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HISTORIC BUILDING RECORDING  
ENVIRONMENTAL SERVICES



**UNITED UTILITIES  
BRIDEKIRK TO COCKERMOUTH**

**ARCHAEOLOGICAL WALKOVER SURVEY**

**May 2015**

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**UNITED UTILITIES**

**BRIDEKIRK TO COCKERMOUTH**

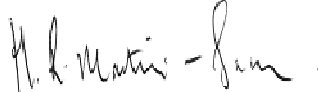
**Archaeological Walkover Survey**

**April 2015**

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## FIGURES

Figure 1: Location of Heritage Assets

## **SUMMARY**

Wardell Armstrong Archaeology was commissioned by United Utilities to undertake a walk over survey for the installation of a new pipeline located from land south east of Bridekirk (OS grid reference NY 12819 33558) running to west of Cockermouth (OS grid reference NY 10020 30986). This pipeline is part of three groups of pipeline routes being archaeologically assessed; other work on the scheme is being undertaken by Oxford Archaeology North and CFA Archaeology Ltd.

This work was undertaken along with a previous desk based assessment (WAA, 2014) to identify heritage assets along the length of the 100m wide pipeline corridor. The walkover survey identified 23 new heritage assets.

## **ACKNOWLEDGEMENTS**

Wardell Armstrong Archaeology thanks United Utilities for commissioning the project, especially Anna Smith. Additionally WAA are grateful to Peter Bascombe for arranging access to the land for the walkover survey.

The walkover survey was undertaken by Ed Johnson and Helen Phillips. The report was written by Ed Johnson, and the drawings were produced by Adrian Bailey. The project was managed by Richard Newman, WAA Post- Excavation Manager, who also edited the report.

## 1 INTRODUCTION

### 1.1 Circumstances of the Project

1.1.1 The archaeological walkover survey was undertaken in response to United Utilities proposed pipeline route in West Cumbria. The route discussed in this report is one of several routes with other routes being surveyed by Wardell Armstrong Archaeology along with Oxford Archaeology North and CFA Archaeology Ltd. The route, which begins at Pinggy Wood, south east of the village of Bridekirk and finishes close to the A66, west of Cockermouth, covers approximately 5km of mainly improved pasture farmland.

1.1.2 The Survey, which was based on a previous desk based assessment by WAA (2014), examined a 100m corridor along the route of the proposed pipeline assessing previously identified heritage assets and identifying unrecorded sites.

### 1.2 Location, Topography and Geology

1.2.1 The study area is aligned along a route extending from Pinggy Wood, Bridekirk (NY 12819 33558) to an area close to the A66, west of Cockermouth (NY 10020 30986). The survey area for the most part covers undulating improved pasture land. The entirety of the pipeline lies within the county of Cumbria.

1.2.2 **Topography:** the route begins in pasture land south-west of Bridekirk close to Pinggy Wood at approximately 130m aOD before crossing to the south side of the A595 before continuing west towards Cockermouth. The pipeline crosses the A595 again and crosses more pasture land close to Ann's Hill Lodge, descending to approximately 110m aOD before crossing the A594 and continuing south-west.

1.2.3 The route passes close to Papcastle, Cockermouth, the site of a Roman fort, and crosses over the route of an associated Roman road before dropping to approximately 35m aOD and crossing the river Derwent; ending on the southern side of the A66 west of Cockermouth.

1.2.4 **Geology:** the route mainly covers an area of Frizington and Eskett limestone formation which covers the route of the pipeline until an area west of Cockermouth. The route is then made up of a mix of the former and Cockermouth basalt volcanic formation along the route of the river Derwent.

1.2.5 The drift geology of the area comprises predominantly alluvium in the valleys, and glacial till elsewhere. The route mainly passes through an area of wet slowly permeable clayey loam soils, however around the river Derwent this changes to a freely draining floodplain soil. (British Geological Survey: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)

1.2.6 **Historic Landscape Character:** The proposed pipeline is situated within part off west Cumbria defined as historic character area 18, Ellen and Marron Valleys (Cumbria County Council 2009).

1.2.7 The Ellen and Marron Valleys character area contains the historic town of Cockermouth. Settlement patterns in the area have been impacted by 19<sup>th</sup> century industrialisation along with 20<sup>th</sup> century settlement expansion. Within the area as well as nucleated settlements there are many discrete farmsteads and other homesteads away from the nucleations. The fieldscape is mainly based on former open common fields with some planned and ancient enclosure. These fields are mainly bounded with hedgerows with the area towards the Bassenthwaite and Lorton Valley having many more mature trees. Woodland in the area is mainly planned and modern in origin, sometimes forming shelter belts.

