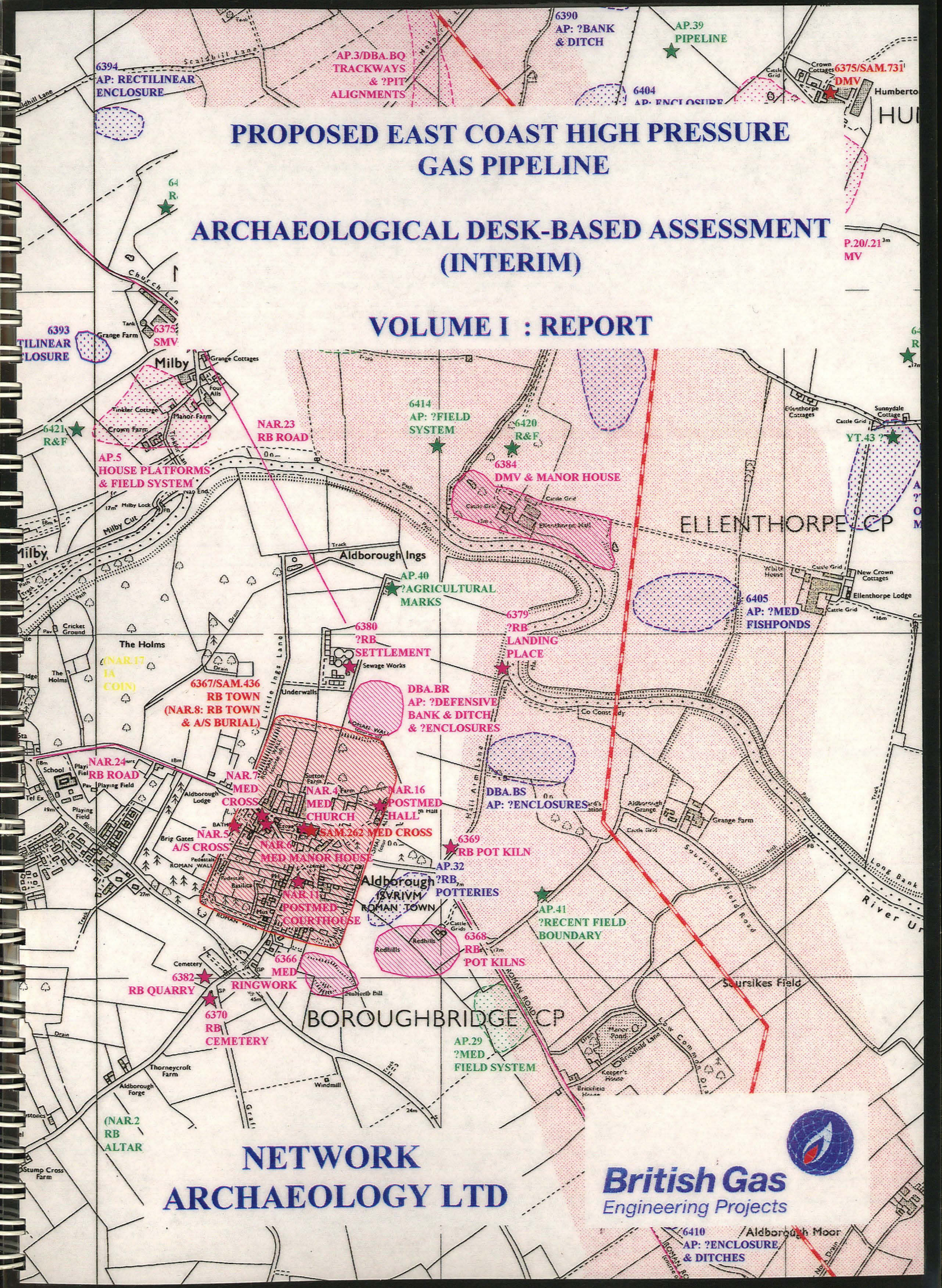
PROPOSED EAST COAST HIGH PRESSURE GAS PIPELINE

ARCHAEOLOGICAL DESK-BASED ASSESSMENT (INTERIM)

VOLUME I : REPORT



NETWORK ARCHAEOLOGY LTD

British Gas
Engineering Projects

98/11

PROPOSED EAST COAST HIGH PRESSURE GAS PIPELINE

ARCHAEOLOGICAL DESK-BASED ASSESSMENT (INTERIM)

Prepared by

NETWORK ARCHAEOLOGY LTD

For

BRITISH GAS ENGINEERING PROJECTS

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1 SUMMARY

1.1 General

This report is an interim archaeological desk-based assessment of the proposed British Gas *"East Coast High Pressure Pipeline"* between Bishop Auckland, County Durham and Wisbech, Cambridgeshire.

1.2 Results

The assessment collected and collated information on over 2100 archaeological sites and findspots/scatters within a 3km-wide data-collection area and, within this, a detailed 1km study corridor. Each site has been placed into one of five categories (A-E), ranging from Scheduled Ancient Monuments to single findspots. Almost 50% of all sites were categorized 'B'and 'C': those considered to be of sufficient archaeological importance to be avoided prior to any initial field survey (Stage 3). Approximately 15% (60) of Category B and C sites within the 1km study corridor were lying in the direct path of the proposed pipeline route when the assessment began. All but four of the Category B sites, and all but 27 of the Category C sites, have since been avoided by route modifications recommended by Network Archaeology Ltd to British Gas Engineering Projects during the data collection period. The remainder could not be avoided at this stage, due to various engineering and environmental constraints.

1.3 Recommendations

Outline recommendations suggest an initial (Stage 3) programme of fieldwalking, topographical survey and geophysical survey (magnetic scanning) of the whole of the proposed pipeline route. Also advised is detailed scanning of Category B, C and D sites crossed by the proposed route. This programme is intended to:

- Assess more fully the archaeological potential of known sites which are both certain and likely to be affected by the proposed pipeline.
- Identify as yet undiscovered sites along the proposed route.
- Facilitate the implementation of a programme of further investigation (Stage 4) for any sites or areas of archaeological potential identified during the earlier stages of assessment (Stages 2a and 3).

Attention is also drawn to the two major wetland zones traversed by the proposed pipeline route (The Humber Wetlands and the Southeast Lincolnshire Fenlands), as well as to a number of existing linear landscape 'sites' (such as Roman roads) which are crossed by the proposed pipeline route, and to the proposed route where it passes close to a number of particularly complex archaeological landscapes.

2 INTRODUCTION

2.1 General

British Gas Engineering Projects is currently planning to construct a 300km long, 48" high pressure pipeline, the *"East Coast High Pressure Pipeline"* (Project No. M509), to transport natural North Sea gas between a compressor station at Bishop Auckland (NZ 280308), County Durham and a compressor station at Wisbech (TF 462162), Cambridgeshire. The proposed route passes through six counties and unitary authorities: County Durham, North Yorkshire, East Riding of Yorkshire Unitary Authority, North Lincolnshire Unitary Authority, Lincolnshire and Cambridgeshire (Figure 1).

In July 1996, Network Archaeology Ltd was commissioned to carry out an archaeological desk-based assessment (Stage 2a), in order to quantify and assess the known and potential archaeological resource within the proposed route corridor, and to make outline recommendations for further investigation.

This report presents the results of the archaeological desk-based assessment of a study corridor based upon the proposed pipeline route of August 1996. The assessment has been prepared in three volumes:

Volume I	The present report.
Volume II	A gazetteer of all sites identified during the assessment.
Volume III	A set of 47, 1:10,000 scale archaeological constraint maps showing the proposed pipeline route (modified - Issue C), the 1km study corridor, and the archaeological sites recorded.

2.2 Requirements of the existing brief

British Gas Engineering Projects issued Network Archaeology Ltd with the existing brief for undertaking archaeological desk-based assessments (Appendix 1).

2.3 The present context of pipeline assessments in relation to the pipeline project

Linear developments such as pipelines provide an opportunity to examine a transect across the landscape and the spatial and temporal variability of human activity within it. They can also be enormously deleterious to the archaeological resource. However, through the mutual co-operation and constant liaison between archaeologist and engineer at all stages of a project, a route which minimises the disturbance of archaeological remains can be achieved. This approach is exemplified by the East Coast High Pressure Pipeline project, where Network Archaeology Ltd worked closely with the engineers to achieve an archaeologically least damaging provisional pipeline route. The relatively long period of time between the inception/planning and construction of this project means that archaeological implications can be considered at the earliest opportunity. This desk-based assessment marks the first stage in what is expected to be a detailed, investigative programme of mitigation, designed to prevent the unnecessary destruction of the archaeological resource along the proposed pipeline. In order for this programme to succeed, continuous liaison between British Gas and the archaeologists involved in the next stage of the project is essential.

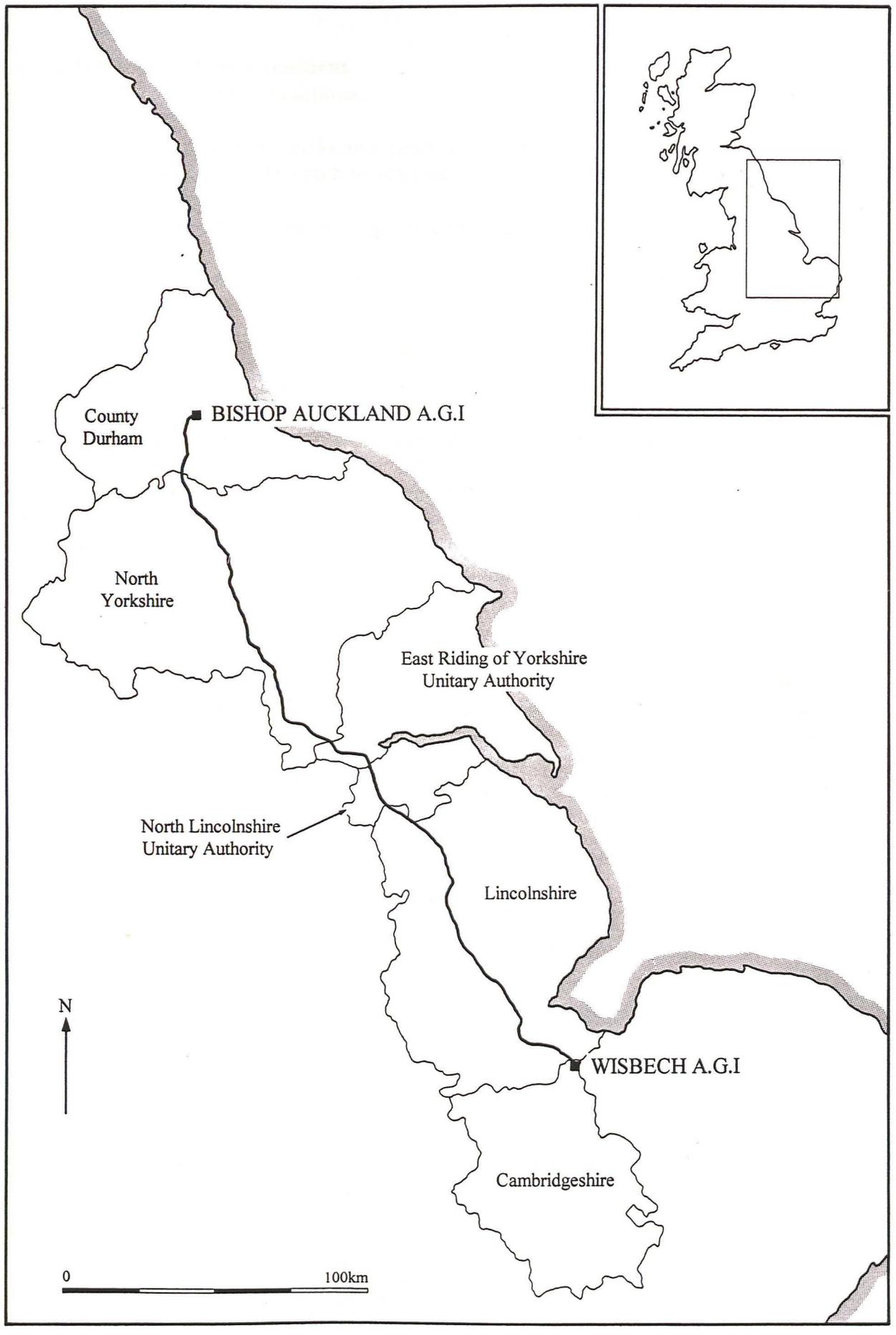

Figure 1 : Location plan of the proposed East Coast High Pressure Pipeline

2.4 The Objectives of the assessment

These can be broadly defined as follows:

- To identify and define the known extent of the archaeological deposits within the study corridor and to provide a preliminary evaluation of their importance.
- To assess the potential for new sites as yet unrecorded.
- To assess the potential for evaluatory field survey and make appropriate recommendations (Stage 2a and 3 - see Appendix 2)

2.5 Preliminary archaeological study

A preliminary archaeological desk-based assessment was carried out by RSK Environment Ltd in August 1996 as part of its overall routeing feasibility report. It was principally limited to a review of Scheduled Ancient Monuments within a number of optional route corridors, in order to assist in the selection of a preferred route (RSK, 1996, 1). The report concluded that the Scheduled Monuments presented no major constraint upon the route corridors, and recommended a more detailed archaeological study in order to identify the large number of other archaeological sites and find spots likely to exist within the preferred corridor.

2.6 Scope of archaeological/historical data search

In view of the length of the proposed pipeline, and the urgency in which the British Gas engineers required routeing advice, it was decided largely to confine the archaeological assessment to a thorough search of the county-based Sites and Monuments Records, and to the detailed examination of aerial photographic data from a variety of sources (see 3.2). There was relatively little opportunity for the study of Ordnance Survey and other historical maps, for the analysis of place-names, or for looking at geotechnical (*eg.* borehole) data. Neither was it feasible to carry-out visits along the proposed route, although topographic survey is anticipated for Stage 3.

2.7 Scope of report

As a result of various time constraints, including the need to begin a programme of fieldwalking before the new year, British Gas requested that an 'interim' report be submitted. This document should not, therefore, be regarded as a comprehensive account of the known and potential archaeology within the study corridor.

3 METHODOLOGY

3.1 Study corridor

The focus of the desk-based assessment was a 1km-wide study corridor based upon a preferred pipeline route selected from the route options identified during the feasibility stage. In addition to recovering data for this corridor, information was also collected from 1km either side of the central corridor. This broader, 3km-wide, data-collection area, provided a more complete archaeological and historical context for the archaeological sites lying within the study corridor. It also enabled rapid re-routing without the need to re-consult the data-holding bodies. The examination of aerial photographs for hitherto unrecorded archaeological sites was confined to the 1km study corridor, as was the study of any historical maps.

