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UNITED UTILITIES

KILNHILL TO PINGGY WOOD

ARCHAEOLOGICAL SURVEY

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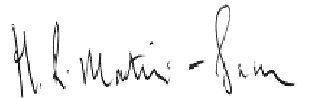
April 2015

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FIGURES

Figure 1: Location of Heritage Assets

SUMMARY

Wardell Armstrong Archaeology were commissioned by United Utilities, to undertake a walk over survey for the installation of a new pipeline located in the north of the Lake District National Park; beginning at Kilnhill to the north of Bassenthwaite Lake in the Allerdale District of western Cumbria. This pipeline is part of three groups of pipeline routes under consideration; 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 previous desk-based assessment identified 51 heritage assets whilst the walkover survey identified a further 26 heritage assets.

ACKNOWLEDGEMENTS

Wardell Armstrong Archaeology (WAA) would like to offer thanks to 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 figure was 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 schemes 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 the A591 at Kilnhill north-east of Bassenthwaite Lake and finishes at Pinggy Wood approximately 1km west of the village of Redmain, covers just over 9km of mainly improved pasture land and is situated for the majority of its length within the Lake District National Park.

1.1.2 The Survey, which was based on a previous Desk Based Assessment by Wardell Armstrong Archaeology (WAA, 2014), examined a 100m corridor along the route of the proposed pipeline examining previously identified heritage assets and identifying unrecorded assets. The survey also sought to place the assets in the wider setting of the landscape with particular attention paid to their historical context and setting.

1.2 Location, Topography and Geology

1.2.1 The study area is a sinuous linear corridor extending from Kilnhill in the east (NGR 321010 532560) to Pinggy Wood (NGR 312942 533603) in the west. This route travels through part of the north-western Lake District National Park. Pinggy Wood in the west however lies outside of the National Park with the A595 forming the western boundary of the park. The route was walked from east to west.

1.2.2 **Topography:** the route starts in agricultural land at Kilnhill approximately 95m aOD, west of the A591, connecting Bothel and Keswick. The route then continues through the grounds of Armanthwaite Hall Hotel towards Isel Old Park Woods. Passing across agricultural land next to Buckholmebanks Wood, it then crosses Jonah's Gill before continuing across more agricultural land close to Long Close Farm rising to approximately 103maOD. It then crosses a minor road next to Outgang Wood before continuing through more agricultural land towards Isel.

- 1.2.3 As the route passes Isel and the grade II listed watermill at approximately 70m aOD the corridor crosses another minor road before continuing westwards through more agricultural land towards Gill wood rising to approximately 90m aOD. After Gill wood the corridor extends through more agricultural land and wooded areas south of the village of Redmain. Passing through Marketgate Wood at 100m aOD the route then crosses the A595 before finishing at Pinggy Wood approximately 130m aOD.
- 1.2.4 **Geology:** within the western part of the study area, limestone and basalt of the Cocker mouth Volcanic Formation with siltstone and mudstone of the Hope Beck formation form much of the areas solid geology to the immediate west, east and south-east of Isel. The area to the north-east of Isel comprises predominantly sandstone, siltstone, mudstones, thin limestones and some coals of the Stainmore Foundation.
- 1.2.5 The drift geology of the area comprises predominantly alluvium in the valleys, and glacial till elsewhere. In the western part of the study area, river terrace deposits of sand and gravel predominate, with some areas of Devensian Till in the area west of Isel, where alluvial fan deposits are located. The rest of the study area is predominantly Devensian Till, with localised areas of alluvial fan deposits and fluvial clay deposits (British Geological Survey: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).
- 1.2.6 **Historic Landscape Character:** The proposed pipeline passes through a region of west Cumbria which has been separated into two historic landscape character areas. The majority of the scheme is located in character area 6: Bassenthwaite and Lorton Valley. Pinggy Wood, however, in the west is within area 18: Ellen and Marron Valleys (Cumbria County Council 2009).
- 1.2.7 The Bassenthwaite and Lorton Valley is characterized by its mostly low lying land and dispersed small settlements. It also contains several ornamental parks and country houses such as Armanthwaite Hall and Isel Hall which are on the proposed route of the pipeline. The north of the area features more nucleated settlements such as Sunderland and Blindcrake which have few modern accretions because of their inclusion in the Lake District National Park. The field systems retain evidence of former common field farming with large open field systems. The majority of the fields are made up of later planned enclosure especially around the area of Isel Hall.