### 1.3 **Planning Background And Legislative Framework**

1.3.1 National planning policies on the conservation of the historic environment are set out in the National Planning Policy Framework (NPPF), which was published by the Department of Communities and Local Government (DCLG) in March 2012. Sites of archaeological or cultural heritage significance that are valued components of the historic environment and merit consideration in planning decisions are grouped as 'heritage assets'; 'heritage assets are an irreplaceable resource', the conservation of which can bring 'wider social, cultural, economic and environmental benefits...' (DCLG 2012, Section 12.126). The policy framework states that the 'significance of any heritage assets affected, including any contribution made by their setting' should be understood in order to assess the potential impact (DCLG 2012, Section 12.128). In addition to standing remains, heritage assets of archaeological interest can comprise sub-surface remains and, therefore, assessments should be undertaken for a site that 'includes or has the potential to include heritage assets with archaeological interest' (DCLG 2012, Section 12.128).

- 1.3.2 NPPF draws a distinction between designated heritage assets and other remains considered to be of lesser significance; 'great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be; substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, including scheduled monuments, protected wreck sites, battlefields, grade I and II\* listed buildings and grade I and II\* registered parks and gardens and World Heritage Sites, should be wholly exceptional' (DCLG 2012, Section 12.132). Therefore, preservation in-situ is the preferred course in relation to such sites unless exception circumstances exist.
- 1.3.3 It is normally accepted that non-designated sites will be preserved by record, in accordance with their significance and the magnitude of the harm to or loss of the site as a result of the proposals, to 'avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposals' (DCLG 2012, Section 12.129). Non-designated heritage assets of archaeological interest will also be subject to the policies reserved for designated heritage assets if they are of equivalent significance to scheduled monuments (DCLG 2012; Section 12.132).



## 2 METHODOLOGY

### 2.1 Project Design

2.1.1 Wardell Armstrong Archaeology was commissioned by United Utilities to undertake a walkover survey on the proposed layout of a pipeline from Cockermouth to Stainburn Hall Farm. This survey was based on a previous desk-based assessment of the area covered by the proposed pipeline (Peters, 2014) focusing on a 100m wide corridor for the development. All work undertaken was consistent with the relevant standards and procedures set out by the Chartered Institute for Archaeologists (CIfA, 2014).

2.1.2 The survey consisted of a level 1 survey as set out in the English Heritage guidelines for landscape survey (English Heritage, 2007). A level one survey will typically consist of a core monument record, a written account of any findings and any survey drawings which contribute to the survey. A level one survey is the least complex of surveys and will be typically undertaken when the 'aim is to provide essential core information to agreed standards' (English Heritage, 2007)

### 2.2 The Archive

2.2.1 A digital copy of the report will be deposited with Cumbria County Councils Historic Environment Record, Kendal, where viewing will be available on request.

2.2.2 Wardell Armstrong Archaeology Ltd and Cumbria County Council support the **Online Access to the Index of archaeological investigations (OASIS)** project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this study will be made available by Wardell Armstrong Archaeology, as a part of this national project. This project has the unique identifier of wardella2-210119

### 2.3 Assessment Methodology

2.3.1 The results of the assessment have identified the significance of the known archaeological resource of the study area. In order to assess the potential impact of the pipeline proposals, consideration has been afforded to:

- the magnitude of impact;

- reviewing the evidence for past impacts that may have affected the heritage assets identified during the desk-based assessment;
- assessing the likely effect on heritage asset significance that may occur as a result of a given magnitude of impact;
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce, or remediate adverse impacts.

2.3.2 Such impacts on the identified archaeological sites may be:

- positive or negative;
- short, medium or long term;
- direct or indirect;
- reversible or irreversible.

Significance	Designation	Asset types and justification	Preferred response to negative impact
International	Non-statutorily designated heritage assets	World Heritage Site (NPPF s132)	Avoid negative impact where asset contributes to the WHS's defined outstanding universal values (NPPF s 138)
National	Statutorily designated heritage assets.	Scheduled monuments, grade I and II* listed buildings (NPPF s132).	Avoid negative impact.
National	Non-statutorily designated heritage assets.	Registered battlefields, grade I and II* Registered Parks and Gardens (NPPF s132).	Avoid negative impact.
National	Non-designated heritage assets of demonstrable equivalence to a scheduled monument (NPPF s138).	Assets where assessment for designation is pending, assets that have been assessed as being capable of designation but have not been designated at the SoS discretion, assets worthy of designation but which are outside the scope of the 1979 Act (NPPF s139).	Avoid negative impact.
District or County (higher)	Statutorily designated heritage assets.	Grade II listed buildings (NPPF s132).	Limit negative impact (avoid substantial harm) and mitigate.
District or County (higher)	Non-statutorily designated heritage assets.	Conservation area (NPPF s127), grade II registered park and garden (NPPF s132).	Limit negative impact (avoid substantial harm) and mitigate.
District or County (lesser)	Non-designated heritage assets within a national park or AONB.	Any extant heritage assets (NPPF s115) that are not otherwise given a higher significance.	Limit negative impact and mitigate.
District or County (lesser)	Non-designated heritage assets.	Heritage assets placed on a local planning authority list (NPPG).	Limit negative impact and mitigate.
District or County (lesser)	Non-designated heritage assets.	Any area of potential listed in a local plan (NPPG).	Limit negative impact and mitigate.
Local	Non-designated heritage assets.	Any extant heritage assets outside of a national park or AONB.	Mitigate.
Negligible	Non-designated heritage assets.	Heritage assets recorded in the HER that are no longer extant, individual find spots.	No action.