Scheduled Ancient Monuments were additionally recorded outside the 3km data collection area if they still happened to appear on the archaeological constraint maps (VOL III).

Since the commencement of the assessment in August 1996, the proposed route has been subject to various modifications, largely due to environmental and engineering constraints. The proposed route issued in August 1996 formed the basis for the present archaeological study corridor, and has been subject to three subsequent revisions (Issues A, B and C). The current issue at the time of writing is Issue C (September 1996). The archaeological constraint maps show this revised route, together with the 1km study corridor based on the August issue.

In order to avoid confusion in the text, 'the proposed route (Aug 96)' refers to the original route of August 1996, whilst the revised route (Issue C) is simply referred to as the 'proposed (pipeline) route'.

3.2 Data collection and collation

The main source of information was the county-based Sites and Monuments Record (SMR), held by each of the counties traversed by the proposed pipeline. These contain records of all known archaeological sites and finds relating to the counties.

Scheduled Ancient Monuments (SAMs - legally protected under the Ancient Monuments and Archaeological Areas Act 1979) were identified from both county SMRs and from the preliminary archaeological study by RSK.

Aerial photographic data formed a large proportion of the information collected. The two most important national repositories, the National Library of Air Photographs (held by the Royal Commission on the Historical Monuments of England (RCHME) in Swindon) and the Cambridge University Committee for Aerial Photography in Cambridge, were both visited. Oblique and vertical photographs were studied for the whole route, including a set of vertical aerial photographs taken of the proposed pipeline route commissioned by British Gas, and also photographs belonging to the RCHME's National Mapping Programme (covering the southern part of North Lincolnshire Unitary Authority and the northern half of Lincolnshire).

A limited amount of cartographic and documentary data was examined at each of the County Record Offices, including early editions of the large scale (25" and 6") Ordnance Survey maps. A number of libraries were also visited in order to consult a variety of published books, articles

and periodicals for general background information on the archaeology and geology/topography of the various regions.

The geotechnical report produced by Cuthbertson Environmental Ltd (1996) for British Gas provided the main topographical/geological information.

Fuller details of the various sources consulted can be found in Appendix 3.

3.3 Categorization of archaeological sites

The archaeological sites identified during the desk-based assessment have been placed into one of five categories, A to E, A sites being Scheduled Ancient Monuments, and E sites being largely single findspots. Categorization was based on subjective analysis of as many different criteria as possible, including information recovered from the SMRs and other data-holding bodies.

The categories into which the archaeological sites or findspots have been placed are not fixed; there is every possibility that a site's category may change as a result of findings made during the later field survey stages.

Table 1 below lists a number of examples for each category of site, together with the corresponding mitigation strategies as recommended by Network Archaeology to British Gas.

	A	B	C	D	E
Description	Scheduled Ancient Monuments (SAM)	Archaeological sites of known character/date	Archaeological sites of uncertain character/date	Other archaeological sites and some artefact scatters	Single findspots and modern field boundaries
Examples	n/a	Settlements, Burial Sites, Villas, Roman Roads, Castles, DMVs, Existing Buildings	Possible Settlements, Field-Systems, Enclosures,	Field Boundaries of probable recent date, Ridge and Furrow	Pottery of various periods, Coins,
Mitigation	To be avoided	Avoidance highly recommended	Avoidance recommended	Avoidance not recommended at this stage	Avoidance unlikely to be necessary

Table 1 : Categorization of archaeological sites and findspots/scatters

3.4 Reliability of data

Account should be taken of the variability in the reliability of data collated from secondary sources. In order to make some assessment of this variability, in the Gazetteer (VOL II) each site was given a reliability rating of either High, Medium or Low. In many cases, inadequate information prevented reliable rating. These sites were generally allocated a Medium rating. Many of the archaeological sites plotted from aerial photographs in Durham and North Yorkshire were given a Low or Medium score, since a large part of this plotting was carried out by non-trained staff on various MSC schemes in the 1980s. Conversely, the aerial photograph plots from the RCHME's National Mapping Programme are regarded as a highly reliable source, so have been allocated a High rating. Other sites given a similarly High reliability value were those aerial photograph sites identified and sketch-plotted during the assessment by the authors (referred to by the prefix 'DBA').

4 DESCRIPTION OF THE PIPELINE CORRIDOR

4.1 The pipeline project

The proposed *'East Coast High Pressure Pipeline'* (Project No. M509), will transport North Sea gas via a compressor at Bishop Auckland in Co. Durham, within a 300km long, 48" high pressure pipeline to Wisbech, in North Cambridgeshire.

At present, the proposed pipeline is planned to be constructed in two halves, to the north and south of the River Aire, that is, the boundary between North Yorkshire and the East Riding of Yorkshire Unitary Authority.

4.2 Physical background

The proposed 300km pipeline traverses a variety of solid geologies (mainly clay, limestone and sandstone), which determine the main physiographical features of the landscape along the route.

The local topography is modified by an extensive and varied mantle of late Quaternary Drift deposits of various origins; glacial, periglacial, lacustrine, fluvial, estuarine and aeolian.

4.2.1 County Durham

4.2.1.1 Topography and Geology

To the south of Bishop Auckland AGI, the proposed pipeline attains elevations of up to 140m AOD for almost twenty kilometres, within an `upland area' fringing the eastern Pennines, before descending to the lowlands of the meandering River Tees at *c.*45m AOD, to the west of Darlington.

The complex topography of the surrounding landscape reflects tectonic effects upon the underlying rock strata (Magnesian Limestone and occasional Lower Coal Measures), which were uplifted, faulted and gently folded and then subjected to prolonged erosion.

Except for a few limited exposures of limestone and coal to the west of Newton Aycliffe, these rocks are masked by Glacial Boulder Clay and occasional patches of Morainic Drift and Fluvioglacial Sand and Gravel. Alluvium is present within the floodplains of the River Tees and a number of smaller feeder streams; Red House Beck, Dene Beck and the Cocker Beck.

4.2.1.2 Soils and Landuse

Mixed farming is predominant within the foothills of the eastern Pennines, in an area characterised by brown earth soils. Groundwater gleyed soils are present above alluvium.

4.2.2 North Yorkshire

4.2.2.1 Topography and Geology

South of the River Tees (*c.*45m AOD), the proposed pipeline follows a parallel course with the A1(T) to its east side, for about fifty kilometres. The route traverses a semi-upland area with a maximum elevation of 80m AOD before descending gradually along the east and later, west side of the River Swale, to its confluence with the River Ure at *c.*25m AOD, to the east of

Boroughbridge. Further south, the route rises again to heights of 60m AOD, descends and turns south-east to cross the River Nidd at *c.*15m AOD.

From the River Nidd, the route turns south-east for twenty kilometres; it rises over Marston Moor (*c.*35m AOD) and descends to the River Wharfe (at *c.*5m AOD), to the south-west of York. The remainder of the route remains below 8m AOD. For twelve kilometres, the route continues south before it turns south-east to the south of Selby and continues for fifteen kilometres towards Goole, and descends to the River Aire (under 5m AOD), a tributary of the River Ouse.

This section of the route through the Vale of York, fringes the Pennine foothills to the west and to the east, the Cleveland, Hambleton Hills, and Howardian Hills, the western limits of the North York Moors.

The solid geology along the route through Yorkshire is predominantly Sherwood Sandstone, apart from the northernmost twelve kilometres which is Magnesian Limestone and occasional Lower Coal Measures. The Sandstone is deeply faulted to the south of the River Wiske and River Nidd, and outcrops to the west of Goole, in the south of the county.

These underlying rocks are masked by a more complex range of Drift deposits including Boulder Clay, Glacial Lacustrine and occasional Morainic Drift and Fluvioglacial Sand and Gravel. The Boulder Clay is dominant for thirty kilometres to the south of the River Tees and also between the River Swale and the River Wharfe. The remaining section of the route crosses an ancient lacustrine plain, a legacy of a vast late Devensian glacial lake (Lake Humber) in the Vale of York (see section 4.2.5).

Patches of Fluvioglacial Sand and Gravel are mostly found in the vicinity of the River Swale, whilst the Morainic Drift is restricted to the area between the River Nidd and River Wharfe, to the west of York.

Peat is known to the north of the River Nidd, near Whixley, and also south of the River Swale near Asenby. Pockets of unmapped peat, concealed within, or at shallow depth below alluvium is likely over the Sherwood Sandstone, particularly to the south-east of Hambleton (Gaunt 1994, 125-127).

Alluvium is present within the floodplains of the River Tees, River Swale, River Ure, River Nidd, River Wharfe and River Aire, and also numerous tributary rivers and streams including the Clow Beck, Uckerby Beck, River Whiske, Ouse Gill Beck, Gelthorpe Gutter, Sike Beck, Healaugh Beck and Selby Dam.

4.2.2.2 Soils and Landuse

Mixed farming is predominant upon the brown earth soils of the eastern Pennine foothills, although there is an increasing emphasis upon arable cultivation further south into the Humber wetlands, where Stagnogley, brown sand, sandy gley soils and occasional gleyed podzols are formed over Boulder Clay, Lacustrine deposits and patchy glacial outwash. Groundwater gleyed soils are present above alluvium.

4.2.3 East Riding of Yorkshire and North Lincolnshire Unitary Authority

4.2.3.1 Topography and Geology

From the River Aire (under 5m AOD), the route continues south-east with little relief for over twenty kilometres, passing beneath the M62 and shortly afterwards crossing the Knottingley and Goole Canal, and also the Dutch River, the canalised course of the River Don and its tributary, the River Went. To the south of Goole, the route crosses the northern fringes of Thorne Moors and the former course of the River Don. To the west of Scunthorpe, it crosses the River Trent, and continues parallel with it for a further ten kilometres to the south within its floodplain, to the River Eau (under 2m AOD), a tributary of the Trent. The relief never rises over 5m AOD.

The solid geology, Keuper Marl, is masked by induced alluvium (warp - see section 4.2.5) along the entire section of the route, except for Glacial Lacustrine Deposits near the River Aire and minor patches of Head and Peat mostly north of the River Eau. Further, unmapped peat, up to one and a half metres thick, and blown sand is likely within the Trent floodplain, or upon the first terrace, east of the river (Gaunt 1994, 127)

4.2.3.2 Soils and Landuse

This region is characterised by the intensive arable exploitation of sandy-gleyed and groundwater-gleyed soils derived over induced alluvium, or 'warp' within a artificially drained landscape. Earthy peat soils are present across Thorne Moors.

4.2.4 Lincolnshire and Cambridgeshire

4.2.4.1 Topography and Geology

From the River Eau (under 2m AOD), to the east of the Isle of Axholme, the pipeline route turns south-east for twenty five kilometres, leaving the floodplain of the River Trent, to rise over a limestone ridge (*c.*50m AOD), to the north-east of Gainsborough. To the west of Market Raison, on the western edge of the Ancholme Valley, the route turns south for eighteen kilometres, as it descends to the River Witham (under 2m AOD), to the east of Lincoln.

For fifteen kilometres to the south of the River Witham, the route skirts the eastern side of a low range of hills (over 20m AOD), which fringe the eastern side of *The Lincolnshire Fens*, tracts of alluvial drift interspersed by major dykes locally draining into the Witham, Welland and Nene.

The route then turns south-east for thirty five kilometres across Digby Fen, Dorrington Fen, Ruskington Fen, Anwick Fen, and crosses the River Slea to the north-east of Sleaford. Further south-east, it crosses Ewerby Fen, Howell Fen, Heckington Fen, Great Hale Fen, and Sutterton Marsh, to the east of Donnington, close to the Fosdyke, before reaching the River Welland (at *c.*7m AOD).

Crossing into the county of Cambridgeshire, the route runs parallel with the Welland on the south-east side of its floodplain, for ten kilometres, across Weston Marsh and Spalding Marsh, before it turns east for a further twenty kilometres, across Whaplode Fen and Holbeach Marsh, never rising over 5m AOD, and enters the Wisbech AGI on the west bank of the River Nene, to the south-west of The Wash.

The underlying solid geology is very varied along this section of the proposed route. The northern end (for seventy kilometres between the Rivers Eau and Slea) is dominated by Oxford Clay and Lias Clay, apart from a seven kilometre section to the north-east of Gainsborough, where the Drift is locally thin over an eastward-dipping ridge, capped by Great Oolitic Limestone, with associated exposures of Cornbrash, Blisworth Clay, and Kellaway Sand and Gravel. The Lias is exposed south of the River Witham, whilst the Oxford Clay is exposed to the north of the River Slea and additionally to the north of the River Witham and close to the New River Ancholme.

South of the River Slea, the route crosses West Walton Formation, apart from a fifteen kilometre wide band of Oxford Clay, associated with the floodplain of the River Welland. The final ten kilometres of the route is Ampthill Clay.

At the north end of this section of the route, the underlying Lias and Oxford Clay are for the most part masked by patches of Boulder Clay, Head, Lacustrine Deposits and occasional Glacial Sand and Gravel.

For almost fifty kilometres to the south of the River Witham, the route traverses Fenland Drift (Barroway Drove Beds) and Boulder Clay, apart from a ten kilometre section of peat, north of the River Slea, and patches of Fluvioglacial Sand and Gravel, and Sleaford Sand and Gravel at Howell Fen, to the south of the River Slea. The remaining distance to Wisbech is entirely Fenland Drift (Terrington Beds).

Alluvium is present within the floodplains of the River Eau, Seggimore Beck, River Ancholme and Barlings Eau.

4.2.4.2 Soils and Landuse

The agricultural regime of the northern section is mixed farming, whilst to the south-east, intensive arable exploitation predominates within The Fens.

Stagnogley (surface water gleyed soils) predominate above Boulder Clay and Lacustrine Deposits, and occasional gleyed podzols are present over blown sand and glacial outwash. Earthy peat soils are developed over peat to the north of the Slea. Groundwater gleyed soils are present over (induced) alluvium.

4.2.5 The Humber Wetlands

The proposed pipeline traverses north-west to south-east across an important wetland, known as the Humber Wetlands, of which two areas, the Humberhead Levels and the Vale of York (separated by the River Aire) are directly affected by the route.

The area is characterised by a complex late-glacial and post-glacial landscape development; the formation of Lake Humber, followed by major riverine incision. A major vegetation change occurred during the second millennium bc, when an extensive mixed woodland was gradually preserved by peat formation within a developing fen environment. A remnant of this event, Thorne Moor, is one of the largest remaining expanses of lowland raised bog in Britain. The proposed pipeline crosses its north-eastern margins.