1.2.8 The area covered by the Ellen and Marron Valleys borders with Bassenthwaite and Lorton Valley towards the south and the large town of Cockermouth is situated within the area. Settlement patterns have been impacted by 19th century industrialization in the area along with 20th century settlement expansion. Within the historic landscape character area, however, there are many discrete farmsteads and other homesteads away from the nucleated settlements. The fieldscape is mainly based on former open commonfields 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 mostly 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 decision's are termed 'heritage assets'. Such 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 route corridor of a pipeline from Kilnhill to Pinggy Wood. 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 as 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 final bound copy of the report will be deposited with the Lake District National Park Authority's Historic Environment Record, Oxenholme, Kendal, Cumbria, where viewing will be available on request.

2.2.2 Wardell Armstrong Archaeology Ltd and Lake District National Park Authority 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 wardella2-208776.

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

Confidence in Predictions	
Confidence Level	Description
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 the desk-based assessment (WAA, 2014). The pipeline route covered 9.18km in total and differed in its route slightly from the one discussed in the DBA, its start was moved towards the A591 whilst its finishing point was moved closer to Pinggy Wood next to the A595. The route was also moved closer to Isel Hall and the water mill in the village, both of which are designated assets for which issues of setting need to be considered.

3.1.2 In total 26 possible heritage assets were recorded during the walkover survey.

3.2 Walkover Survey Results.

3.2.1 The walkover survey identified 25 new heritage assets on the route from Kilnhill to Pinggy Wood. 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 difference can be seen in the field boundaries between Kilnhill and Long Close farm and those towards Isel; the boundaries around Long Close farm feature many new hedgerows and fence lines whereas those around Isel consist of more mature trees, drystone walls and possible former Cumbrian Hedgerows. This change could be linked to the possible influence that the former deer parks had in the area however no clear boundaries of these were visible. A change in the hedgerows could also be linked with the enclosure of fields in the area with the remains of former field systems potentially visible.

3.2.3 A Cumbrian hedgerow is a distinctive type of hedgerow which can be identified against other field boundaries. They are usually constructed of an earthen kerb bank, varying in size, which are lined with stone with established shrubs or mature trees usually on top.

3.2.4 Several drystone wall field boundaries are visible across the route of the survey. The diverse geology of the Lake District 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. Most have remaining cope stones and show little signs of repair or deterioration.

- 3.2.5 One unusual asset is a decorated, possibly re-used, gate post or stoop which forms part of an unmaintained field boundary, close to Armanthwaite Hall (Plate 1). The highly decorated nature of the gatepost suggests it has 19th century origins and formed part of the ornamental parkland landscape surrounding Armanthwaite Hall.
- 3.2.6 An earthwork of archaeological interest was recorded north west of Isel (plate 2). This feature measured approximately 45 meters long and was oval in shape; it was formed of a raised bank with a surrounding ditch measuring approximately 3 meters wide and with a depth of 0.5 meters. A worked stone located at one end of the feature (plate 4) could highlight a previous use with two small circular holes approximately 0.2 meters deep clearly visible; these appeared to be solution hollows rather than rock art. The mound's use or significance is unknown, however its most likely interpretation is as a pillow mound probably associated with the wider hunting landscape of Isel Hall. The date of the mound is uncertain but it may be medieval in origin.
- 3.2.7 Several possible ancient field boundaries were also visible during the walkover survey. These were grouped around the area closest to the villages of Blindcrake and Redmain with the majority south of the latter. These sites included a relic field boundary including mature Oak trees bordering onto a trackway (Plate 3) and distinct field boundary south of Redmain possibly linked with an enclosed field system.



Plate 1: Possibly re-used decorated Gate Post.