*Table 1: Definition of Heritage Asset Significance*

Magnitude of impact	Heritage Asset		
	Archaeological Remains (Archaeological Interest)	Historic Buildings (Architectural/Artistic Interest and/or Historic Interest)	Historic Landscapes (Historic Interest)
Loss	<ul style="list-style-type: none"> <li>Removal or change to most or all key archaeological materials, such that the resource is totally altered and its heritage significance completely reduced</li> </ul>	<ul style="list-style-type: none"> <li>Demolition or change to key historic building elements, such that the asset is totally altered and its heritage significance completely reduced.</li> </ul>	<ul style="list-style-type: none"> <li>Major alteration to historic landscape character resulting from:</li> <li>Changes to most key historic landscape elements, parcels or components.</li> <li>Extreme visual effects</li> <li>Major change to noise or change to sound quality such that the opportunity to appreciate the landscape is removed</li> <li>Major changes to use of highways and PROW resulting in loss of access.</li> </ul>
	<ul style="list-style-type: none"> <li><i>Major changes to setting where the setting elements affected are key to the significance of the asset</i></li> </ul>		
Substantial	<ul style="list-style-type: none"> <li>Changes to many key archaeological materials, such that the resource is clearly modified.</li> </ul>	<ul style="list-style-type: none"> <li>Changes to many key historic building elements, such that the asset is significantly modified.</li> </ul>	<ul style="list-style-type: none"> <li>Considerable change to historic landscape character resulting from:</li> <li>Changes to many key historic landscape elements, parcels or components</li> <li>Visual change to many key aspects of the historic landscape</li> <li>Widespread noticeable differences in noise or sound quality reducing the ability to appreciate the landscape.</li> <li>Changes to use or access of highways and PROW greatly reducing access.</li> </ul>
	<ul style="list-style-type: none"> <li><i>Major changes to the setting where setting elements affected make a contribution to the significance of the asset</i></li> <li><i>Moderate changes to setting where setting elements affected are key to the significance of the asset</i></li> </ul>		
Less than substantial	<ul style="list-style-type: none"> <li>Changes to key archaeological materials, such that the asset is slightly altered</li> </ul>	<ul style="list-style-type: none"> <li>Change to key historic building elements, such that the asset is slightly different</li> </ul>	<ul style="list-style-type: none"> <li>Limited change to historic landscape character resulting from:</li> <li>Changes to some key historic landscape elements, parcels or components</li> <li>Slight visual changes to some key aspects of the historic landscape</li> <li>Limited changes to noise levels or sound quality</li> <li>Slight changes to use highways and PROW slightly reducing access.</li> </ul>
	<ul style="list-style-type: none"> <li><i>Moderate changes to setting where setting elements affected make a contribution to the significance of the asset</i></li> <li><i>Slight changes to setting where setting elements affected are key to the significance of the asset</i></li> </ul>		
Minor alteration with no change in significance	<ul style="list-style-type: none"> <li>Very minor changes to archaeological materials</li> </ul>	<ul style="list-style-type: none"> <li>Slight changes to historic buildings elements</li> </ul>	<ul style="list-style-type: none"> <li>Very small change to historic landscape character resulting from:</li> <li>Very minor changes to key historic landscape elements, parcels or components</li> <li>Virtually unchanged visual effects</li> <li>Very slight changes to noise levels or sound quality</li> <li>Very slight changes to use or access</li> </ul>
	<ul style="list-style-type: none"> <li><i>Slight changes to setting where setting elements affected make a contribution to the significance of the asset</i></li> </ul>		
No change	No change		

Table 2: Definition of Magnitude of Impact

2.3.3 Key impacts have been identified as those that would potentially lead to a change to the heritage asset. Each potential impact has been determined as the predicted deviation from the baseline conditions, in accordance with current knowledge of the asset and the proposed development. Table 1 shows the sensitivity of the asset scaled in accordance with its relative importance using the following terms for the cultural heritage and archaeology issues, with guideline recommendations for a mitigation strategy.

2.3.4 The impact is assessed in terms of the sensitivity of the site to the magnitude of change or scale of impact during any future redevelopment scheme. The magnitude, or scale of an impact is often difficult to define, but will be termed as loss, substantial, less than substantial, minor, or no change, as shown in Table 2.