The landscape of The Fens south of the Humber is dominated by the extensive floodplains of the Rivers Aire, Ouse, Trent, Don, Torne and Idle, the low-lying nature of which (below 10m AOD) meant that many areas remained regularly or permanently under water. Limited artificial drainage of the Fens began in the medieval period, there being new settlements associated with embanking and reclamation. Large scale drainage works commenced in the early seventeenth century, when Cornelius Vermuyden cut new channels and diverted the River Don.

However, since the nineteenth century, the introduction of tile drains and 'warping', and the localised removal of peat provided more effective drainage, and transformed the land into a rich fertile zone.

The nature of The Fens has had a profound effect upon the reconnaissance of archaeological sites; the waterlogged ground conditions and the depth of alluvial sedimentation prohibits detection. This problem is compounded by a tendency for aerial photographers to favour the higher areas (eg. Axholme), where sites are more likely to be visible.

Current understanding suggests that a dry-ground landscape persisted into the Neolithic period, when rising water tables rendered low-lying areas uninhabitable. Consequent waterlogging, flooding, and overbank and estuarine alluviation may have forced a shift in settlement to higher land during the later Neolithic, Bronze Age and Iron Age, a pattern which is broadly reflected by the distribution of known sites. However, this is not to say that the valley bottoms were not subject to seasonal exploitation or intermittent occupation during periods of sea-level regression.

In summary, there is a high potential for Mesolithic and Neolithic sites upon the buried dry-ground surface, and for archaeological preservation within the overlying peat (such as, the Bronze Age trackway and bog bodies of Thorne Moor). A high preservation potential is likely in areas of high water-table, acidity, sedimentation and peat growth. Visibility of sites is the obvious problem. (Ellis 1993, 26-37, 41-105, 125-126; Gaunt 1994, 1-4, 125-130; Loughlin and Miller 1979, 7, 17, 147, 173).

The unique and important fen landscape is the focus of extensive on-going archaeological research, to which due consideration should be given during subsequent stages of investigation for this project. Particular attention should be given to the section of the route around the northern margins of Thorne Moor.

4.2.6 The Southeast Lincolnshire Fenlands

The southernmost section of the proposed pipeline route traverses an extensive tract of former wetland, known as The Fenland of eastern England, comprising sea marsh and freshwater fen.

It was created by the successive accumulation of alluvial deposits within a natural lowland basin. As with the Humber wetlands, this area has also been subjected to drainage over the past few hundred years resulting in a rich fertile landscape. The potential for preservation is high, as testified by sites such as Flag Fen.

The unique and important fen landscape is the focus of extensive on-going archaeological research (The Fenland Project), to which due consideration should be given during subsequent stages of investigation for this project.

5 KNOWN ARCHAEOLOGY WITHIN THE STUDY CORRIDOR

5.1 General

Data was collected for over 2100 archaeological sites and findspots/scatters. The totals for each county, by category, are listed in the following table.

	County Durham	North Yorks	E. Riding of Yorks U.A	N. Lincs U.A	Lincolnshire	Cambridgeshire	
A	3	21	0	1	36	0	61
B	39	313	9	41	247	7	656
C	29	270	5	5	138	6	453
D	44	285	4	31	168	2	534
E	6	80	0	22	220	1	329
	121	969	18	100	809	16	**2033**

Table 2 : Total numbers of archaeological sites/findspots by county and category

These were plotted onto a series of 47, 1:10,000 scale maps showing both the 1km study corridor (based on the August 1996 issue proposed route) and the Issue C proposed pipeline route (September 1996) (VOL III).

In the county descriptions which follow (5.3-5.8) discussion has been largely restricted to those archaeological sites lying sufficiently close to the proposed pipeline route to be of concern, in particular, to those which are crossed by it. Little or no reference is made to sites situated outside the 1km study corridor, unless they are of particular relevance to the discussion, or unless they now lie closer to the proposed route because the latter was moved to avoid some constraint (archaeological or otherwise). Mention of specific sites is accompanied by the relevant Map number, the source reference, and the national grid reference for the 1km square in which the site lies.

The density of known sites and findspots along different parts of the study corridor is quite variable, some areas appearing quite rich, others apparently devoid of archaeological remains. This is most unlikely to represent the real concentration of archaeological sites and artefacts present along the route. Rather, it probably reflects a number of secondary factors, the most important of which are as follows:

- The quantity of past archaeological/historical research. Areas or counties which have been the focus of fieldwork or research projects are likely to possess a greater archaeological resource.

- The amount of aerial photographic cover. The more comprehensive and intensive the cover, the greater are the number of sites likely to have been discovered.

- The nature of the county SMR. Due to reasons of funding, some SMRs are more up-to-date than others.
- The nature of the geology and topography of any particular area or region. Some geological deposits are, for example, more conducive than others to the production of cropmarks and soilmarks (which are then visible on aerial photographs). In particular, sites on heavy clay land are much less likely to show on aerial photographs than those situated on river terrace gravels or chalklands. In low lying, often wetland areas, deposits of peat and/or alluvium can mask archaeological sites.

A combination of the above factors can therefore give the misleading impression of little or no past human activity in any given area or region. This should be borne in mind when considering the distribution of known sites in the six counties/unitary authorities crossed by the proposed pipeline.

5.2 Route modifications during the data collection/collation phase

In order to mitigate against potential routeing problems as early as possible, regular feedback took place between the British Gas pipeline engineers and Network Archaeology Ltd throughout the data collection and collation period. This resulted in a number of route modifications, mostly minor, some relatively major, prior to the issue of the proposed pipeline route in September (Issue C). In many cases, each re-route avoided more than one archaeological site. For ease of reference, they have been numbered sequentially from north to south, and are listed in the following table.

Re-route No	Map No	NGR	Reference of site avoided	Description of site avoided	Category
1	6	SE 2799	DBA.BC	AP: 2 oval ?enclosures	C
2	7	SE 3395	AP.6	enclosures	C
3	7	SE 3393	AP.5	?settlement	B
3	7	SE 3393	AP.6	?settlement	B
4	8	SE 3489	8547	AP: ?enclosure	C
4	8	SE 3589	8490	AP: enclosures	C
4	8	SE 3589	8492	AP: rectilinear enclosures	C
5	9	SE 3783	8399	AP: enclosures & ?hut circle	C
6	10	SE 3775	8326/DBA.BM	AP: ?enclosure	C
7	11	SE 3874	8143	AP: ?enclosures & ditches	C
8	12	SE 4068	AP.3/DBA.BQ	AP: trackways & ?pit lines	B
8	12	SE 4167	6405	AP: ?Med fishponds	C
9	12	SE 4264	6323	AP: square enclosure	C
9	12	SE 4363	6322	AP: enclosure	C
10	13	SE 4362	6317	AP: trackway & ditches	C
10	13	SE 4362	6313/DBA.BT	AP: enclosures & trackway	C
10	13	SE 4361	AP.59	?enclosure	C
11	13	SE 4358	6221	AP: ?enclosure & r&f	C
12	14	SE 4455	6209	AP: enclosure complex	B
12	14	SE 4455	6210	AP: enclosures	C
12	14	SE 4355	6206	AP: ?droveway & enclosure	C

13	14/15	SE 4752	AP.31/.11	enclosures & field system	C
13	14/15	SE 4751	6073/6073.01	AP: ?ring ditches & ?field syst	C
13	14/15	SE 4851	AP.37/DBA.BV	?enclosure & field system	C
14	17	SE 5438	DBA.BZ	AP: rectangular structure	B
15	18	SE 5334	DBA.CB	AP: ?enclosures & ditches	C
15	18	SE 5333	9449	AP: ?trackway & recent fields	C
16	19	SE 5529	DBA.CJ	AP: enclosures & field system	B
17	27	SE 8700	NAR.35	AP: ?triple itchedoundary	B
17	27	SE 8700	50074	?Med archery practice or r&f	C
17	27	SE 8800	NAR.34	AP: enclosures & ditches	C
18	29	SK 9394	50437	AP: BA barrow cemetery	B
18	29	SK 9694	50326	AP: linears/enclosures	C
19	30	SK 9991	50324	AP: linear feature/?enclosure	C
19	30	SK 0191	51030	RB settlement debris	C
20	31	TF 0585	DBA.DM	AP: circular cropmarks	C
21	33	TF 0775	53040	AP: ?IA settlement	B
22	34	TF 0569	RCHME.42	AP: BA barrow cemetery	B
22	34	TF 0569	LINCS.A	?RB settlement	B
23	39	TF 1645	LINCS.R	RB building debris	C
23	39	TF 4516	DBA.DS	AP: ?boundary ditch	C
23	39	TF 4516	DBA.DR	AP: rect enc & ?buildings	B
24	40	TF 2142	DBA.EF	AP: enclosure complex	B
25	41	TF 2634	DBA.EU	AP: enclosure/ditches	C
26	45	TF 3521	22229	RB settlement	B
26	45	TF 3621	DBA.FJ	AP: enclosure/trackways	B
26	45	TF 3721	DBA.FM	AP: ?enclosure	C
27	47	TF 4515	9749	AP: trackway	B

Table 3 : Route modifications during the data collection/collation phase

In some of the above cases, it was not possible to completely avoid the known extent of the site, although for most of them, the most important part of the site was avoided (see 6 and 7).

5.3 COUNTY DURHAM (MAPS 1-4)

5.3.1 Category A sites

Three Scheduled Ancient Monuments (SAMs) lie close to the 1km study corridor, but none are actually present within it. Two of these are the sites of Deserted Medieval Villages (MAP 3: SAM.74, NZ 2319; SAM.70, NZ 2517), whilst the other is an Iron Age hillfort (MAP 2: SAM.58, NZ 2223).

5.3.2 Category B sites

Thirty-nine sites in this category were recorded for County Durham. Twelve of them lie within the 1km study corridor, although none of these were crossed by the proposed route (Aug 96), and only four are particularly close to the proposed pipeline route.

One of the four sites lying close to the proposed route is a well-defined rectilinear enclosure with internal divisions and with surrounding ridge and furrow earthworks (MAP 3: DBA.AQ (AP), NZ 2520). This might well represent a medieval farmstead.
Two others are the sites of Shrunken Medieval Villages (MAP 1: 1481, NZ 2425; 1482, NZ 2427). Although their known limits lie *c.*250m and *c.*400m respectively from the proposed pipeline route, associated features could well exist further east towards the latter.

The fourth is a prehistoric or Romano-British settlement site lying *c.*450m west of the proposed pipeline route (MAP 3: 1552/NAR.57 (AP), NZ 2315). Its limits are not defined, so could well extend towards the proposed pipeline.

5.3.3 Category C sites

Twenty-nine sites were identified for this category. Virtually all are sites identified by aerial photography. Most are described as 'enclosures', and though nearly all are undated, such sites tend to be associated with prehistoric and/or Romano-British activity. They are normally taken to represent early farmsteads. Eighteen of them lie within the 1km study corridor, four of these are crossed by the proposed route (no route-modification was possible).

Two of those crossed by the proposed route are both enclosures lying west of Bishop Auckland AGI (MAP 1: DBA.AC (AP), NZ 2630; 2882/2886/DBA.AD (AP), NZ 2630). The third consists of a linear feature almost two kilometres in length, lying east of Shildon (MAP 2: DBA.AI (AP), NZ 2425). The fourth is also a linear feature (c.800m long), situated south-east of Heighington (MAP 2: DBA.AO (AP), NZ 2521). These two linear anomalies might be fairly recent in date, for example, minor pipelines. Equally, however, they could represent much earlier features, such as medieval or Roman roads.

Other category C sites lying in particularly close proximity to the proposed pipeline route include:

- an enclosure (MAP 1: NAR.31 (AP), NZ 2631)
- a possible ditch system (MAP 1: DBA.AG (AP), NZ 2629)
- a possible enclosure (MAP 3: DBA.AS (AP), NZ 2517)
- a possible rectangular enclosure (MAP 3: 1553 (AP), NZ 2315)

5.3.4 Category D sites

Forty-four Category D sites were recorded, fourteen of which are situated within the 1km corridor. Three of these lie in the direct path of the proposed pipeline route:

- a substantial linear feature close to Bishop Auckland AGI probably represents the route of an existing pipeline (MAP 1: DBA.AB (AP), NZ 2630).

- east of Heighington village lay a series of what are probably recent field boundaries (they fit perfectly into the existing field pattern) (MAP 2: DBA.AO (AP), NZ 2522)

- ridge and furrow earthworks associated with the Category B site DBA.AQ (MAP 3: DBA.AR (AP), NZ 2520)

A few other Category D sites lying particularly close to the proposed pipeline route include:

- a post-medieval track (MAP 1: 2969, NZ 2830)
- an area of 'old lime kilns' (MAP 1: DBA.AA, NZ 2731)
- circular cropmarks, the extent of which is not recorded (MAP 2: NAR.22 (AP), NZ 2424)
- 'Fox Covert', the site of a former wooded area (MAP 2: DBA.AK, NZ 2523)
- a 'site' identified through aerial photography (MAP 4: 1581 (AP), NZ 2314)

5.3.5 Category E sites

Six Category E findspots are known, two lying inside the 1km study corridor and none of them forming any concentrations. The most notable find is that of a Palaeolithic axe, recorded within 1km national grid square NZ 2413 (MAP 4).

5.3.6 Potential for further sites

Three areas of particular potential have been identified:

- That part of the proposed pipeline within grid squares NZ 2424 & 2523 (MAP 2). Less than one kilometre to the west of here lies the site of an Iron Age settlement (360, NZ 2323), whilst a kilometre further west is SAM.58, an Iron Age hillfort (NZ 2223).

- The proposed pipeline route where it passes between a series of Category B, C and D aerial photograph sites situated between Stony Rigg Plantation (MAP 1, NZ 259291) & the area immediately north-east of Shildon (MAP 2, NZ 244269).

- The proposed route where it passes to the east of a concentration of aerial photograph sites including a number of enclosures and a prehistoric or Romano-British settlement site (MAP 3, within the four 1km squares centred on NZ 230160).

The existence of these concentrations of sites, particularly that containing the Iron Age hillfort and settlement, hints at foci of prehistoric (Iron Age) and/or Romano-British activity in the general locality. If true, then there is every possibility that the remains of other such early settlements exist in the close vicinity of the proposed pipeline route.

