.4.4 **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.

3.4.5 **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). This archive, including a copy of the report, will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the SMR (the index to the archive and a copy of the report). In this instance the archive will be submitted to the County Record Office (Carlisle).

3.4.6 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.

4 PROJECT MONITORING

4.1 Monitoring of this project will be undertaken through the auspices of the CCC Archaeologist, who will be informed of the start and end dates of the work.

5 WORK TIMETABLE

5.1 The desk-based assessment is expected to take in the region of five days to complete.

5.2 It is anticipated that the rapid walkover survey will take in the region of two days.

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

5.4 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 desk-based assessment will be undertaken by **Daniel Elsworth MA** (OA North Project Supervisor). Daniel has a great deal of experience in documentary research, and in particular for the county of Cumbria.

6.3 Present time-tabling constraints preclude detailing at this stage exactly who will be undertaking the rapid walkover survey and evaluation trenching, but both of these elements of

the project are likely to be supervised by an OA North project supervisor experienced in these types of project. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes.

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 1: LEVEL 1 SURVEY

The survey outlined is based on survey levels defined by the Royal Commission on the Historical Monuments of England (RCHM(E)) and are in accordance with stages of evaluation defined by the Association of County Archaeological Curators (ACAO 1993).

Level 1 Survey (Assessment)

This is a rapid level of survey (Site Inspection in project design) typically undertaken alongside a desk-top study as part of the site assessment (ACAO 1993, 14). It is an initial site inspection, which helps the local planning authority to consider fully the archaeological implications of a planning proposal and also serves as the basis for undertaking and planning further archaeological work on the site.

The Level 1 survey represents the minimum standard of record and is appropriate to exploratory survey aimed at the discovery of previously unrecorded sites. Its aim is to record the existence, location and extent of an archaeological site. The emphasis for the recording is on the written description, which should record type and period and would not normally exceed *c.* 50 words.

The location and extent of the sites is typically shown on 1:2,500 or 1:10,000 OS maps as requested by the client. The extent of a site is only defined for sites greater than 50m in size and smaller sites are shown with a cross.

There are two alternative techniques (Levels 1a and 1b), which provide different accuracy levels and have different applications:

Level 1a

The sites are located by manual distance measurement techniques (eg pacing) with respect to field boundaries and provide an accuracy of +/- 10m (8 figure grid ref.). The loss of accuracy is offset by the slightly reduced costs; however, it is only appropriate for enclosed land, because of the paucity of usable topographic detail.

Level 1b

The sites are located using Global Positioning System (GPS) techniques, which uses electronic distance measurements along radio frequencies to satellites to enable a fix in Latitude and Longitude, which can be converted mathematically to Ordnance Survey National Grid. As long as differential GPS techniques are employed then it is possible to achieve accuracies of better than +/- 1m. There is a slightly increased cost implication by comparison with Level 1a survey, but it can be undertaken in most terrains, even some woodland.

APPENDIX 3: LISTED BUILDINGS

Type	No. of Sites	Sites
Milestone	1	Milestone North of Hackthorpe (LB 25153, Site 18)
House	7	Thorpe Grange (LB 25154), Boxwood Cottage (LB 25156), 1-12 Lowther Village (LB 25176), 13-20 Lowther Village (LB 25177), 21-22 Lowther Village (LB 25179), 23-26 Lowther Village (LB 25180), Lowther Cottage (LB 25181)
Farmhouse	4	Bush Cottage (LB 25155), Townend Farmhouse (LB 25158), Brockle Bank (LB 25159), Hill Rise (LB 25160),
Public House	1	Lowther Castle Inn (LB 25157)
Barn	2	Barn south of Hill Rise (LB 25161), Barns adjoining north of Hackthorpe Hall (LB 25163)
Pump and Trough	1	Pump and Trough, Lowther Village (LB 25178),