2.3.5 The interaction of the magnitude of impact (Table 2) and the significance of the heritage asset (Table 1) produces the scale of impact upon heritage asset significance. This may be calculated by using the matrix shown in Table 3:

Resource Value (Importance)	Scale of Impact Upon heritage Asset Significance				
	Loss	Substantial	Less than substantial	Minor	No change
<b>National/ International</b>	Very major	Very Major	Major	Intermediate / Minor	Neutral
<b>District/County (Higher)</b>	Very major	Major	Major/ Intermediate	Minor	Neutral
<b>District/County (Lesser)</b>	Major	Intermediate	Intermediate	Minor	Neutral
<b>Local (low)</b>	Intermediate	Intermediate / Minor	Minor	Minor/ Neutral	Neutral
<b>Negligible</b>	Neutral	Neutral	Neutral	Neutral	Neutral

*Table 3: Impact Significance Matrix*

2.3.6 The impact significance category for each identified heritage asset will also be qualified, and recommended mitigation measures will be provided, where possible at this stage, for minor impacts upon heritage asset significance or above. It is

important that the residual impact assessment takes into consideration the ability of the remediation to reduce or mitigate the impact, and its likely success.

2.3.7 It is also considered important to attribute a level of confidence by which the predicted impact has been assessed. For the purpose of this assessment, the criteria for these definitions are set out in the table below.

<b>Confidence in Predictions</b>	
<b>Confidence Level</b>	<b>Description</b>
High/Certain	The predicted impact is either certain, <i>ie</i> a direct impact, or believed to be very likely to occur, based on reliable information or previous experience, and may be estimated at 95% chance or higher.
Medium/Probable	The probability can be estimated to be above 50%, but below 95%.
Low/Unlikely	The predicted impact and its levels are best estimates, generally derived from the experience of the assessor. More information may be needed to improve the level of confidence, which can be estimated using the present information at above 5% but less than 50%.
Extremely Unlikely	The probability can be estimated at less than 5%.

*Table 4: Impact Prediction Confidence*

### **3 WALKOVER SURVEY RESULTS**

#### **3.1 Introduction**

3.1.1 The walkover survey was undertaken on the route of a proposed pipeline that had previously been discussed in a desk-based assessment (WAA, 2014), though the walkover route in part deviated considerably from the route covered in the desk-based assessment. The pipeline route covered approximately 5km.

3.1.2 The new route starting at Pinggy Wood, Bridekirk crosses onto the southern side of the A595 before continuing west towards Cockermouth. The pipeline crosses the A595 again and traverses more agricultural land close to Ann's Hill Lodge before crossing the A594 and continuing south-west. The route passes close to Papcastle, Cockermouth, site of a Roman fort, and crosses over the route of an associated Roman road before crossing the River Derwent; ending on the southern side of the A66 west of Cockermouth.

#### **3.2 Walkover Survey Results**

3.2.1 The walkover survey identified 23 new heritage assets on the route from Pinggy Wood, Bridekirk to a point west of Cockermouth. Details of these assets are included in the gazetteer (Appendix 1) and are summarized in this section.

3.2.2 The majority of new heritage assets identified can be classified as agricultural features or can be linked to agricultural use. These consist of field boundaries and entrances, trackways and remains of ancient field systems. A number of drystone wall field boundaries are also visible.

3.2.3 Several drystone wall field boundaries are visible across the route of the survey. The diverse geology of the Lake District and Cumbria has led to marked differences in building styles (AC Archaeology 2007) however this is not visible in those upstanding walls covered on the route. The walls are built from a carboniferous limestone and are in good condition. One field boundary close to the A595 and south of Blindcrake (plate 1) was in a state of severe deterioration with several gaps and areas of full collapse along its length.

3.2.4 A possible Cumbrian hedgerow was located near to Papcastle, Cockermouth close to the route of a known Roman road. A Cumbrian hedgerow is usually constructed of an earthen kest bank, varying in size, which is lined with stone, with established shrubs or mature trees on top of the bank.



*Plate 1: drystone Wall south-east of Bridekirk.*



*Plate 2: Quarry site close to Ann's Hill Lodge.*





*Plate 3: Removed hedgerow close to Ann's Hill Lodge.*



*Plate 4: Possible remains of Cumbrian hedgerow.*



*Plate 5: Possible remains of Cumbrian hedgerow.*

Site Number	Site Name	NHL Number	Designation
1	field boundary, Bridekirk		
2	field boundary, Bridekirk		
3	drystone wall, Bridekirk		
4	unmaintained drystone wall, Bridekirk		
5	drystone wall, Bridekirk		
6	mature hedgerow, Bridekirk		
7	quarry, Bridekirk		
8	removed hedgerow/trackway, Bridekirk		
9	drystone wall, Bridekirk		
10	stone field boundary, Ann's Hill Lodge		
11	stone field boundary, Ann's Hill Lodge		
12	mature hedgerow, Ann's Hill Lodge		
13	mature trees in field boundary, Ann's Hill Lodge		
14	mature hedgerow, A594		
15	mature hedgerow and trees, Papcastle		
16	possible Cumbrian hedgerow, Papcastle		
17	mature hedgerow, Papcastle		
18	possible Cumbrian hedgerow, Papcastle		
19	mature hedgerow, Papcastle		
20	mature trees		
21	mature hedgerow, Papcastle		
22	mature hedgerow, close to A66		
23	drystone wall, close to A66		

*Table 5: showing new heritage sites identified within the walkover survey.*

## 4 ASSESSMENT OF REMAINS

### 4.1 Introduction

4.1.1 The walkover survey identified 23 heritage assets along the proposed pipeline route. There were no listed buildings or other designated assets affected by the proposed route.