Plate 2: Possible pillow mound north-west of Isel.(site 13)



Plate 3: Possible relic field boundary or track way connected to enclosed field.



Plate 4: Worked stone on the site of possible archaeological feature North-West of IseI.



Plate 5: Possible Ancient Hedgerow and Trackway south of Redmain

Site Number	Site Name	NHL Number	Designation
1	improved stream management		
2	decorated gate post		
3	field boundary near Low Cross Farm		
4	abandoned gate post		
5	field boundary near Isel		
6	water mill, Isel	1145218	
7	field boundary near Isel water mill		
8	bridge to Isel water mill		
9	drystone wall field boundary near Isel water mill		
10	maintained drystone wall, Isel		
11	maintained drystone wall, Isel		
12	toad bridge, Isel		
13	archaeological feature, Isel		
14	worked stone, Isel		
15	field boundary, Redmain		
16	field boundary, Redmain		
17	field boundary, Redmain		
18	ridge and furrow, Redmain		
19	ridge and furrow, Redmain		
20	oak trees, Redmain		
21	removed field boundary, Redmain		
22	field boundary, Redmain		
23	removed field boundary, Redmain		
24	field boundary, south of A595		
25	field boundary, south of A595		
26	Isel grange, Isel	1145217	
27	byre south of Isel mill	1312046	
28	Isel mill house and granary, Isel	1312044	

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

4 ASSESSMENT OF REMAINS

4.1 Introduction

- 4.1.1 The walkover survey produced 26 new potential Heritage Assets to add to the 51 identified in the desk-based assessment of the proposed pipeline route. There were no designated sites directly affected by the proposed route however the revised corridor does bring the proposed development close to the grade II listed water mill at Isel and the grade I listed Isel Hall.
- 4.1.2 All heritage assets fall within the boundaries of the Lake District National Park which is a statutorily protected landscape. All assets in the area are considered to have a significance of at least 'District or County (lesser)'. This is consistent with section 115 of the national planning policy framework (NPPF).
- 4.1.3 The Lake District National Park is to be considered for inscription on the World Heritage List by UNESCO in 2017 and the significance of any asset in the area is influenced by its contribution to this application. The significance of any asset is defined by Outstanding Universal Values (OUV) which defines the World Heritage Site. The nominated OUV's are included within the *Technical Evaluation of the Future World Heritage Nomination for the English Lake District* (LDWHPP, 2013). This document details the importance of the region as an area resulting from 'combined works of nature and man' along with recognizing its importance in the origin of conservation principles within the park.
- 4.1.4 Within this survey the Lake District National Park is considered as if it is already inscribed as a World Heritage Site.

Likely Period of Origin	Number of Sites	Site
Prehistoric		
Romano-British		
Early Medieval		
Medieval	2	6, 13?
Post-medieval	24	2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28
Industrial		
Modern	1	1

Table 6: Number of heritage assets by period

4.2 Significance

4.2.1 One asset, the World Heritage Site, is of international significance whilst the remainder of the assets identified can be classified as of county/district significance. There are four listed buildings within the study area all are grade II and these are Isel water mill (National Heritage List number (NHL) 1145218), the byre south of Isel water mill (NHL 1312046), the mill house and granary (NHL 1312044) and Isel Grange (NHL1145217) close to Isel Hall. The four grade II listed structures are all of higher county significance and the remainder of the heritage assets are of lesser county significance.

4.2.2 Isel Water Mill has medieval origins though the current structure is post-medieval. Isel grange close to Isel Hall is a 18th century red sandstone building.

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. The historic deer parks which the route crosses could suggest wider uses in the Medieval and later periods whilst industrial sites may also be represented.

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 significance of the sites identified within the walkover survey and this is shown in table 5.