5.4 NORTH YORKSHIRE (MAPS 3-21)

In view of the 119km length of proposed pipeline which passes through North Yorkshire, description has been divided into six manageable areas, based approximately upon site density and ending at parish boundaries for convenience. The general density of sites for each of the six areas has been defined in the following manner, using the overall density of sites in the county as a standard from which to judge different parts of it:

AREA I	moderate
AREA II	dense

AREA III	moderate to dense
AREA IV	moderate to low
AREA V	moderate to dense
AREA VI	moderate to low

5.4.1 AREA I : Manfield (MAP 3, NZ 2215) to Thrintoft (MAP 7, SE 3295)

5.4.1.1 Category A sites

Seven Scheduled Ancient Monuments (SAMs) were recorded for AREA I, although only one of them actually lies within the 3km data-collection area. This is the site of Manfield Deserted Medieval Village, whose easternmost known extent lies 350m to the west of the proposed pipeline route (MAP 4: 12920.02/SAM.1274; NZ 2213).

5.4.1.2 Category B sites

Thirty-two Category B sites lie within the 3km data-collection AREA I, only one of which was crossed by the proposed pipeline route (Aug 96). This is the site of Newton Morrell Shrunken Medieval Village (MAP 4: 12714, NZ 2409). It was not possible to completely avoid this site, though the proposed route does only clip its north-east known extent which consists of ridge and furrow earthworks. Even so, the close proximity of the proposed pipeline is cause for concern, as associated settlement remains could continue further east, across the proposed route.

Two other Category B sites are located particularly close to the proposed pipeline route. One of these is another Shrunken Medieval Village (MAP 6: AP.20, SE 2899), the known limits of which lie only 120m south-west of the proposed route. Related features could therefore extend north-east towards the proposed route. The other is a Deserted Medieval Village and Grange (MAP 7: NAR.10, SE 2998). The location of the latter is not precisely recorded at the SMR, so it could actually lie in the direct path of the proposed pipeline.

5.4.1.3 Category C sites

Twenty-two Category C sites were recorded for AREA I, only one of which was crossed by the proposed pipeline route (Aug 96). It is the site of two probable oval enclosures, identified by aerial photography, and possibly representing an ancient farmstead (MAP : DBA.BC (AP), SE 2799). The site has been avoided (Re-route 1) by the latest proposed route, although the latter still lies within 60m of the site, so has the potential to disturb any associated archaeological remains.

Eleven other B sites lie sufficiently close to the proposed route to be of concern. These consist of:

- an enclosure and trackway, (MAP 4: AP.1/DBA.AW, NZ 2214). The south-east known extent of the trackway lies only 250m from the proposed pipeline route, and could well continue into its path.

- a series of enclosures thought to represent the site of a Deserted Medieval Village (MAP 4: DBA.AX (AP), NZ 2212). The known limits of this site lie less than 200m west of the proposed pipeline.

- a site described as a possible 'Roman Camp' located 380m west of the proposed route (MAP 4: AP.16, NZ 2211). Although its known extent is not recorded, the close proximity (to the proposed pipeline route) of a site with such a description has to be treated with some importance.
- Four separate enclosures, three of them described as rectangular/rectlinear, forming a small concentration east and north-east of Barton village (MAP 4: DBA.BA (AP), NZ 2409; AP.23, NZ 2409; AP.25, NZ 2409; MAP 5: DBA.BB (AP), NZ 2508). Their known extents lie within *c.*70m and 370m of the proposed route, so there is the potential for related features to exist in closer proximity to it.

- Two sites with possible ring ditches (MAP 5: AP.6, NZ 2406; AP.7, NZ 2405). These respectively lie *c.*70m and 330m west of the proposed pipeline; any associated remains might lie closer still to the proposed route.

- A site with three parallel ditches (potentially a trackway or boundary) and possible enclosures lying *c.*200m east of the proposed pipeline route (MAP 6: DBA.BD (AP), SE 2998). A westerly continuation of the potential trackway/boundary would bring it into the direct path of the proposed route.

- a possible enclosure whose known extent lies less than 30m north of the proposed pipeline route. The proposed pipeline easement might even encroach upon the site (MAP 6: AP.21, SE 2997).

5.4.1.4 Category D sites

Thirty-two Category D sites were recorded for AREA I. Only four of these are crossed by the proposed route:

- probable recent/modern field boundaries (MAP 5: AP.4, NZ 2408)
- probable recent/modern field boundaries (MAP 5: AP.13, NZ 2505)
- possible field system (MAP 6: AP.7, SE 2898)
- ridge and furrow (MAP 7: AP.35, SE 3196)

This figure does not include the 83 references to ridge and furrow which do not have PRN numbers. It is not known which (if any) of these survive as earthworks, though the likelihood is that a proportion is still visible on the ground today. The proposed pipeline route passes through, or very close to, eight areas:

- north-east of Manfield SMV and probably related to it (MAP 4: NZ 2213)
- north of Newton Morrell SMV and possibly related to it (MAP 4: NZ 2410)
- north-east of Middleton Tyas village (MAP 5: NZ 2406)
- south-east of Middleton Tyas village (MAP 5: NZ 2504)
- east of Moulton village (MAP 5: NZ 2503)
- north-east of Scorton village (MAP 6: NZ 2601)
- south-east of Scorton village (MAP 6: SE 2899)

- south-west of Brockholme village (MAP 7: SE 3097)

5.4.1.5 Category E sites
Only six Category E sites were identified in AREA I, three of which lie within the 1km study corridor. These consist of Neolithic axes and chisels (MAP 5: NAR.7 & NAR.8, SE 2899), and a Roman coin (MAP 6: 12961, SE 3097).

5.4.1.6 Potential for further sites
Two areas of potential have been identified:

- That stretch of the 1km study corridor immediately south of the border with Co. Durham (MAP 4: centred on NZ 2213). Here, a number of Category C enclosures and related features appears to form a slight cluster of sites, the character of which would tend to associate them with prehistoric activity. Their concentration close to the River Tees might well reflect the desire/need at that time to locate near to an important watercourse.

- The area west of a slight concentration of Category B and C sites including a possible settlement, ditched enclosures, and probable trackways (MAP 6: centred on NZ 2700). These too, are sites most frequently attributed to the prehistoric period.

Both these moderate concentrations hint at foci of prehistoric human activity in the general locality through which the proposed pipeline route passes.

5.4.2 AREA II : Thrintoft (MAP 7, SE 3295) to Newsham with Breckenbrough (MAP 9, SE 3782)

5.4.2.1 Category A sites
Two Scheduled Ancient Monuments (SAMs) were recorded in the 3km study corridor, but both lie outside the 1km corridor. They are Howe Hill medieval motte and bailey castle (MAP 7: AP.2/.1/SAM.276, SE 2995) and Howden post-medieval bridge (MAP 8: 12793/SAM.193, SE 3592).

5.4.2.2 Category B sites
Fifty-four Category B sites were recorded. Only 11 of these lie within the 1km study corridor, two of which were crossed by the proposed pipeline route (Aug 96). These are two cropmark complexes probably representing former settlements (MAP 7: AP.5 & AP.6, SE 2893). Both have been avoided by the latest proposed pipeline route (Re-route 2), although the latter still passes less than 50m to the west of their known extents, so any associated features could well be affected by it.

Four other Category B sites lie particularly close to the proposed pipeline route, three of them being identified through aerial photography. One of these includes an enclosure complex and field system with associated ring ditch, the southernmost known extent of which lies *c.*110m from the proposed route (MAP 9: 8488/DBA.BG & 8486 (AP), SE 3686). Immediately south-east of this is a second complex of enclosures, this too lying a similar distance from the

proposed pipeline route (MAP 9: 8496 (AP), SE 3786). The third aerial photograph site represents a Deserted Medieval Village; the proposed route passing less than 100m to the south-east (MAP.9: AP.14, SE 3784).

The fourth site lying close to the proposed route is an Iron Age settlement identified during the construction of the Yafforth to Towton gas pipeline in 1979 (MAP 9: YT.22, 3783). It appears to be part of a Category C group of enclosures (8401) lying less than 50m west of the proposed route.

5.4.2.3 Category C sites

Sixty Category C sites were recorded for AREA II. Almost all of these lie within the 1km study corridor, yet only five were crossed by the proposed pipeline route (Aug 96). Four of these were avoided (Re-routes 2, 4 and 5). The fifth is the site of an enclosure and associated ditch (MAP 8: 8492 (AP), SE 3589). It was possible with this site to avoid the most significant portion, the enclosure (Re-route 4) so that the proposed pipeline route now only cuts the single ditch running east from it. The proposed route does, nevertheless, remain sufficiently close to the enclosure to be of concern, especially as related features could exist in its vicinity.

A total of 18 Category C sites lie very close to the proposed pipeline route. Virtually all were discovered by aerial photography, and are nearly all enclosures with related ditches and/or possible trackways. These are listed below.

- The known limits of the site avoided by Re-route 2 remain less than 50m from the proposed route of the pipeline (MAP 7: AP.6, SE 3395).

- The proposed route passes between two areas of possible enclosures, missing their known extents by only *c.*50m (MAP 8: 12898 (AP) & 12899 (AP), SE 3492).

- The known extent of a complex of enclosures (MAP 8: AP.12, SE 3490) lies only 60m east of the proposed pipeline route.

- Two of the three sites avoided with Re-route 4 are still only 50m from the proposed route of the pipeline (MAP 8: 8547 (AP) & 8490 (AP), SE 3489), whilst the third is the site still crossed by the proposed route (8492 - see above).

- 70m east of the proposed route is a group of rectlinear enclosures (MAP 8: 8491 (AP), SE 3588).

- The known limits of a possible trackway and ditch lie *c.*100m south-west of the proposed pipeline route (MAP 9: 8497 (AP), 3786).

- An enclosure with ditches lies less than 100m west of the proposed route (MAP 9: AP.39, SE 3885).

- The proposed pipeline passes particularly close to ten sites with enclosures, trackways and possible ring ditches lying south-east and south of the village of Kirby Wiske, all of them discovered by aerial photography (MAP 9: 8413, 8392, 8418, 8385/8385.01, 8383/8383.01, 8398, DBA.BI, 8397, 8399 & 8401; SE 3884, 3883 & 3783).

5.4.2.4 Category D sites

Seventy-one sites of this category were recorded in this area, 32 of which are located within the 1km study corridor. Only two are crossed by the proposed pipeline route. These consist of an area of possible ditches or periglacial features (MAP 8: AP.36, SE 3491) and a group of possible medieval field boundaries (MAP 9: AP.32, SE 3885).

The above figure does not include the 23 references to ridge and furrow which do not have PRN numbers. The proposed pipeline route passes through one area of ridge and furrow, that situated south-east of Morton-on-Swale village (MAP 8: SE 3491).

5.4.2.5 Category E sites

Only seven Category E findspots are recorded for this area. Three of them lie within the 1km study corridor, and none form any concentrations. An Iron Age thong softener (MAP 7: 12890, SE 3494) is perhaps the most unusual of the finds.

5.4.2.6 Potential for further sites

Three areas have been identified:

- A marked concentration of enclosure complexes and field systems, as well as ring ditches and two probable former settlements, is suggestive of a focus for human activity, most probably in the prehistoric period (MAP 7: SE 3496 south to SE 3393). Although the route of the proposed pipeline skirts along the western limit of these sites, it seems reasonable to assume that additional remains exist further to the west. Hints that this focus of activity does extend are seen with the possible ring ditch lying 750m west of the proposed route (MAP 7: AP.16, SE 3294).

- A concentration of similar sites lies either side of the proposed pipeline route between SE 3292 and 3588 (MAP 8), whilst a third, again with sites situated either side of the proposed route, can be identified extending for *c*.5km between SE 3686 and 3783 (MAP 9). As with the above, both of these may well represent foci for prehistoric activity, so there is every possibility that other sites exist along the proposed pipeline route.

5.4.3 AREA III : Newsham with Breckenbrough (MAP 9, SE 3782) to Bilton-in-Ainsty (MAP 15, SE 4850)

5.4.3.1 Category A sites

Seven Scheduled Ancient Monuments (SAMs) are recorded for this area, two outside just outside the 3km study corridor, five within it, but none inside the 1km corridor. Three of them do, however, lie sufficiently close to the proposed pipeline route to be of potential importance. One of these is Humberton Deserted Medieval Village, whose southwestmost non-scheduled portion (Category B) lies only 200m from the proposed route (MAP 12: 6375/SAM.731 & AP.20/.21, SE 4268).

A second is the Roman town of ISVRIVM (Aldborough); here the proposed route passes to within 600m of the Roman walls (MAP 12: 6367/SAM.436, SE 4066). The potential for the existence of further sites in the area adjacent to this major Roman site should not be underestimated; smaller settlements typically grew up around such important centres during the Roman period, particularly on the banks of rivers and alongside roadways. Note should be made, therefore, of the close proximity of the proposed route to the Roman road which travels south from Aldborough (MAP 12: 6378, 4165).

The third SAM is an Iron Age hillfort. This is situated immediately south of Grafton village, just over 1km from the proposed pipeline route (MAP 12: 6290.SAM.1136, SE 4263).

5.4.3.2 Category B sites

A total of 132 Category B sites have been identified for this area, 36 of which lay within the 1km study corridor. Only five of these were crossed by the proposed route (Aug 96), three of these being the unavoidable lines of Roman roads (MAP 13: 6345, SE 4361; NAR.15, SE 4358; MAP 14: 6116, SE 4455). The fourth is a complex of possible trackways and pit alignments, potentially of the prehistoric period (MAP 12; AP.3/DBA.BQ, SE 4068). It was possible to modify the proposed pipeline route (Aug 96) in order to avoid the majority of this complex (Re-route 8), although the latest proposed route still clips the northernmost known extent of one of the possible trackways. The fifth site, a complex of enclosures (MAP 14: 6209 (AP), SE 4455), has been completely avoided (Re-route 12).

Fifteen Category B sites are situated particularly close to the proposed pipeline route:

- A group of enclosures and trackway lying *c.*160m east of the proposed route (MAP 10: 8318 (AP), SE 3877).
- A site comprising 'urns and tumulus' situated *c.*180m west of the proposed route (MAP 10: 8285, SE 3676).
- A medieval church, the site of which lies somewhere within SE 3775 (MAP 10: NAR.10).
- A ring ditch lying less than 200m east of the proposed route (MAP 11: 8189 (AP), SE 3874).
- A ring ditch situated *c.*300m west of the proposed route (MAP 11: 7010 (AP), SE 3969).
- Ellenthorpe Deserted Medieval Village and Manor House, the known limits of which lie less than 50m from the proposed pipeline route (MAP 12: 6384, SE 4167). The existence of possible medieval fishponds immediately east of the proposed route indicates that the proposed pipeline at this point probably passes through the centre of a medieval settlement focus.
- A possible Roman landing place lying *c.*350m upstream of where the proposed pipeline crosses the River Ure (MAP 12: 6379, SE 4166). The existence of this site suggests that

the river at this point has shifted little since Roman times. It may be, therefore, that further remains of Roman activity exist along this stretch of the river.