4.1.2 All of the sites fall within the area of Cumbria County Council and none of the sites are designated or listed.

Likely Period of Origin	Number of Sites	Sites
Prehistoric		
Romano-British		
Early Medieval		
Medieval		
Post-Medieval	18	2,4,7,8,9,10,11,12,13,14,15,16,17,18,20,21,22,23
Industrial		
Modern	5	1,3,5,6,19

*Table 6: Heritage assets by period.*

## 4.2 **Significance**

4.2.1 All of the assets can be classed as of local importance, except one which is of negligible significance.

## 4.3 **Potential for Previously Unidentified Remains**

4.3.1 Unidentified archaeological remains potentially exist across the entire study area and the potential impact upon the scheme is also uncertain. Such unidentified sites can relate to any period with sites from the prehistoric, Romano-British and early medieval periods underrepresented in databases of heritage assets.

4.3.2 Sub-surface archaeological remains may also be visible within the study area and could be linked with heritage assets already identified throughout the desk-based assessment and the walkover surveys.

4.3.3 Using the guideline criteria detailed in table 1 a professional decision can be made on the sites identified within the walkover survey and this is shown in table 5.

Number	Description of Site	Significance level
1	field boundary, Bridekirk	Local
2	field boundary, Bridekirk	Local
3	drystone wall, Bridekirk	Local
4	unmaintained drystone wall, Bridekirk	Local
5	drystone wall, Bridekirk	Local
6	mature hedgerow, Bridekirk	Local
7	quarry, Bridekirk	Local
8	removed hedgerow/trackway, Bridekirk	Local
9	drystone wall, Bridekirk	Local
10	stone field boundary, Ann's Hill Lodge	Local
11	stone field boundary, Ann's Hill Lodge	Local
12	mature hedgerow, Ann's Hill Lodge	Local
13	mature trees in field boundary, Ann's Hill Lodge	Negligible
14	mature hedgerow, A594	Local
15	mature hedgerow and trees, Papcastle	Local
16	possible Cumbrian hedgerow, Papcastle	local
17	mature hedgerow, Papcastle	Local
18	possible Cumbrian hedgerow, Papcastle	Local
19	mature hedgerow, Papcastle	Local
20	mature trees	Local
21	mature hedgerow, Papcastle	Local
22	mature hedgerow, close to A66	Local
23	drystone wall, close to A66	Local

*Table 7: Significance of identified heritage assets.*

## **5 IMPACT OF DEVELOPMENT**

### **5.1 Impact**

5.1.1 Section 12 of the National Planning Policy Framework (NPPF 2012) stresses the importance of conserving heritage assets in a manner appropriate to their significance. In addition it identifies heritage assets as an 'irreplaceable resource' therefore any work must assess the impact in terms of the significance of the site.

5.1.2 The scale of the impact can be defined as: loss, substantial, less than substantial, minor alteration with no reduction of significance, or no change as shown below.

### **5.2 Previous Development**

5.2.1 Any previous disturbance to any buried archaeological deposits should be considered in the assessing of any impact on the scheme. Depending on the final route several types of previous disturbance should be discussed.

5.2.2 The majority of the study area is composed of agricultural land which is likely to have been utilized throughout the historic and prehistoric periods. The scale of use differs between periods along with the quantity of land and the purpose of the area.

5.2.3 The construction of the proposed pipeline will affect existing field boundaries across the entirety of the route. The removal of hedgerows and field boundaries is affected by the Hedgerow Regulations (1997), with schedule 1 part II regulating for Archaeology and History. This regulation states that any hedgerows proved to be historic, in existence before 1850, can be deemed as important and be subject to protection. Any removal of hedgerows needed for the construction of the pipeline may not affect the entirety of the field boundaries however will still be subject to this regulation.

5.2.4 The pipeline runs close to the village of Papcastle, the site of a recorded Roman fort and settlement. As discussed within the DBA the route crosses two possible Roman roads also in the area and the possible affect of undiscovered buried remains is high. A geophysical survey of the pipeline route is recommended for this area.