Number	Description of Site	Significance level
1	improved stream management, Armanthwaite Hall	District or County (Lesser)
2	decorated gate post	District or County (Lesser)
3	field boundary near Low Cross Farm	District or County (Lesser)
4	abandoned gate post	District or County (Lesser)
5	field boundary near Isel	District or County (Lesser)
6	water mill Isel	District or County (Higher)
7	field boundary near Isel water mill	District or County (Lesser)
8	bridge to Isel water mill	District or County (Lesser)
9	drystone wall field boundary near Isel water mill	District or County (Lesser)
10	maintained drystone wall, Isel	District or County (Lesser)
11	maintained drystone wall, Isel	District or County (Lesser)
12	road bridge, Isel	District or County (Lesser)
13	archaeological feature, Isel	District or County (Lesser)
14	worked stone, Isel	District or County (Lesser)
15	field boundary, Redmain	District or County (Lesser)
16	field boundary, Redmain	District or County (Lesser)
17	field boundary, Redmain	District or County (Lesser)
18	ridge and furrow, Redmain	District or County (Lesser)
19	ridge and furrow, Redmain	District or County (Lesser)
20	oak trees, Redmain	District or County (Lesser)
21	removed field boundary, Redmain	District or County (Lesser)
22	field boundary, Redmain	District or County (Lesser)
23	removed field boundary, Redmain	District or County (Lesser)
24	field boundary, south of A595	District or County (Lesser)
25	field boundary, south of A595	District or County (Lesser)
26	Isel grange, Isel	District or County (Higher)
27	byre south of Isel mill	District or County (Higher)
28	Isel mill house and granary, Isel	District or County (Higher)

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 pipeline runs close to the grade II listed Water Mill at Isel whilst also running close to the grounds of Isel Hall. These historic buildings are situated within the grounds of Isel Park a former medieval deer park.

5.2.4 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 regulated by the Hedgerow Regulations (1997), with schedule 1 part II cover Archaeology and History. This regulation states that any hedgerows proved to be historic, in existence before 1845, can be deemed as important and be subject to protection. Whilst any impact on hedgerows of the construction of the pipeline may only affect a portion of and not the whole hedgerow, the impact is still covered by the Hedgerow Regulations.

Site No.	Site Name	Nature Of Impact	Significance	Magnitude of Impact	Scale Of Impact	Confidence Rating
1	improved stream management, Armanthwaite Hall	Potential Impact	District or County (Lesser)	Minor Alteration	Minor	Medium
2	decorated gate Post	Potential Impact	District or County (Lesser)	Minor Alteration	Minor	Low
3	field boundary near Low Cross Farm	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	Medium
4	abandoned gate post	Potential Impact	District or County (Lesser)	No Change	Minor	Low
5	field boundary near Isel	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	Medium
6	water mill, Isel	Potential Impact	District or County (Lesser)	No Change	Neutral	Medium
7	field boundary near Isel water mill	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	Medium
8	bridge to Isel water mill	Potential Impact	District or County (Lesser)	No Change	Neutral	High
9	drystonewall field boundary near Isel water mill	Potential Impact	District or County (Lesser)	Minor Alteration	Minor	High
10	maintained drystone wall, Isel	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
11	maintained drystone wall, Isel	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
12	road bridge, Isel	Potential Impact	District or County (Lesser)	No Change	Neutral	Medium
13	archaeological feature, Isel	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
14	worked stone, Isel	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	High
15	field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
16	field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
17	field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
18	ridge and furrow, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
19	ridge and furrow, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
20	Oak trees, Redmain	Potential Impact	District or County (Lesser)	Substantial	Intermediate	High
21	removed field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High

22	field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
23	removed field boundary, Redmain	Potential Direct Impact	District or County (Lesser)	Substantial	Intermediate	High
24	field boundary, south of A595	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	High
25	field boundary, south of A595	Potential Direct Impact	District or County (Lesser)	Minor Alteration	Minor	High
26	Isel grange, Isel	Potential Impact	District or County (Higher)	Minor Alteration	Minor	High
27	byre south of Isel mill	Potential Impact	District or County (Higher)	Minor Alteration	Minor	High
28	Isel mill house and granary, Isel	Potential Impact	District or County (Higher)	Minor Alteration	Minor	High

6 RECOMMENDATIONS

6.1 Introduction

6.1.1 A programme of archaeological mitigation is recommended on the route of the pipeline from Kilnhill to Pinggy Wood. This programme should consist of several differing elements of archaeological response including and not limited to earthwork survey, 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 construction 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 still exists for other unknown underground remains which are not visible above ground being encountered during construction. Consequently It is recommended that a full watching brief be undertaken of all excavations linked with the topsoil stripping of the easement and the installation of the pipeline.