- The site of a Deserted Medieval Village lying immediately east of the proposed pipeline route (MAP12: 6319 (AP), SE 4364).

- A complex of possible burials relating both to the Romano-British and Anglo-Saxon periods, situated *c*.250m west of the proposed route (MAP 12: 6289 and NAR.3, SE 4263).

- A Bronze Age barrow situated 300m north of the proposed pipeline route (MAP 14: 6167 (AP), SE 4555).

- Earthworks relating to a Deserted Medieval Village, 250m west of the proposed pipeline route (MAP 14: AP.20/DBA.BU and 6055, SE 4554).

- Two complexes of enclosures situated less than 300m from the proposed route (MAPS 14/15: 6068 and 6069 (AP), SE 4753).

5.4.3.3 Category C sites

A total of 117 Category C sites were recorded for AREA III. Most of these (76) actually lie within the 1km study corridor, although only 15 were crossed by the proposed pipeline route (Aug 96). All but two of these have been largely avoided (Re-routes 6-13).

The two sites directly crossed by the proposed route are a rectangular soilmark (MAP 13: 6303 (AP), SE 4360) and the eastern part of an enclosure (MAP 14; 6213 (AP), SE 4356).

Of the 13 sites largely avoided by re-routes, it was not possible to completely avoid all components of seven of them, though in all of these cases the proposed route was moved away from the most significant portion:

- The western extreme of a possible enclosure is likely to be crossed by the proposed pipeline easement (MAP 10: 8326/DBA.DM (AP), SE 3775).

- An enclosure was avoided but the possible ditches associated with it are crossed by the proposed route (MAP 12: 6322 (AP), SE 4363).

- A trackway was avoided but the ditches related to it are just clipped by the proposed pipeline (MAP 13: 6317 (AP), SE 4362).

- The north-east extreme part of a group of small enclosures is crossed by the proposed pipeline (MAP 14: 6210 (AP), SE 4355).

- A group of enclosures have been avoided, though the probable recent field boundaries present within the same area are crossed by the proposed route (MAP 14/15: AP.31/.11, SE 4752).

- The proposed pipeline route passes directly between a droveway and an enclosure; it is possible that the pipeline easement would clip the edges of each (MAP 14: 6206 (AP), SE 4455).

- A group of possible ring ditches have been avoided, but the linear ditches are directly affected by the proposed route (MAP 14/15: 6073/6073.01 (AP), SE 4751).

At least 36 other Category C sites lie particularly close to the proposed pipeline route. These are summarized below:

- Enclosures situated *c.*120m west of the proposed route (MAP 9: 8401 (AP), SE 3782).

- Four sites lying east of Skipton-on-Swale village, three with enclosures, the fourth possibly representing a rectangular structure, and all within 30m-130m of the proposed route (MAP 10: 8402, 8314, DBA.BK and 8316 (all AP), SE 3780, 3779 and 3879).

- A rectilinear enclosure with an associated possible ring ditch lying less than 30m from the proposed route of the pipeline (MAP 10: AP.27, SE 3776).

- Two sites situated north-east of Rainton village, one a rectilinear enclosure and possible trackway (150m from the proposed route), the other a possible enclosure (less than 50m from the proposed route) (MAP 10: AP.42/DBA.BN and 8325, SE 3775).

- A possible ring ditch lying within 20m of the proposed pipeline route (MAPS 10/11: 8170 (AP), SE 3774).

- A site with enclosures and ditches was avoided by Re-route 7, but still lies only 50m from the proposed route (MAP 11: 8143 (AP), SE 3874).

- The proposed pipeline passes between a rectilinear enclosure known as 'Pasture Hill' and a site with probable enclosures and ditches, avoiding each by less than 50m (MAP 11: 8134 and DBA.BP (APs), SE 3972).

- A possible enclosure lying less than 30m from the proposed pipeline route (MAP 11: 8136 (AP) SE 3971).

- A single enclosure lying 80m east of the proposed route (MAP 11: 6395 (AP), SE 4069).

- An enclosure and a trackway site situated less than 50m from the proposed route (MAP 12: 6404 and 6411 (APs), SE 4168 and 4167).

- Possible Medieval fishponds only 20m from the proposed route (MAP 12; 6405 (AP), SE 4167)

- 100m west of the proposed route lies a probable enclosure site (MAP 12: DBA.BS (AP), SE 4166).

- A possible enclosure with associated ditches, lying 160m from the proposed route (MAP 12: 6410 (AP), SE 4165).

- A square enclosure and a possible ring ditch situated 150m and 50m respectively from the proposed pipeline (MAP 12: 6323 and 6324 (AP), SE 4264).

- The proposed route passes through an area with a number of enclosure, trackway and possible ring ditch sites, running especially close (50m or less) to five of these (MAP 13: 6313/DBA.BT, SE 4362; AP.59, SE 4361; 6311, SE 4361; 6306, SE 4360 and 6304, SE 4360 (all AP)).

- The possible enclosure site avoided by Re-route 11 remains less than 20m from the proposed route (MAP 13: 6221 (AP), SE 4358).

- An enclosure site lying 50m east of the proposed pipeline route (MAP 13: 6218 (AP), SE 4357).

- The proposed route runs between a number of enclosure sites lying north and north-west of Cattal village, passing within 100m and 200m of four of them (MAP 14: 6217 and 2616, SE 4356; 6207, SE 4455; AP.22, SE 4454 (all AP)).

- A series of cropmarks though to represent medieval fields and a holloway lie 50m west of the proposed pipeline route (MAPS 14/15: 6051.02 (AP), SE 4654).

- A site with rectilinear enclosures lies 180m west of the proposed pipeline route (MAPS 14/15: 6080 (AP), SE 4752).

- A possible enclosure (and a probable recent drainage pipe) lie 100m west of the proposed route (MAPS 14/15: AP.45, SE 4752).

- The possible enclosure and field system avoided by Re-route 13 remains 70m east of the proposed pipeline route, although the possible enclosure itself doe lie over 500m further east.

5.4.3.4 Category D sites

Of the 122 Category D sites in this area, only six are crossed by the proposed pipeline route. These consist of: a group of recent field boundaries (MAP 9: 8401 (AP), SE 3782), a possible enclosure or ditch (MAP 10: DBA.BJ (AP), SE 3880), a 'clay spread' located during the construction of the Yafforth to Towton gas pipeline in 1979 (MAP 10: YT.25, SE 3879), an area of ridge and furrow (MAP 13: YT.50, SE 4358), a possible ditch or recent agricultural mark (MAP 13: 6219 (AP), SE 4358), and a group of possible medieval lynchets (MAP 15: 6081 (AP), SE 4750).

There are also 11 references to ridge and furrow which do not have PRN numbers. The proposed pipeline route passes close to one particular area of this (MAP 10: SE 3777).

5.4.3.5 Category E sites

Thirty-two findspots are recorded for this area. The majority of these are prehistoric in date, largely Neolithic (stone) or Bronze Age (bronze) axes. An isolated Bronze Age hoard is known from Bilton Moor (MAP 14: 6052, SE 4751), whilst the only slight concentration of finds is that of four separate finds of Bronze Age axes north-east of Rainton village (MAP 10: 8297, 8301, 8302 and 82880.01, SE 3775).

5.4.3.6 Potential for further sites

Two particular areas within the 1km study corridor have been identified. One is that lying adjacent (to the east) of the Roman town of Aldborough, for which the potential for further sites has already been stated (see above, 5.4.3.1). The other is that situated to the west of Marston Moor, the site of the famous civil war battle which took place on 2nd July 1644 (MAP 15, SE 4852). Although the proposed pipeline route is 1km from the actual battle site, the locality is likely to have seen intense activity at this time, increasing the likelihood of other early post-medieval remains existing in the close vicinity of the proposed pipeline.

5.4.4 AREA IV: Bilton-in-Ainsty (MAP 15, SE 4850) to Bolton Percy (MAP 17, SE 5242)

5.4.4.1 Category A sites

One Scheduled Ancient Monument (SAM) is present within AREA IV. This is the site of Streeton Deserted Medieval Village and moated manor house (MAP 16: 5386/SAM.457, SE 5344). The site lies just outside the 1km study corridor, with associated (Category B) earthworks actually extending into the corridor to within 500m of the proposed pipeline route (AP.1, SE 5343). The possibility exists for other related features to lie closer still to the proposed route.

5.4.4.2 Category B sites

Twenty-one sites of this category are present within AREA IV. Many of them relate to the Medieval period (deserted villages, moats, manors, churches or chapels), with most of the others being post-medieval standing buildings within modern villages. Eight of the sites lie within the 1km study corridor, and only one, the line of a Roman road, is crossed by the proposed pipeline (MAP 16: 5421/5473, SE 5145).

Four of the sites within the 1km corridor do, however, lie quite close to the proposed route. One is a rectangular feature, possibly a former building, recognised from aerial photography and situated less than 30m from the proposed pipeline (MAP 15: DBA.BW (AP), SE 4849). A second is the earthwork remains of a medieval moated settlement, lying less than 150m to the west of the proposed route (MAP 16: 5479, SE 5146), whilst a third, Catton village medieval earthworks and moat, lie as little as 100m from the proposed route (MAP 16: AP.8 and 5475, SE 5145). With all three of these sites, there may exist associated features.

The fourth site is another medieval moat and manor house. This is only recorded to within 1km square SE 5145 (MAP 16: NAR.14), so could therefore be situated in the direct path of the proposed pipeline.

5.4.4.3 Category C sites

Eight Category C sites are recorded for AREA IV. Only two of these lie within the 1km study corridor, neither of which are crossed by the proposed pipeline route. One of these, a possible DMV, is situated *c.*250m from the proposed route (MAP 16: 5487, SE 5147). There is no record of the sites' extent, so it remains possible that it extends west towards the proposed pipeline.

5.4.4.4 Category D sites

Twelve sites of this category are recorded for AREA IV. Two of these are crossed by the proposed pipeline route, both of them areas of probable recent field boundaries (MAP 15: AP.30 and AP.4/.29, SE 4949 and 4948).

5.4.4.5 Category E sites

Eight Category E sites/findspots are known for this area. One of these is a modern oval feature seen on aerial photographs (commissioned in 1996 by British Gas for the present pipeline project) to be a recently abandoned racing track (MAP 16: AP.38, SE 4850). The other seven are individual findspots, forming no concentrations, and including three Bronze Age axes.

5.4.5 AREA V: Bolton Percy (MAP 17, SE 5242) to Hambleton (MAP 19, SE 5430)

5.4.5.1 Category A sites

One Scheduled Ancient Monument (SAM) lie within this area. This is a medieval moat lying 650m east of the proposed pipeline route (MAP 17: 9686/SAM.20517, SE 5437).

5.4.5.2 Category B sites

Forty-three such sites lie within the 3km study corridor in this area. Thirteen of these are within the 1km study corridor, only one of which was crossed by the proposed pipeline route (Aug 96). This is the site of a rectangular feature discovered from aerial photography, possibly representing a former building (MAP 17: DBA.BZ (AP), SE 5438). The proposed pipeline route (Aug 96) was modified (Re-route 14) to avoid it.

Nine other Category B sites lie sufficiently close to the proposed pipeline route to be of concern:

- Three separate medieval sites (a moat and two probable granges) lie less than 200m from the proposed route (MAP 17: NAR.8, 9676 and 9683, SE 5339, 5438 and 5337).

- Manor Garth (Rest Park), the site of a (now destroyed) fortified manor house and associated medieval and post-medieval settlement complex, has been largely avoided (Re-route 15) (MAP 18: 9447, 9447.05, 9448, 9455 and 9455.02, SE 5433 and 5434). Nevertheless, the proposed pipeline still runs close to the site of the moat itself and the adjacent medieval Deer Park (NAR.8), and cuts the eastern parts of some surrounding field boundaries (9450). The proposed route also passes through the Medieval Park as it skirts the eastern edge of the complex. There is clear potential for additional features relating to the site to exist further east towards Bishop's Wood.

- A rectangular enclosure with internal divisions (quite possibly representing a settlement with internal buildings) lies *c.*400m east of the proposed route, although the western known extent of a probable ditch running west from this complex does lie only 20m from the proposed route (MAP 18: 9493 (AP), SE 5431).

5.4.5.3 Category C sites

Forty-seven Category C sites are present within AREA V. Twenty of these lie within the 1km study corridor, of which three were crossed by the proposed route (Aug 96). One of these, a site comprising possible enclosures and ditches (MAP 18: DBA.CB (AP), SE 5334) has been avoided (Re-route 15), although the proposed pipeline still touches the easternmost extent of this site. A second is a possible trackway and a series of recent field boundaries lying west of Manor Garth moated site (MAP 18: 9449 (AP), SE 5333); this too has been avoided (Re-route 15). The other site crossed by the proposed route (Aug 96) is a canal running east-west to the north of Manor Garth and potentially medieval in date (MAP 18: 9471.01/NAR.7, SE 5333 and 5434). This 'site' was unavoidable.

As a consequence of Re-route 15, two Category C sites previously not affected by the proposed pipeline route are now crossed by it. One is a group of field boundaries lying east of Manor Garth moated site and possibly related to it (MAP 18: 9450, SE 5433). The other is the site of a possible moat and some recent drainage ditches (MAP 18: 9464, SE 5432). With the latter, the choice of proposed route was also affected by a specific engineering constraint, although it did prove possible to avoid the feature thought to represent the moat itself.

Six other Category C sites lie particularly close to the proposed pipeline route. These are:

- Possible enclosures and ditches situated just over 100m from the proposed route (MAP 17: DBA.BX (AP), SE 5341).

- A possible enclosure lying *c.*60m east of the proposed route (MAP 17: 9687 (AP), SE 5437).

- A possible trackway located less than 100m west of the proposed route (MAP 17: DBA.CA (AP), SE 5337).

- An area of semi-ancient woodland *c.*50m of the proposed route (MAP 17: 9684, SE 5337).

- Possible enclosures lying *c.*130m from the proposed route (MAP 18: 9454 (AP), SE 5434).

- A probable prehistoric enclosure lying less than 30m from the proposed route (MAP 18: 9451 (AP), SE 5433).

5.4.5.4 Category D sites

Twenty-seven Category D sites are present in this area. The proposed route passes through only one of them, a linear feature probably representing a recent pipeline (MAPS 18/19: AP.50/.55,

SE 5330). A single reference to ridge and furrow without a PRN number is not included in this total; the proposed pipeline route also passes directly through this site (MAP 18: SE 5434).