Site No.	Site Name	Nature Of Impact	Significance	Magnitude of Impact	Scale Of Impact	Confidence Rating
1	field boundary, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
2	field boundary, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
3	drystone wall, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
4	unmaintained drystone wall, Bridekirk	Potential Direct Impact	Local	Less than Substantial	Minor	High
5	drystone wall, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
6	mature hedgerow, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
7	quarry, Bridekirk	Potential Impact	Local	No change	Minor	High
8	removed hedgerow/trackway, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
9	drystone wall, Bridekirk	Potential Direct Impact	Local	Minor Alteration	Minor	High
10	stone field boundary, Ann's Hill Lodge	Potential Direct Impact	Local	Minor Alteration	Minor	High
11	stone field boundary, Ann's Hill Lodge	Potential Direct Impact	Local	Minor Alteration	Minor	High
12	mature hedgerow, Ann's Hill Lodge	Potential Direct Impact	Local	Minor Alteration	Minor	High
13	mature trees in field boundary, Ann's Hill Lodge	Potential Direct Impact	Negligible	Minor Alteration	Minor	Medium
14	mature hedgerow, A594	Potential Direct Impact	Local	Minor Alteration	Minor	High
15	mature hedgerow and trees, Papcastle	Potential Direct Impact	Local	Minor Alteration	Minor	High
16	possible Cumbrian hedgerow, Papcastle	Potential Direct Impact	Local	Less than Substantial	Minor	High
17	mature hedgerow, Papcastle	Potential Direct Impact	Local	Minor Alteration	Minor	High
18	possible Cumbrian hedgerow, Papcastle	Potential Direct Impact	Local	Less than Substantial	Minor	High



19	mature hedgerow, Papcastle	Potential Direct Impact	Local	Minor Alteration	Minor	High
20	mature trees	Potential Direct Impact	Local	Minor Alteration	Minor	Medium
21	mature hedgerow, Papcastle	Potential Direct Impact	Local	Minor Alteration	Minor	High
22	mature hedgerow, close to A66	Potential Direct Impact	Local	Minor Alteration	Minor	Medium
23	drystone wall, close to A66	Potential Direct Impact	Local	Minor Alteration	Minor	High

*Table 8: Summary of Impact.*

## **6 RECOMMENDATIONS**

### **6.1 Introduction**

6.1.1 A program of archaeological mitigation is recommended on the route of the pipeline from Pinggy Wood, Blindcrake to an area west of Cockermouth. This program should comprise of several differing elements of archaeological investigations including and not limited to earthwork surveys, geophysical survey and watching briefs.

### **6.2 Further Archaeological Investigation**

6.2.1 Any of the noted remains which will be directly impacted upon by any intrusive excavation will require detailed archaeological recording. This should include a photographic record to better understand any importance the site has in the wider landscape.

6.2.2 The potential for other underground remains which show no above ground potential still remains across the length of the pipeline. A series of geophysical surveys around the village of Papcastle would highlight the extent of any possible Roman remains not visible above the ground. It is recommended that a full watching brief of all excavations linked with the installation of the pipeline be undertaken.

## **7 7 BIBLIOGRAPHY**

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### **7.2 Websites**

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<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

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7.2.3 UK Grid Reference Finder, 2015, <http://www.gridreferencefinder.com/>

## APPENDIX 1: SITE GAZETEER

<b>Site Number</b>	<b>01</b>
<b>Site Name</b>	field boundary, Bridekirk
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Modern
<b>NGR</b>	NY 12840 33356
<b>Source</b>	Walkover Survey
<b>Description</b>	Existing field boundary made up of established brush and mature trees on a well established earthen bank.
<b>Assessment</b>	The heritage asset is on the proposed pipeline route and will be affected by any excavation.
<b>Site Number</b>	<b>02</b>
<b>Site Name</b>	field boundary, Quarryhill
<b>Designation</b>	Non- designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Post medieval
<b>NGR</b>	NY 12791 33370
<b>Source</b>	Walkover Survey
<b>Description</b>	Established field boundary made up of mature trees next to an unmaintained drystone wall with a replacement modern fenceline attached.
<b>Assessment</b>	The heritage asset is close to the proposed route and therefore may be affected by any excavations linked with its installation.
<b>Site Number</b>	<b>03</b>
<b>Site Name</b>	drystone wall, Bridekirk
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary

**Period** Modern  
**NGR** NY 12834 33268  
**Source** Walkover Survey  
**Description** A partially unmaintained drystone wall close to the A595 with associated mature trees. The field boundary also has a modern fenceline along its length.  
**Assessment** The heritage asset is on the proposed pipeline route and will be affected by any excavation.

**Site Number** 04  
**Site Name** unmaintained drystone wall, Bridekirk  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Post medieval  
**NGR** NY 12621 32873  
**Source** Walkover Survey  
**Description** An unmaintained drystone wall with several large gaps and in a state of near dereliction.  
**Assessment** The heritage asset lies within the boundary of the proposed pipeline and will be affected by any excavation.