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APPENDIX 1: GAZETTEER OF SITES

Site Number	01
Site Name	Improved water management, Armanthwaite
Designation	Non-designated
NHL Number	
Site Type	Earthwork
Period	Post-medieval/modern
NGR	NY 20499 32708
Source	Walkover Survey
Description	An area of improved water management within the landscaped grounds of Armanthwaite Hall. Modern materials are clearly utilised in the re-direction of a spring or stream towards a pre-existing water course on the land.
Assessment	The heritage asset exists within the boundary of the proposed pipeline development and within the grounds of Armanthwaite Hall. These landscaped grounds form part of a medieval Deer Park and are in use as grazing for livestock presently.
Site Number	02
Site Name	Decorated gate ost
Designation	
NHL Number	
Site Type	Field Boundary
Period	Post medieval/Modern
NGR	NY 20419 32817
Source	Walkover Survey
Description	Possibly decorated gate stoop used within an extant field boundary close to Armanthwaite Hall.
Assessment	The heritage asset lies within the boundary of the proposed pipeline and close to the boundary of Armanthwaite Hall.
Site Number	03
Site Name	field boundary near Low Cross Farm
Designation	
NHL Number	

Site Type field boundary
Period Modern
NGR NY 17556 33554
Source Walkover Survey
Description A well established and maintained field boundary, mainly made up of grown blackthorn and other mature trees and bush.
Assessment The heritage asset is on the proposed pipeline route and will be affected by any excavation. The asset is of negligible importance.

Site Number 04
Site Name Abandoned gate stoop
Designation
NHL Number
Site Type Gate post
Period Modern
NGR NY 17284 33762
Source Walkover Survey
Description Abandoned gate stoop reused as a stream crossing or possibly just fallen. Very close to an established but modern fence line.
Assessment The heritage asset lies within the boundary of the proposed pipeline however is of negligible importance.

Site Number 05
Site Name field boundary, Isel
Designation
NHL Number
Site Type field boundary
Period Post medieval/ modern
NGR NY 16619 34058
Source Walkover Survey
Description Possible archaic Cumbrian hedgerow/field boundary towards the village of Isel. Large amounts of possibly worked stone and mature trees are visible along the length of the 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	06
Site Name	water mill, Isel
Designation	Grade II listed
NHL Number	1145218
Site Type	Water Corn Mill
Period	Medieval
NGR	NY 15862 33974
Source	Walkover Survey
Description	A corn mill shown on First Edition Ordnance Survey Mapping, and possibly in existence from 1297. A surviving leat is shown on early mapping of the area. A building still stands on the site.
Assessment	The heritage asset lies within the boundary of the study area at c. 14 metres to the south of the centre line. The heritage asset is considered to be of district or county (higher) significance based on current knowledge.
Site Number	07
Site Name	field boundary, Isel Mill
Designation	
NHL Number	
Site Type	field boundary
Period	Post-medieval/ modern
NGR	NY 15917 33965
Source	Walkover Survey
Description	Possible archaic field boundary with several mature trees within its length.
Assessment	The heritage asset lies on the route of the proposed pipeline and in close proximity to the Grade II listed Water Mill at Isel. Any excavations linked with the construction of the proposed pipeline will affect this asset.
Site Number	08
Site Name	Bridge to Isel water mill
Designation	
NHL Number	
Site Type	Bridge
Period	Post-medieval/ modern

NGR NY 15816 33912
Source Walkover Survey
Description Bridge across beck to Isel water mill.
Assessment The heritage asset lies within the boundary of the proposed pipeline and could be affected by any excavations linked with the installation of the pipeline.