5.4.5.5 Category E sites
Eighteen findspots are recorded for AREA V, most of which are medieval pot sherds, none of which form any concentrations. The most significant are an Anglo-Saxon coin hoard (MAP 17: 5391, SE 5241), and a medieval coin hoard (MAP 17: NAR.7, SE 5239).

5.4.5.6 Potential for further sites
Attention is drawn to two particular areas. One concerns the area to the east of Manor Garth moated site. Here, there is clear potential for additional features relating to the site to exist further east towards Bishop's Wood, that is, in the area now traversed by the proposed pipeline route (see 5.4.5.2 for more details). The other lies to the south of Manor Garth and is an area with a noticeable cluster of enclosures, field systems and associated trackways, at least one of which probably represents a former settlement (MAP 18: centred approximately on SE 530320). Although the proposed pipeline route skirts the western edge of this cluster, it is quite possible that additional sites exist further west.

5.4.6 AREA VI: Hambleton (MAP 19, SE 5430) to Carlton (MAP 21, SE 6923)

5.4.6.1 Category A sites
One Scheduled Ancient Monument (SAM) lies within this area. It is the site of a medieval moated enclosure, and is just outside the 3km study corridor (MAP 21: 9369.04/SAM.685, SE6725).

5.4.6.2 Category B sites
Thirty-one Category B sites are recorded for this area, 11 of which are within the 1km study corridor, only one of which was crossed by the proposed route (Aug 96). This is a complex of enclosures with an associated field system (MAP 19: DBA.CJ (AP), SE 5529). It has now been avoided (Re-route 16), although the proposed pipeline still passes within 50m of it.

Six other Category B sites lie sufficiently close to the proposed pipeline route to be of concern:

- A group of ring ditches and enclosures (and recent field boundaries), the north-eastern extent of which lies less than 10m from the proposed pipeline route (MAP 19: 9289 (AP), SE 5429).

- A possible Iron Age settlement and an adjacent group of enclosures with associated field system, lying respectively 400m and 200m north of the proposed route (MAP 19: 9329 and DBA.BK (AP), SE 5728).

- An enclosure with associated field system and at least two pit alignments, situated 150m north of the proposed pipeline route (MAP 20: DBA.CO (AP), SE 6325).

- A series of enclosures and pits with an associated field system, possibly representing a former settlement and lying less than 30m south of the proposed pipeline route (MAP 21: DBA.CT (AP), SE 6425).

- The site of a medieval moat and abbey, situated less than 100m to the north of the proposed pipeline route (MAP 21: 9372 (AP), SE 6525).

5.4.6.3 Category C sites

Sixteen sites in this category are recorded for AREA VI. Nine of these fall within the 1km study corridor, of which one was crossed by the proposed pipeline (Aug 96). This is the site of a possible field system (MAP 20: DBA.CR (AP), SE 6325).
Two other Category C sites are within close proximity of the proposed pipeline:

- A possible ring ditch lying less than 50m from the proposed route (MAP 19: DBA.CI (AP), SE 5429).

- A possible ring ditch situated 100m north of the proposed pipeline route (MAP 20: DBA.CN (AP), SE 6225).

5.4.6.4 Category D sites

Twenty-one Category D sites are recorded for this area. Three are crossed by the proposed pipeline route. They consist of probable recent drainage ditches (MAP 20: DBA.CM (AP), SE 6027) and two areas of recent field boundaries (MAP 20: DBA.CP (AP), SE 6325; MAP 21: DBA.CU (AP), SE 6425).

5.4.6.5 Category E sites

Nine Category E sites were recorded for AREA VI. Most of these are finds of either prehistoric flint or medieval/Roman pottery. No concentrations are evident.

5.4.6.6 Potential for further sites

That part of the 3km study area between Carlton village and the border with the East Riding of Yorkshire Unitary Authority is virtually devoid of sites (MAP 21). Rather than indicating a real paucity of archaeological remains here, this lack of sites is probably due to the particularly low-lying and historically flood-prone nature of the area, lying as it does within the wetland zone known as the Humber Wetlands (see 4.2.5). The detection of archaeological sites in this zone is greatly hindered by the masking effects of alluvium. One should therefore regard this part of the proposed pipeline route within North Yorkshire as having clear archaeological potential, as is the case with that stretch of the pipeline which continues across the Humber Wetlands into Lincolnshire (see 5.6.6).

5.5 EAST RIDING OF YORKSHIRE UNITARY AUTHORITY (MAPS 21-24)

5.5.1 Category A Sites
No scheduled sites were recorded for this area.

5.5.2 Category B Sites
Nine Category B sites exist in the 3km data collection area, of these, four are crossed by the proposed route. Three of these are unavoidable Post-Medieval linear features: The Aire and Calder Navigation (Knottingley and Goole Canal), The Dutch River (MAP 21/22: 9486 & 9490, SE 6920) and a railway line (MAP 22: 8822, SE 7220).

The fourth is a cropmark site consisting of nine possible ring ditches. (MAP 24: 17459/DBA.DF (AP), SE 7716). Another group of four probable ring ditches lies less than a kilometre to the north (MAP 34: DBA.DD (AP), SE 7718) and *c.*300m from the proposed pipeline route.

The proposed pipeline passes close to two other sites: one is a cropmark site consisting of probable ring ditches and a square enclosure (500m north of the proposed route) (MAP 22: DBA.CY (AP), SE 7320). The other is the medieval and modern village of Rawcliffe which lies 350m away (MAP 21: 9662, SE 6823).

5.5.3 Category C Sites
The 3km data-collection area contains five Category C sites, one of which is crossed by the proposed route. This was identified from aerial photography, and is a series of undated ditches. (MAP 23: DBA.DB (AP), SE 7618).

Three other potentially significant sites close to the proposed route are: a possible square barrow lying *c.*1400m to the west of the proposed route (MAP 21: DBA.CV (AP), SE 6721), and two undated rectilinear enclosures situated respectively 220m and 500m south of the proposed pipeline (MAP 22: DBA.CW (AP), SE 6920; MAP 22: DBA.CX (AP), SE 6920).

5.5.4 Category D Sites
Four of these sites lie within the 3km data-collection area; three are crossed by the proposed pipeline route:

- a possible pipeline and related features (MAP 22: 11047 (AP), SE 7219)
- a possible ditch (MAP 23: DBA.CZ (AP), SE 7518)
- a possible ditch (MAP 23: DBA.DA (AP), SE 7618)

5.5.5 Category E Sites
No Category E sites have been recorded for this area; this may reflect the masking effects of peat and alluvium which is present over much of the Authority.

5.5.6 Potential for further sites
This is discussed with North Lincolnshire (5.6.6).

5.6 NORTH LINCOLNSHIRE UNITARY AUTHORITY (MAPS 23-28)

5.6.1 Category A Sites

There is one scheduled site in the 3km data-collection area; this is a Post-Medieval lock (MAP 25: 4710/SAM.212, TF SE 8311), and lies 1400m west of the proposed pipeline route.

5.6.2 Category B Sites

Forty-one Category B sites are present in the 3km data-collection area, two of which lie within the 1km study area; the proposed pipeline route does not cross any of these, except for an existing railway (MAP 25: 8828, SE 8410).

The proposed pipeline route passes through an area of archaeological sensitivity close to its border with Lincolnshire (MAP 28) (see 5.7.1.3). It passes some 1250m to the south-west of a probable prehistoric or Romano-British site (MAP 28: NAR.48 (AP), SK 9199), 700m to the south-west of a probable enclosure and hut circle complex (MAP 28: NAR.37 (AP), SK 9297), some 1400m south-west of a round barrow site (MAP 28: 696 (AP), SK 9298), around 1800m from another round barrow (MAP 28, RCHME.8 (AP), SK 9397) and 1700m from a probable Romano-British villa complex (MAP 28, 6531 (AP), SK 9396). In addition, a number of similar sites in adjacent Lincolnshire lie to the west and south of the proposed pipeline (*eg.* a prehistoric pit alignment (NAR.45), a round barrow (NAR.44), a Bronze Age barrow cemetery (50450), a possibly prehistoric multi-ditch linear boundary (50325), a round barrow (NAR.32) and a second barrow cemetery (50437)). Considered as a single landscape, this area has considerable archaeological importance; it is likely that further features would be disturbed along the proposed pipeline route.

5.6.3 Category C Sites

Five Category C sites lie within the 3km data-collection study area, of these, none are cut by the proposed pipeline route.

The proposed route passes some 120m to the west of an undetermined enclosure and ditch site (MAP 24: DBA.DG (AP), SE 7914) and some 500m to the south of a probable trackway or drainage system (MAP 24: 15422 (AP), SE 8114). Due to their close proximity, both of these features may well continue into the path of the proposed pipeline.

An undated enclosure and pit lies 1300m east of the proposed route (MAP 28: 18375 (AP), SK 9199), whilst a possible prehistoric barrow or Romano-British enclosure lies some 900m to its east (MAP 28: 9881 (AP), SK 9296).

5.6.4 Category D sites

Thirty-one of these sites lie within the data-collection area, of which nine are cut by the proposed pipeline route:

- recent drains or a road (MAP 23/24: DBA.DC (AP), SE 7517)
- the former course of The River Don (MAP 24: 9488, SE 7914)
- probable recent drainage ditches and/or ridge & furrow (MAP 24: 15424 (AP), SE 7914)
- recent drains, a track or road (MAP 26, DBA.DH (AP), SE 8407)

- a probable recent drainage channel MAP 26: DBA.DI (AP), SE 8407)
- a recent drainage channel and a possibly recent feature (MAP 28: DBA.DJ/DK (AP), SE 8406)
- a recent drainage system (MAP 26: 1603/DBA.DL (AP), SE 8404)
- a post-medieval warping system (MAP 26: RCHME.1 (AP), SE 8403)
- undated ditches (MAP 28: NAR.35 (AP), SK 9296)

5.6.5 Category E Sites

Twenty-two of this category of site have been recorded within the 3km data-collection area. This includes scatters of prehistoric, Romano-British, Medieval and Post-Medieval material. It is interesting to note the relatively high number of Bronze Age artefacts, especially around the River Trent area, since it is not uncommon in this period to find artefacts deposited close to such wet areas.

5.6.6 Potential for further sites

In both this Unitary Authority, and that of the East Riding of Yorkshire (together formerly Humberside), no specific areas are identified. Instead, the region as a whole is regarded as having significant archaeological potential due to the particular nature of the wetland zone, The Humber Wetlands, which exists here. As has already been stated (4.2.5 and 5.4.6.6), the detection of archaeological sites in the Wetlands is greatly hindered by the masking effects of alluvium and peat, so one must not underestimate the potential for archaeological remains to exist along the proposed pipeline route, even though at present there appear to be few.

5.7 LINCOLNSHIRE (Maps 27-47)

In view of the 123km length of proposed pipeline which passes through Lincolnshire, description has been divided into four manageable areas, based approximately upon site density. The first area, from the border with North Lincolnshire Unitary Authority, stretches to the fen margins, just to the south-east of Lincoln. The remaining three are all within the Fenland zone.

5.7.1 AREA I : Scotter Parish (MAP 27, SE 8502) to Fiskerton Fen (MAP 33, TF 0873)

5.7.1.1 Category A Sites

Nine Scheduled Ancient Monuments (SAMs), lie within and very close to the 3km data-collection area, though none lie within the 1km study corridor. Seven of the nine lie on the outer edge of the 3km area: four belong to the Medieval period (a moated site, a Knights Templar site, a Priory and a Churchyard), two are prehistoric (both Bronze Age Cemeteries), and one called the 'Brokenback Mound'.

Three SAMs, two dating to the Medieval period and one to the Bronze Age, lie within the 3km data-collection area. The medieval sites are a Medieval Cross Shaft in Stainton Langworth (MAP 33: SAM.22678, TF 0677) which lies about 1km from the proposed route, whilst the other is Barlings Priory (MAP 33: SAM.85, TF 1076), which lies some 700m from the proposed pipeline.

The Bronze Age barrow cemetery, known as The Barlings and Stainfield Complex (MAP 33: SAM.20809, TF 0973), lies to the south-east of the priory, though another part of the same cemetery (also scheduled) lies 200m to its west (MAP 33: SAM.21472, TF 0973). Some of the barrows exist as earthworks, and many of them are partially covered by peat and alluvium, suggesting that there may well be more barrows at present hidden beneath these deposits. The area which would be disturbed by the proposed pipeline may therefore have once formed part of an important Prehistoric landscape.

Barlings Priory is an important Medieval site which lies some 700m to the east of the proposed pipeline route. The latter does not encroach onto this site, but there are several cropmark sites (discussed later in the text) to which it could relate (MAP 33: SAM.103, TF 0873).

5.7.1.2 Category B Sites

One hundred and thirty-eight Category B sites lie within the 3km data-collection area. Thirty-nine of these lie within the 1km study corridor, of which two were cut by the proposed pipeline route (Aug 96). Both of these have been avoided by route modifications (see below).

Several sites lie close to the proposed route. One of these is a Medieval fishpond (MAP 27: 50053, SE 8601) which lies some 300m from the proposed pipeline. It seems unlikely that this feature would exist in isolation, so it may well form part of a more extensive Medieval landscape, potentially affected by the proposed pipeline.

The proposed route (Aug 96) was modified (Re-route 17), to avoid cutting a probable Prehistoric triple-ditched boundary cropmark site (MAP 27: NAR.35 (AP), SE 8700). The proposed pipeline now lies some 200m away, but this part of the route still holds archaeological potential since the cropmark may well extend further west, and other related features may exist closer to the proposed easement. A second possible triple-ditched feature exists only 20m from the proposed pipeline, so is even more likely to be crossed by the proposed route (MAP 27: NAR.28 (AP), SK 2899).

A cropmark site of a probable Prehistoric pit alignment (MAP 28: NAR.45 (AP), SK 9098) lies some 110m from the proposed pipeline route and could well continue across the path of the latter. Some 600m to the south of this feature, and 160m from the proposed pipeline, lies a probable barrow (MAP 28: NAR.44 (AP), SK 9098), whilst a similar 'barrow like' cropmark exists some 200m from the proposed route. When one also considers the close proximity of two probable barrow cemeteries some 150m and 270m to the south of the proposed pipeline route (MAP 29: 50437 (AP), SK 9395; MAP 23: RCHME.10 (AP), SK 9394), one must regard this area as having significant potential for the further archaeological sites.

Re-route 18 was achieved in order to move further away from the probable Iron Age or Romano-British settlement site north-east of Blyborough Grange (MAP 29: 50817/50818 (AP), SK 9694), identified from aerial photographs and fieldwalking. It is possible that this site represents settlement alongside Ermine Street Roman Road which lies less than 200m to the east of the known extent of the site. The proposed route crosses Ermine Street itself at SK 96439373 (MAP 29: 50574).