**Site Number** 05  
**Site Name** drystone wall, Bridekirk  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Modern  
**NGR** NY 12537 32766  
**Source** Walkover Survey  
**Description** A well maintained recent drystone wall field boundary.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

<b>Site Number</b>	<b>06</b>
<b>Site Name</b>	mature hedgerow, Bridekirk
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Modern
<b>NGR</b>	NY 12440 32711
<b>Source</b>	Walkover Survey
<b>Description</b>	A well established mature hedgerow on an earthen bank.
<b>Assessment</b>	The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.
<b>Site Number</b>	<b>07</b>
<b>Site Name</b>	quarry, Bridekirk
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	quarry
<b>Period</b>	Post-medieval
<b>NGR</b>	NY 12247 32757
<b>Source</b>	Walkover Survey
<b>Description</b>	An area of quarrying south of Bridekirk.
<b>Assessment</b>	The heritage asset lies within the corridor of the pipeline however it is not on the proposed route. Any affect from the installation of the pipeline should be minimal.
<b>Site Number</b>	<b>08</b>
<b>Site Name</b>	removed hedgerow/ trackway, Bridekirk
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Post-medieval
<b>NGR</b>	NY 12233 32641
<b>Source</b>	Walkover Survey
<b>Description</b>	A raised earthen bank leading to an area of quarrying, site 7, approximately 1.5m wide and raised from the field it is situated within.

Possibly the remains of a removed hedgerow or trackway.

**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 09

**Site Name** drystone wall, Bridekirk

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post-medieval

**NGR** NY 12201 32612

**Source** Walkover Survey

**Description** An unmaintained drystone wall field boundary close to Ann's Hill Lodge.

**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 10

**Site Name** stone field boundary, Ann's Hill Lodge

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post medieval

**NGR** NY 11905 32274

**Source** Walkover Survey

**Description** A stone built field boundary with iron railings on top. This boundary close to the A595 is also close to a grade II mile marker mentioned in the desk-based assessment (site 51).

**Assessment** The heritage asset on the route of the proposed pipeline and will be affected by any excavations linked with the construction of the scheme.

**Site Number** 11

**Site Name** stone field boundary, Ann's Hill Lodge

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post medieval  
**NGR** NY 11885 32271  
**Source** Walkover Survey  
**Description** A stone built field boundary with iron railings on top.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 12  
**Site Name** mature hedgerow, Ann's Hill Lodge  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Post medieva  
**NGR** NY 11779 32290  
**Source** Walkover Survey  
**Description** A well established mature hedgerow with some mature trees within its length.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 13  
**Site Name** mature trees in field boundary, Ann's Hill Lodge  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Modern  
**NGR** NY 11355 32222  
**Source** Walkover Survey  
**Description** A raised earthen bank field boundary with modern fencelines and mature trees along its length.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 14  
**Site Name** mature hedgerow



<b>Designation</b>	Non- designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Modern
<b>NGR</b>	NY 11190 32229
<b>Source</b>	Walkover Survey
<b>Description</b>	A well established and mature hedgerow.
<b>Assessment</b>	The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.
<b>Site Number</b>	<b>15</b>
<b>Site Name</b>	mature hedgerow and trees, Papcastle
<b>Designation</b>	Non-designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Post medieval
<b>NGR</b>	NY 10853 32098
<b>Source</b>	Walkover Survey
<b>Description</b>	A well established and mature hedgerow with several mature trees along its length.
<b>Assessment</b>	The Heritage Asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.
<b>Site Number</b>	<b>16</b>
<b>Site Name</b>	possible Cumbrian hedgerow, Papcastle
<b>Designation</b>	Non- designated
<b>NHL Number</b>	
<b>Site Type</b>	field boundary
<b>Period</b>	Post medieval
<b>NGR</b>	NY 10717 31818
<b>Source</b>	Walkover Survey
<b>Description</b>	A possible Cumbrian hedgerow. Mature hedgerow on a raised earthen bank with 3 layers of visible stone within its construction.
<b>Assessment</b>	The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 17  
**Site Name** mature hedgerow, Papcastle  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Post medieval  
**NGR** NY 10566 31680  
**Source** Walkover Survey  
**Description** A well established mature hedgerow with several mature trees along its length.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 18  
**Site Name** possible Cumbrian hedgerow, Papcastle  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Post medieval  
**NGR** NY 10498 31588  
**Source** Walkover survey  
**Description** A possible Cumbrian hedgerow. Mature hedgerow on a raised earthen bank with several layers of visible stone within its construction.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 19  
**Site Name** mature hedgerow, Papcastle  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Modern  
**NGR** NY 10472 31505  
**Source** Walkover survey

**Description** A well established mature hedgerow with associated modern fenceline.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 20

**Site Name** mature trees

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post medieval

**NGR** NY 10182 31288

**Source** Walkover Survey

**Description** Several mature trees situated along an existing fence field boundary.

**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 21

**Site Name** mature hedgerow, Papcastle

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post medieval

**NGR** NY 10287 31454

**Source** Walkover Survey

**Description** An established mature hedgerow on top of an established earthen bank with layers of stone visible within its construction.

**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 22

**Site Name** mature hedgerow, close to A66

**Designation** Non-designated

**NHL Number**

**Site Type** field boundary

**Period** Post medieval

**NGR** NY 09980 31080  
**Source** Walkover Survey  
**Description** An established mature hedgerow with several mature trees along its length.  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

**Site Number** 23  
**Site Name** drystone wall, close to A66  
**Designation** Non-designated  
**NHL Number**  
**Site Type** field boundary  
**Period** Post medieval  
**NGR** NY 09940 31035  
**Source** Walkover Survey  
**Description** A maintained drystone wall associated with the mature hedgerow field boundary (site 22).  
**Assessment** The heritage asset lies on the proposed route of the pipeline and will be affected by any excavations linked with its construction.