Site Number 09
Site Name drystone wall
Designation
NHL Number
Site Type field boundary
Period Post-medieval/ modern
NGR NY 15746 33910
Source Walkover Survey
Description A maintained drystone wall field boundary between a modern plantation area and an area of flood plain/ grazing land next to Blumer Beck.
Assessment The Heritage asset is within the corridor covered by the proposed pipeline however not on the line of the scheme. Any excavations should have limited affect on the asset.

Site Number 10
Site Name drystone wall
Designation
NHL Number
Site Type field boundary
Period Post medieval/ modern
NGR NY15551 33751
Source Walkover Survey
Description A maintained drystone wall field boundary between a large open arable field north-east of Isel and a modern road.
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 drystone wall
Designation
NHL Number
Site Type field boundary
Period Post medieval/ modern
NGR NY 15568 33774
Source Walkover Survey
Description A maintained drystone wall between the modern road and a field connected to the water mill at Iseil
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 12
Site Name road bridge, Iseil
Designation
NHL Number
Site Type bridge
Period Post medieval/ modern
NGR NY 15628 33766
Source Walkover Survey
Description Possibly modern road bridge across Blumer Beck.
Assessment The heritage asset lies within the corridor of the pipeline development and could be subsequently affected by any excavations undertaken by the scheme.

Site Number 13
Site Name archaeological feature
Designation Non-designated
NHL Number
Site Type earthwork
Period medieval?
NGR NY 15304 33944
Source Walkover Survey

Description Earthwork feature visible within field south west of Gill Wood, possibly a pillow mound for keeping rabbits.

Assessment The heritage asset is on the projected route of the proposed pipeline and as such would be affected by any excavations undertaken by the scheme.

Site Number 14

Site Name Worked Stone

Designation

NHL Number

Site Type Worked Stone

Period ?

NGR NY 15286 33947

Source Walkover Survey

Description A worked stone possibly connected to site 13 or to an abandoned gate/ field boundary.

Assessment The heritage asset lies within the route of the proposed pipeline and could subsequently be affected by any excavations linked to the pipeline.

Site Number 15

Site Name field boundary

Designation

NHL Number

Site Type field boundary

Period Post medieval/ modern

NGR NY 14562 33977

Source Walkover Survey

Description A possible Cumbrian hedgerow or archaic field boundary with several mature trees and established hedgerow along with large amounts of stone.

Assessment The heritage asset lies on the route of the proposed pipeline and subsequently will be affected by any excavations taken during the construction of the scheme.

Site Number 16

Site Name field boundary

Designation

NHL Number

Site Type field boundary
Period Post medieval/ modern
NGR NY 14497 33916
Source Walkover Survey
Description A possible Cumbrian hedgerow or archaic field boundary with several mature trees and established hedgerow along with large amounts of stone.
Assessment The heritage asset lies on the route of the proposed pipeline and subsequently will be affected by any excavations taken during the construction of the scheme.

Site Number 17

Site Name field boundary

Designation

NHL Number

Site Type field boundary

Period Post medieval/ modern

NGR NY 14469 33878

Source Walkover Survey

Description A possible Cumbrian hedgerow or archaic field boundary with several mature trees and established hedgerow along with large amounts of stone.

Assessment The heritage asset lies on the route of the proposed pipeline and subsequently will be affected by any excavations taken during the construction of the scheme.

Site Number 18

Site Name ridge and furrow

Designation

NHL Number

Site Type earthwork

Period Post Medieval/ Modern

NGR NY 14453 33671

Source Walkover survey

Description An area of established ridge and furrow remains within a possible open field system behind the village of Redmain.

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

Site Number 19

Site Name ridge and furrow

Designation

NHL Number

Site Type earthwork

Period Post medieval/ modern

NGR NY 14233 33510

Source Walkover survey

Description An area of established ridge and furrow remains within a possible open field system behind the village of Redmain.

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

Site Number 20

Site Name Oak trees

Designation

NHL Number

Site Type plantation of mature oak trees.

Period Post medieval

NGR NY 14516 33717

Source Walkover Survey

Description An area of mature oak trees close to an established possibly archaic hedgerow and possibly a field boundary for the open field system behind the village of Redmain.