The proposed pipeline lies some 400m from a probable Deserted Medieval Village, identified through aerial photography (MAP 30: 50836 (AP), SK 9991), it may be that the proposed route passes through the periphery of this settlement and/or its associated field systems.

Features associated with a World War II searchlight battery post (located 300m from the proposed pipeline route) could exist in the direct path of the pipeline (MAP 30: NAR.43, TF 0090).

The proposed pipeline route passes between 200m and 1km of the Shrunken Medieval Villages of Toft next Newton (MAP 31: 50514/53416, TF 0488), Newton by Toft (MAP 31: 53418, TF 0587), Faldingworth (MAP 31: 53398/53399, TF 0684), Stainton by Langworth (MAP 33: 53174/53175, TF 0677), Newball (MAP 33: 53048/53049, TF 0776) and Barlings (MAP 33: NAR 16, TF 0774). The proposed route appears to have avoided the main concentration of these settlement areas, but there is clear potential for the existence of associated field systems; a number of areas of Category D ridge and furrow are recorded in the area.

The proposed pipeline crosses through a supposed Roman Road (51456) (MAP 31: TF 05048504). Investigations during field survey will hopefully determine whether or not the road is authentic.

A Romano-British coffin was found some 200m from the proposed route (MAP 32: 53168, TF 0678). It is unlikely that such an object would lay in isolation, so the area should be viewed as having potential for the discovery of related items/features.

The proposed pipeline was re-routed (Re-route 21) to avoid a probable Iron Age/Romano-British settlement site (MAP 33: 53040 (AP), TF 5275). Nevertheless, the adjacent area is still of high archaeological potential since the known extent of the site does not necessarily represent its real limits. The surrounding area appears to be fairly rich in prehistoric settlement evidence, as witness a similar site lying some 950m to the north-west of the proposed pipeline route (MAP 33: 53036 (AP), TF 0675).

A site identified through aerial photography and probably representing a medieval abbey or grange with moat and other associated features, lies only 50m from the proposed pipeline route (MAP 33: 53010 (AP), TF 0774). Although the route does not pass through any identified features, the site could easily extend to be crossed by the pipeline.

The proposed route within 550m of Barlings Priory. The priory itself is actually scheduled (MAP 33: SAM 103, TF 0873), but surrounding (non-scheduled) earthworks have been placed into Category B. Nearby field systems (Category C- see below) may be related.

The proposed pipeline passes close to the courses of two supposed Roman Roads, one either side of the proposed route, and both stopping short of it by 170-270m (MAP 33: 5058 and 51242, TF 0777). It is possible that they form part of the same supposed road, and that the exact location has been confused. Alternatively, there may have been two different stretches of road in close proximity. Irrespective of this uncertainty, if one or both of the purported roads continues (west or east respectively), then the proposed pipeline will be crossing at least one Roman highway.

To the south of the supposed Roman roads lies the Shrunken Medieval and Post-Medieval settlement of Newball (MAP 33: 53048/53049, TF 0776)). It lies some 450m from the proposed

pipeline route, so it is possible that some of the settlement itself, or its related field systems, may be disturbed by the proposed pipeline.

5.7.1.3 Category C Sites

Seventy-six Category C sites were identified within the 3km data-collection area, 26 of these lying within the 1km study corridor. Of these, nine were crossed by the proposed route (Aug 96), although two of these have been avoided completely and with six others the proposed route was modified to move away from the densest archaeological potential.

A cropmark site with features identified as possible ring ditches (MAP 33: SE 53176 (AP), TF 0777) was recommended to be avoided but environmental and engineering constraints prevented route modification. A category C site comprising Romano-British settlement debris (MAP 33: 50501) lies some 200m from these features.

A possible Medieval archery practice area was largely avoided (Re-route 17), but it is likely that the proposed construction easement will just disturb its south-west corner (MAP 27: 50074, SE 8700). The same re-route (17), avoided the densest portion of the site of a probable enclosure and associated ditches (MAP 27: NAR.34 (AP), SE 8800).

The proposed pipeline route also clips a probable trackway (MAP 27: NAR.32 (AP), SK 8999). It may be that this site relates to another lying some 300m to the north-west, where Anglo-Saxon material has been recovered (MAP 27: 51277/51278, SK 8999), to a concentration of multi-period material and possible enclosures situated to the north-east (MAP 28: 50760-5, SK 1899) and/or to another probable trackway (MAP 28: 50307 (AP), SK 8999). Further evidence of Romano-British activity comes from a nearby pottery scatter (MAP 27: 51276, SK 8999), whilst a further cropmark feature, a possible enclosure and ditch system, lies some 250m to the north-west (MAP 27: RCHME.4, SK 8999).

A linear cropmark with possible associated enclosures (MAP 30: 50324 (AP), SK 9992) was largely avoided (Re-route 19).

A soilmark consisting of four circular features (possibly enclosures or ring ditches) was largely avoided to avoid the majority of these features (Re-route), but the proposed route still clips one of the features. (MAP 31: DBA.DM (AP), TF 0585)..

The proposed pipeline route clips a group of possible Medieval enclosures and field boundaries (MAP 33: RCHME.40 (AP), TF 0873). It does, however, avoid the densest of these marks and only passes through one identified linear feature. A cropmark of a probable trackway (MAP 33: 53051 (AP), TF 0873) lies 150m to the north of this site, whilst probable enclosures and ditches lie 200m to its south-west (MAP 33: 53017 (AP), TF 0873). They all lie in close proximity to the scheduled Barlings Priory, so they may well be associated with it.

Several Category C sites lay close to the proposed route. Several barrow sites and enclosure systems are recorded for the area near to the border with North Lincolnshire. A potential focus of prehistoric activity (MAPs 28 and 29) has been discussed earlier (5.6.2). Re-route 18 has completely avoided a probable trackway (MAP 29: 50326 (AP), SK 9693) but this feature may still extend south towards the proposed pipeline route. The earthwork of a possible barrow (MAP 29: 50473, SK 9693) was completely avoided (Re-route 18).

A fairly dense area of cropmarks exists to the east of the village of Bishop Norton (MAP 30). As mentioned earlier, the line was re-routed here to avoid a probable linear feature and a number of enclosures (MAP 30: 50324 (AP), SK 9992). Several other probable enclosure sites exist in the vicinity, all within 500m of the proposed pipeline: probable enclosures and a possible building (MAP 30: 50858 (AP), SK 9892), an enclosure (MAP 30: NAR.48 (AP), TF 0092), a probable rectilinear enclosure described as a possible temple (MAP 30: 50862 (AP), TF 0092) and a probable enclosure (MAP 30: NAR.43 (AP), TF 0091). Although the above are largely undated, they are most often associated with Iron Age or Romano-British activity; it is therefore of note that two more reliably-dated sites, both probably large and complex settlements and one possibly relating a Romano-British villa complex (MAP 30: 50863, TF 0192), each lie less than 1km away from the proposed pipeline route.

Romano-British debris (MAP 30: 51030, TF 0191) has been recovered from an area 100m from the proposed route (Aug 96); route modification (Re-route) moved the proposed route 250m away from this area.

A probable Medieval or Post-Medieval trackway running north-west to south-east (MAP 33: NAR.29, TF 0776) lies some 350m to the west of the proposed pipeline route; it may well extend towards the proposed route.

Another sensitive area is the point where the proposed line passes some 70m from a possible prehistoric barrow site (53073 MAP 33: TF 0775).

5.7.1.4 Category D Sites

Eighty-two Category D sites are found within the 3km data-collection area, of which three lie in the direct path of the proposed pipeline:

- possible recent drainage ditches (MAP 27: RCHME.2)AP), SE 8502)
- 2 areas of ridge and furrow (MAP 31: 53407, TF 0585; MAP 33: RCHME.38, TF 0874)

The proposed route passes through several areas of Medieval field-systems; there is also potential for the proposed route to pass through other such systems where the it passes close to Shrunken or Deserted Medieval settlements (Category B sites). At present, these field-systems have been assigned a D category since significant archaeological potential has yet to be demonstrated; this may change after field survey has been carried out.

5.7.1.5 Category E sites

One hundred and thirteen category E sites were recorded. A high percentage of these area prehistoric material, in particular axes. One notable concentration comprises a prehistoric axe, four prehistoric artefacts, and a Neolithic axe, all found within a kilometre of each other (MAP 27: SE 860015). Another comprises a Bronze Age axe, seven prehistoric artefacts and in particular, two Neolithic and one Palaeolithic axe, all of these found within 2km of each other (MAP 33: TF 065755). Even though these artefacts are from different periods, there generally appears to be a predominance of prehistoric finds, suggesting that this landscape may have been important, and was indeed utilised, throughout prehistoric times.

A fairly high percentage of the recorded artefacts are Romano-British or Medieval. Romano-British pottery and artefacts have been recovered from the possible villa cropmark site (MAP 30: TF 0191), whilst the Medieval finds in particular concentrate around the Shrunken and Deserted settlements.

5.7.2 AREA II : Fiskerton Fen (MAP 33, TF 0873) to Ewerby Fen (MAP 38, TF 1448)

5.7.2.1 Category A Sites

Eleven SAMs lie close to and within the 3km data-collection area. Of the six that lie on the edge of this area, three are from the Medieval period (a Tower, a Priory site and a stone cross) and three are scheduled stretches of Car Dyke, the substantial canal thought to be Romano-British).

Five of the scheduled sites lie within the 3km data-collection area, though none of these are within the 1km study corridor. One is Nocton Priory which lies some 800m from the proposed pipeline (MAP 35: SAM.238, TF 0764). A second lies to the south-east of the priory, some 1200m from the proposed pipeline lies a fourth scheduled part of Car Dyke in Nocton Wood (MAP 35: SAM.312, TF 0863). The exact function of this monument is uncertain: its primary use appears to have been that of a canal, yet it has been suggested (*eg.* Simmons, 1975), that for much of its course it was not navigable, so may also have had a drainage function. The activity likely to have been associated with this earthwork means there is greater potential for the existence of archaeological remains either side of its course. The proposed route runs close to Car Dyke from MAPS 34 to 39, and crosses it twice (see below).

A scheduled Medieval cross in the village of Metheringham lies 1500m from the proposed pipeline route (MAP 35: SAM.94, TF 0661).

Two scheduled sites, one from the Medieval period, the other Neolithic, lie within the 3km data-collection area. One is the Medieval Gilbertine Abbey on Walcott Commons (MAP 37: SAM.251, TF 1155), which lies some 1200m from the proposed pipeline. That from the Neolithic period lies about 950m from the proposed line (MAP 37: SAM.27900, TF 1155), and is a Long Barrow burial site. The area around this burial was clearly regarded as special during this period, as a Bronze Age barrow cemetery exists around the Long Barrow (MAP 37: 60312, TF 1155). Further, there is evidence that the cemetery either extends, or that a separate one exists some 100m to the west (MAP 37: 60313, TF 1255). There is considerable potential for as yet unrecorded archaeological sites to exist close to, or in the direct path of, the proposed pipeline.

5.7.2.2 Category B Sites

Forty-four Category B sites were recorded for the 3km data-collection area, eleven of these lying within the 1km study corridor. Three were crossed by the proposed pipeline (Aug 96), one of which is the course of a Roman Road, the other two have been avoided.

The known extent of an extensive Bronze Age barrow complex, possibly a continuation of the Barlings and Stainfield cemetery site which lies to the north on the other side of the River Witham, exists only 140m from the proposed pipeline route (MAP 34: NAR.29, RCHME.42,

NAR.53, TF 0570/0670). Prior to route modification (Re-route 22), the proposed pipeline (Aug 96) passed through the eastern part of this complex. Even with re-routeing, it must be stressed that further barrows may well exist, especially as many of the known examples are partially hidden under alluvium and peat.

The same re-route (22) also avoided a known density of Romano-British activity (MAP 34):

- Romano-British kiln and pottery (?settlement) (LINCS.A, TF 0569)
- Tile kiln and tile (LINCS.Y, TF 0569)
- Romano-British kiln and tile (LINCS.Z, TF 0568)
- Kilns and kiln debris (LINCS.X, TF 0568)
- Romano-British pottery and stone wall footings (LINCS.BF, TF 0568)
- Romano-British pottery and building debris (?settlement) (LINCS.AA, TF 0568)
- Romano-British settlement (LINCS.AC, TF 0468)
- Romano-British pottery and building debris (?villa) (LINCS.E, TF 0567)

These sites all lie within 2km of each other, and in some instances only 100m from the proposed pipeline route; they also lie close to the Car Dyke, which at this point is crossed by the proposed pipeline route (MAP 34: TF 05836934). Whilst the proposed pipeline avoids the known limits of almost all of the above sites, the undoubted archaeological importance of the whole area indicates a considerable potential for further sites to exist along the proposed route.

A Medieval/Post-Medieval moat exists some 350m east of the proposed pipeline (MAP 34, 60272, TF 0668). Associated features may well exist on the proposed pipeline route.

Bronze Age cremation urns lay some 800m west of the proposed route (MAP 36: 60379, TF 9860). Another is said to have been recovered 1500m to the south (MAP 36: LINCS.A, TF 9858).

The Deserted Medieval Village of Thorpe Tilney lies 1km to the east of the proposed pipeline route (MAP 36: 60343, TF 1257); it is possible that the proposed route may encounter part of the Medieval field systems at this point.

A possible medieval moated site with internal divisions (identified through aerial photography) lies less than 100m to the east of the proposed route (MAP 37: 60277/DBA.DB (AP), TF 1055). It is possible that associated features exist closer to the proposed pipeline route. This is also the point where the proposed route runs close to Medieval Abbey (SAM.251), Neolithic Long Barrow (SAM.27900) and two Bronze Age Barrow Cemeteries (60312, 60313). Yet another probable Bronze Age Barrow Cemetery lies 5km south-west of this group (MAP 38: 60315, TF 1349) and only 840m from the proposed pipeline, thus highlighting the appreciable archaeological significance and potential of the whole area.

5.7.2.3 Category C Sites

Twenty Category C sites are apparent in the 3km data-collection area, only four of which lay within the 1km study corridor. Of these, one is crossed by the proposed pipeline route.

Two cropmark sites, one crossed by the proposed pipeline route and the other 200m to the west, may both represent round barrows (MAP 38: DBA.DQ, TF 1449).

A possible Romano-British camp exists some 1.5km from the proposed pipeline route (MAP 38: LINCS.H, TF 1550). The site did survive as earthworks which have since been ploughed flat.