## FIGURES

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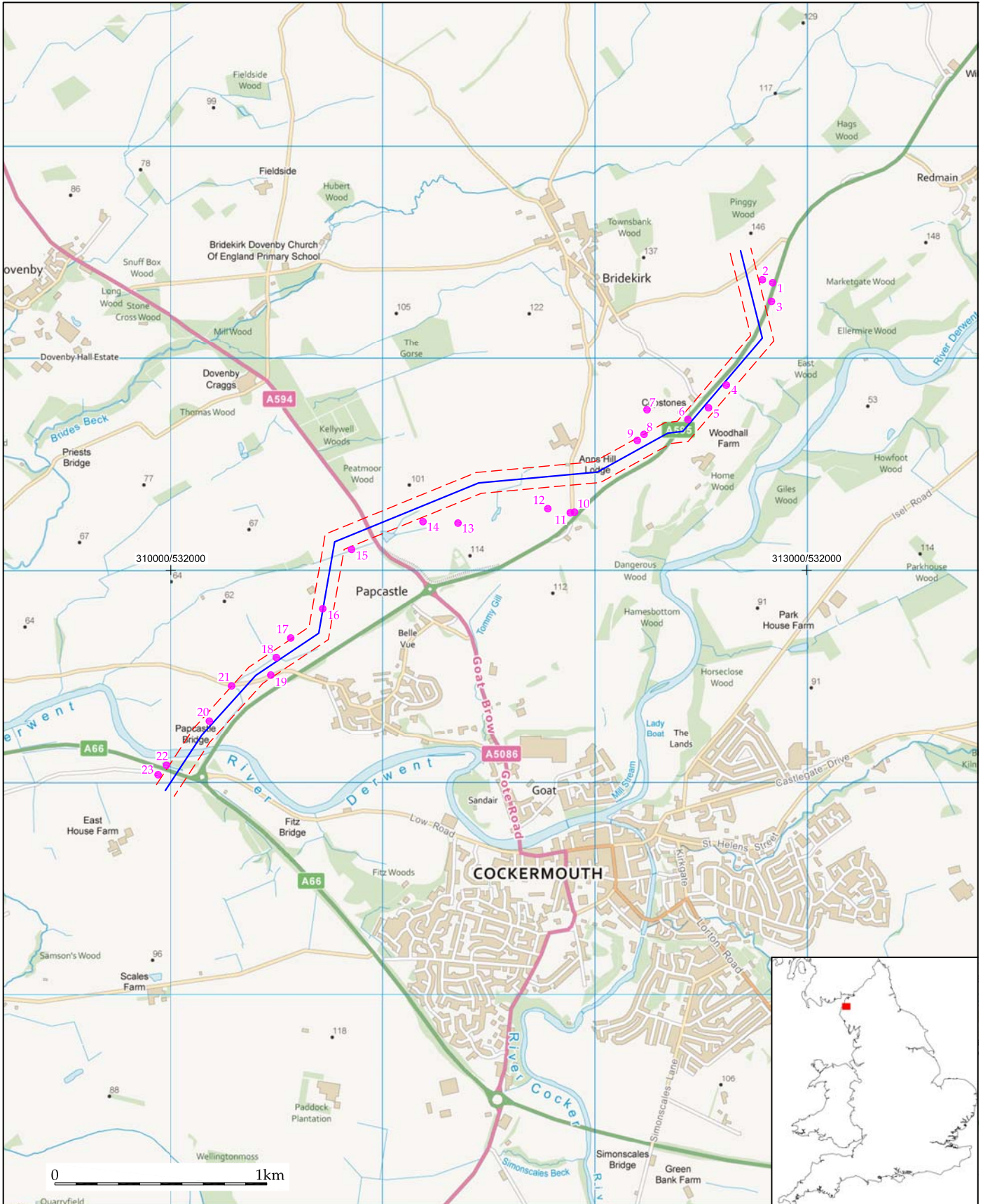
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 <p>Wardell Armstrong Archaeology 2015</p>	<p>PROJECT: Bridekirk to Cockermouth Pipeline</p> <p>SCALE: 1:25,000 at A4</p> <p>REPORT No: CP11260</p> <p>CLIENT: United Utilities</p> <p>DRAWN BY: AB</p> <p>DATE: April 2015</p> <p>FIGURE: 1</p>	<p>KEY:</p> <ul style="list-style-type: none"> <li> Route of pipeline</li> <li> 100m width corridors</li> <li> Heritage assets</li> </ul>	 <p>Reproduced by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright. All rights reserved. Licence number 100019512</p>
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Figure 1: Route of pipeline showing locations of heritage assets.