Assessment The heritage asset lies within the boundary of the study area however off the line of the proposed pipeline.

Site Number 21

Site Name removed field boundary

Designation

NHL Number

Site Type field boundary
Period Post medieval
NGR NY 14454 33726
Source Walkover Survey
Description An area of a possibly removed field boundary close to an area of ridge and furrow remains and within the area possibly used as an open field system behind Redmain.
Assessment The heritage asset lies on the proposed route of the pipeline and could subsequently be affected by any excavations linked with the installation of the pipeline.

Site Number 22

Site Name field boundary

Designation

NHL Number

Site Type field boundary
Period Post medieval/ modern
NGR NY 13963 33433
Source Walkover Survey
Description An established field boundary with several mature trees along its length.
Assessment The heritage asset lies along the proposed route of the pipeline and could be subsequently affected by any excavations linked with the installation of the pipeline.

Site Number 23

Site Name removed field boundary

Designation

NHL Number

Site Type field boundary
Period Post medieval/ modern
NGR NY 13628 33295
Source Walkover Survey
Description A removed field boundary possibly associated with the open field system behind the village of Redmain.

Assessment The heritage asset lies on the proposed route of the pipeline and could subsequently be affected by any excavations linked with the installation of the pipeline.

Site Number 24

Site Name field boundary

Designation

NHL Number

Site Type field boundary

Period Post medieval/ modern

NGR NY 13275 33571

Source Walkover Survey

Description An established field Boundary with several mature trees along its length.

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

Site Number 25

Site Name field boundary

Designation

NHL Number

Site Type field boundary

Period Post medieval/ modern

NGR NY 12955 33601

Source Walkover Survey

Description An established field boundary with several mature trees along its length.

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

Site Number 26

Site Name Isel Grange

Designation Grade II listed

NHL Number 1145217




Site Type building

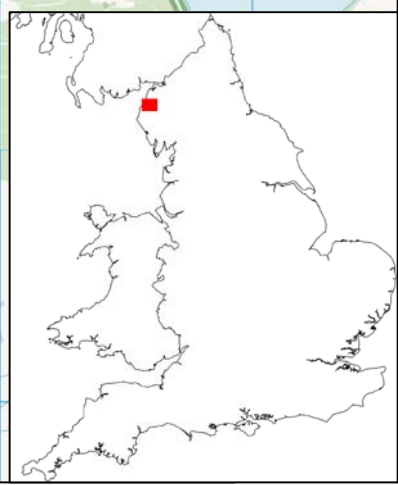
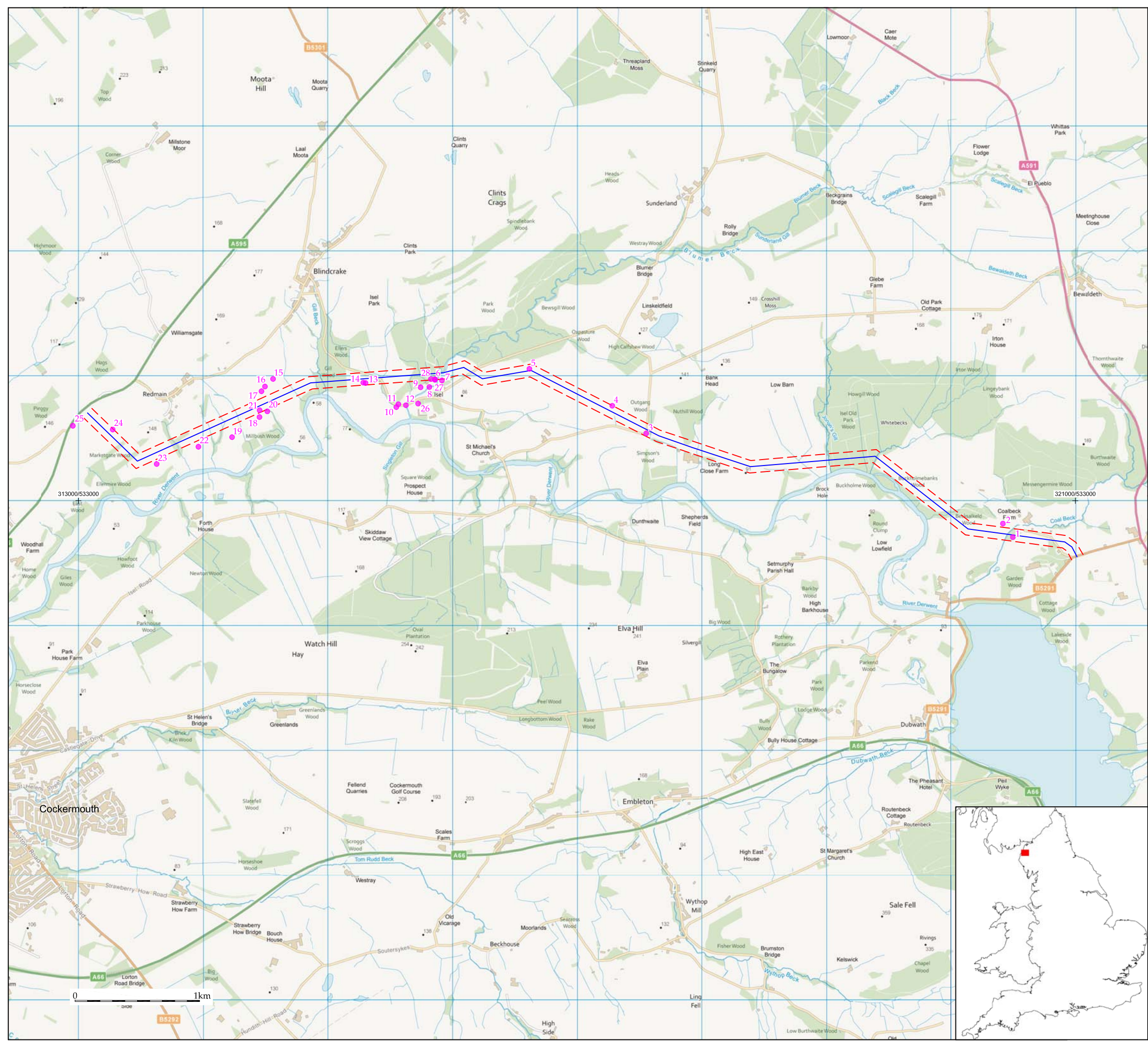
Period Post medieval/ medieval
NGR NY 15726 33779
Source Walkover Survey
Description Isel Grange is a 18th/19th century building associated with Isel Hall. Constructed from red sandstone and converted into modern flats
Assessment The heritage asset lies within the corridor of the proposed development but not on the line of the pipeline. Any potential impact will be minimal and restricted to the installation of the pipeline.

Site Number 27
Site Name byre south of Isel water mill
Designation Grade II listed
NHL Number 1312046
Site Type building
Period Post medieval
NGR NY 15861 33970
Source Walkover Survey
Description A byre closely associated with Isel water mill with medieval origins, however, with more modern alterations and possible changes.
Assessment The heritage asset lies within the corridor of the proposed development but not on the line of the pipeline. Any potential impact will be minimal and restricted to the installation of the pipeline.

Site Number 28
Site Name Isel mill house and granary
Designation Grade II listed
NHL Number 1312044
Site Type building
Period Post medieval
NGR NY 15829 33976
Source Walkover Survey
Description The mill house and associated granaries of Isel mill.
Assessment The heritage asset lies within the corridor of the proposed development but not on the line of the pipeline. Any potential impact will be minimal and restricted to the installation of the pipeline.

APPENDIX 2: FIGURES

PROJECT:	Kilnhill to Pinggy Wood Pipeline
CLIENT:	United Utilities
SCALE:	1:30,000 at A3
DRAWN BY:	AB
DATE:	April 2015
KEY:	<ul style="list-style-type: none">  Route of pipeline  100m width corridors  Heritage assets
REPORT No:	CP11260
FIGURE:	1



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Figure 1: Route of pipeline showing locations of heritage assets.

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