5.7.2.4 Category D Sites

Eighteen Category D sites are present within the 3km data-collection area, of which the proposed route cuts only one, an area of ridge and furrow (MAP 36: NAR.65, SK 9958).

Where the proposed route passes near to a number of Shrunken Medieval and modern villages of Potterhanworth (MAP 34: TF 0566), Dunston (MAP 35: 60472, TF 0662), Kirkby Green (MAP 36: NAR 39, TF 9847) and Thorpe Tilney (MAP 36: 60343, TF 1157), the potential exists for the disturbance of field-systems associated with these settlements.

5.7.2.5 Category E Sites

Sixty-five Category E sites are recorded for the 3km data-collection area. Many are prehistoric in period, and largely comprise axes dating to the Palaeolithic, Neolithic and Bronze Ages.

A concentration of prehistoric artefacts (mainly axes), coincides with the important Neolithic and Bronze Age funerary area (MAP 37: centred on TF 1155). Once again this highlights the considerable activity that was taking place throughout these periods. A further concentration of prehistoric artefacts, again mostly axes, can be seen clustering around the Bronze Age cemetery to the south (MAP 38: 60315, TF 1549).

Several bog oaks have also been found in this area, indicating the potential for the preservation of organic archaeological remains (MAP 37: TF 1255; MAP 34: TF 0669). A longboat of undetermined date and imprecise location has also been recorded. (MAP 35: NAR.15 TF 0864).

A concentration of Medieval finds comes from around the settlement of Potterhanworth, which lies less than 0.5km from the proposed line (MAP 34: TF 0566).

Finally, a slight concentration of Romano-British artefacts from the area south of Fiskerton village (MAP 34: TF 0471/0571) and a scatter around the Car Dyke (including items such as coin moulds) (MAP 35: TF 0765/0764) have been recovered.

5.7.3 AREA III : Ewerby Fen (MAP 38, TF 1449) to River Welland (MAP 42 TF 2930)

5.7.3.1 Category A Sites

There are eight scheduled sites close to, and within the 3km data-collection area. Of these, five lie just outside, and are all medieval sites: a churchyard cross, a churchyard, an earthwork, an abbey site, and a field system.

Three of the SAMs lay within the 3km data-collection area, but none within the 1km study corridor. Situated in Heckington Fen is a complex of cropmarks lying some 600m east of the Car Dyke and 1200m from the proposed pipeline route (MAP 39: SAM.317, TF 1745). The cropmarks include a number of small circular marks, possibly representing the foundations of

circular buildings, as well as numerous rectangular, oval and sub-rectangular enclosures. A drove road appears to run east-west along the southern part of the site.

Two medieval crosses (one within a church) exist some 1200m from the proposed pipeline route, the first in the village of Swineshead and the second close to the settlement of Drayton (MAP 40: 12575 TF 2340 and 12567, TF 2339).

5.7.3.2 Category B Sites

Thirty-eight Category B sites lie within the 3km data-collection area, 19 of these inside the 1km study corridor. Six sites were crossed by the proposed pipeline route (Aug 96), four of these unavoidable existing linear landscape features. One of the others has been completely avoided, whilst route modification has also moved it away from the densest area of the other.

The proposed pipeline route (Aug 96) was modified (Re-route 23) to avoid a dense cropmark site, probably representing a former settlement (MAP 39: DBA.DR (AP), TF 1745). Romano-British building debris and pottery has been recovered from this site (MAP 39: LINCS.R, TF 1645), suggesting such a date for this settlement. There are also hints of activity to the north, in the form off a linear feature, possibly representing a boundary ditch (MAP 39: DBA.DS (AP), TF 1645). The whole complex is now only 70m from the proposed pipeline route, and could easily extend further towards it. The sensitivity of this area is further enhanced by the proximity of the proposed route to Car Dyke, and to a Romano-British kiln (MAP 39: LINCS.I, TF 1745) the latter excavated in 1970 and producing a stamp dating to 55-155 A.D. This is not so dissimilar to the probable construction date of the Car Dyke around 200 A.D (Simmons, 1975). The proposed route cuts Car Dyke for a second time at TF 17214469 (MAP 39).

The proposed pipeline passes some 300m from Garwick Shrunken Medieval Village (MAP 39: LINCS.A, TF 1744), where further settlement remains and/or associated field systems could be encountered. A saltern mound with Romano-British artefacts (MAP 39: LINCS.B 1844) is also passed by the proposed route some 300m to the north. Modification of the proposed route (Aug 96) (Re-route 20) moved it further away from a possible settlement site identified from aerial photography and which now lies 100m to the south (MAP 39: DBA.DX, TF 1943).

A further route alteration (Re-route 24) was necessary to move the proposed line away from the densest parts of the cropmark site of an enclosure complex (MAP 40: DBA.EF (AP), TF 2142), although it was not possible to completely avoid the site. A similar complex exists some 170m from the proposed pipeline (MAP 40: DBA.EL (AP), TF 2241), along with several Category C sites (see below). Another complex of enclosures with internal divisions and ditches exists some 350m to the west of the proposed pipeline route (MAP 40: DBA.EJ (AP), TF 2141). A smaller enclosure group with internal divisions and possible trackway lies some 120m to the east of the proposed route (MAP 40: DBA.EO (AP), TF 2340).

The possible Deserted Medieval Village of Stenning lies about 500m to the west of the proposed route; today only a moated Manor House exists, so the former village and/or its associated field systems may well spread in to the path of the proposed route (MAP 40: NAR.23, TF 2340).

Five medieval saltern sites are present west of Wigtoft village (MAP 41: 3090, TF 2436; NAR.1, TF 2436; 22494 (surviving as earthworks), TF 2435; 22481, TF 2533 and 22460, TF 2533). The

nearest of these lies less than 200m from the proposed pipeline route. The whole area appears to have been important in many periods for the production of salt, and there is therefore potential for the existence of further sites along the course of the proposed pipeline (see also 5.7.3.3).
The proposed pipeline route crosses 'Sea Bank', a possible medieval or Roman sea defence, three times (MAP 41, TF 2435, 2534 and 2733).

A Medieval moat and Grange site (MAP 41: 13075, TF 2733), with associated fishponds (MAP 41: 13074/DBA.EV, TF 2733) lies some 350m to the west of the proposed pipeline route.

5.7.3.3 Category C Sites
Twenty-six sites in this category were recorded for the 3km data-collection area, 18 within the 1km study corridor. Of these, four sites were crossed by the proposed pipeline route (Aug 96), two of which have been avoided, and a third largely avoided. The re-routing of the proposed pipeline also moved it further from several other Category C sites.

The proposed route (Aug 96) was modified (Re-route 23) to completely avoid two sites, one a concentration of Romano-British pot and building debris (MAP 39: LINCS.R, TF 1645), the other a linear feature, possibly a boundary ditch (MAP 39: DBA.DS (AP), TF 1645) probably associated with a Category B site (MAP 39: DBA.BR (AP), TF 1645). The same re-route also moved the proposed pipeline further north to avoid a scatter of Romano-British pottery and tile possibly representing a building or larger settlement site (MAP 39: LINCS.T, TF 1644). To the north-east of the proposed pipeline lies a number of probable rectilinear enclosures, possibly associated with the Shrunken Medieval Village of Garwick to the south (MAP 39: DBA.BT (AP), TF 1744). A further cropmark site lies less than 40m from the proposed line (MAP 39: DBA.DU (AP), TF 1844). South of this is a rectilinear enclosure and other possible enclosures with associated possible trackway (MAP 39: DBA.DV (AP), TF 1743/1843).

Five cropmark sites lie within 3km of each other, the nearest being just over 100m from the proposed pipeline. These comprise enclosures, ditches and possible trackways (MAP 40: DBA.EA (AP), TF 2943; DBA.EB (AP), TF 2043; DBA.ED (AP), TF 2142; DBA.EH (AP), TF 2142; DBA.EM (AP). TF 2241). The sites may well be associated with a number of other nearby cropmark sites discussed earlier (DBA.EF,EJ, EG, EL and EQ).

A probable Anglo-Saxon or later Medieval mound exists within 1km square TF 0666 (MAP 34: NAR.19), so could potentially lie in the direct path of the proposed pipeline.

A 2km long linear feature running parallel to the proposed route may be of archaeological significance (*eg.* a Roman Road) (MAP 40: DBA.EP (AP), TF 2239/2238).
Four possible medieval saltern sites and saltern material are recorded in the same concentration as the five Category B saltern sites discussed earlier. The sites dealt with here (MAP 41: 12523, TF 2336; NAR.8, TF 2336; 12524, TF 2436; and 13091, TF 2436) reinforce the potential for further similar sites to exist along the proposed pipeline route. One of these, 13091, is crossed by the proposed pipeline route.

A probable enclosure lies some 400m to the west of the proposed route (MAP 41: DBA.ER (AP), TF 2336), whilst a similar site lies about 600m east of the proposed route (MAP 41: DBA.ES (AP), TF 2535).

A final area of archaeological potential exists where the line clips a series of undated enclosures and ditches (MAP 41: DBA.EU (AP), TF 2633). The line was modified to avoid the densest part of this cropmark site (Re-route 25) but it still passes through its northern limits.

5.7.3.4 Category D Sites

Eighteen Category D sites are present within the 3km data-collection area, of which four are crossed by the proposed pipeline:

- Ridge and furrow (MAP 39: DBA.DW, TF 1744)
- ditches (MAP 31: DBA.DY (AP), TF 1943)
- ditch (MAP 40: DBA.EQ (AP), TF 2338)
- former river channels of the Welland (MAP 42, DBA.EW (AP), TF 2830/2930/2929)

An Anglo-Saxon urn was found some 600m east of the proposed pipeline; potential exists here for other such remains (MAP 38: LINCS. J, TF 1646).

Potential also exists for ridge and furrow and related field systems to be located around the centres of the Shrunken Medieval villages of Garwick (MAP 39: LINCS.A, TF 1744), Dowdyke Grange (MAP 41: 13075, TF 2733) and Drayton (MAP 40: 12556, TF 2433).

5.7.3.5 Category E Sites

Thirty-four Category E sites are recorded within the 3km data-collection area. There is a general scatter of artefacts from all periods, though two potentially significant concentrations are noted. One is a slight scatter of Romano-British pottery around the scheduled cropmark site in Heckington Fen (MAP 39: SAM.317, TF 1745). The other is a slight concentration of Medieval pottery clustering around the Shrunken Medieval Village of Drayton (MAP 40: 12556, TF 2433).

5.7.4 AREA IV : River Welland (MAP 42, TF 2930) to Tydd St Mary (MAP 47, TF 4317)

5.7.4.1 Category A Sites

There are eight scheduled sites within this area, three of them inside the 3km data-collection area, all of these within the 1km study corridor. The five situated outside the 3km study corridor comprise four medieval crosses and a Post-Medieval engine house. One of those within the 1km study corridor is at Wykeham, some 450m to the west of the proposed pipeline. It consists of the remains of a medieval chapel and moat, and the site of a medieval grange (MAP 43: SAM.45, TF 2726). The second is Kings Hall medieval moated site (MAP 44: SAM.62, TF 2121) which lies only 220m south of the proposed line. The third is a medieval boundary cross situated north of Tydd St Mary village some 350m from the proposed route (MAP 46: SAM.22713, TF 4118).

5.7.4.2 Category B Sites

Twenty-seven Category B sites lie within the 3km data-collection area, ten within the 1km study corridor and two of these crossed by the proposed route (Aug 96). Both of the latter have since

been avoided (Re-route 26). These are the site of a probable Romano-British settlement, and a cropmark site comprising enclosures and trackways (MAP 45: 22229 and DBA.FJ, TF 3521). The sites may well represent a single focus of activity. The proposed line now runs some 950m to the north.

Three similar cropmark sites exist within a kilometre of each other, the nearest lying some 250m from the proposed pipeline. The first is a probable ring ditch (MAP 44: DBA.EZ (AP), TF 2722); the second comprises four probable ring ditches (MAP 44: DBA.FB (AP), TF 2822) whilst the third appears to be six probable ring ditches (MAP 44: DBA.FC (AP), TF 2922). Together, these three groups of sites may hint at a focus of prehistoric activity.

A medieval moated site lies some 350m south of the proposed pipeline route in Holbeach fen (MAP 45: 23027/NAR.20, TF 3521).

Two further probable ring ditches sites appear close to each other, the nearest lying only 150m from the proposed pipeline (MAP 45: DBA.FH (AP), TF 3621 and DBA.FI (AP): TF 3621). As with the ring ditches mentioned earlier, these sites may form part of a larger landscape complex, potentially extending on to the proposed line.

There appears to be a cluster of seven probable Romano-British settlement sites running eastwards from TF 3420 (MAP 45), to TF 3818 (MAP 46), the closest of these to the proposed pipeline lying around 600m south of it (MAP 45: 22268/23004, TF 3720).

A possible medieval saltworks exists about 500m from the proposed pipeline (MAP 47: NAR.8, TF 4418), though its exact location is not recorded.

5.7.4.3 Category C Sites

Sixteen Category C sites appear within the studied 3km corridor, of which nine lay within the 1km study corridor and only one of which was crossed by the proposed pipeline route (Aug 96). The latter, a possible enclosure (MAP 45: DBA.FM (AP), TF 3621) has been avoided (Re-route 26).

Sites lying particularly close to the proposed pipeline include a cropmark site comprising possible ditches and tracks and situated 500m from the proposed route (MAP 44: DBA.EY (AP), TF 2817), a probable enclosure complex lying only 50m north of the proposed pipeline (MAP 44: DBA.FC (AP), TF 2922), and a group of probable oval enclosures and a possible trackway (MAP 44: DBA.FD (AP), TF 2922) situated *c.*200m north of the proposed route.

Two other enclosure groups appear just over a kilometre to the south west of the above (MAP 44: DBA.FE (AP), TF 5321 and DBA.FF(AP), TF 5321), the closest running only 40m from the proposed pipeline route.

A cropmark site comprising possible enclosures and ditches lies 650m south of the proposed pipeline route (MAP 45: DBA.FG (AP), TF 3621).

A final site comprising five circular and two linear depressions exists some 500m north of the proposed pipeline route (MAP 46: DBA.FN (AP), TF 3721). It is possible that the circular depressions were recently created by the action of horses being tethered to a line and walking a

circular path, since all lie within an existing farm enclosure, and can clearly be seen on aerial photographs to be depressions within pasture. The farm may well be (or have been) a riding school.

5.7.4.4 Category D sites

Only three Category D sites exist in the 3km data-collection area. The proposed pipeline crosses two of these: former river channels of the Welland (MAP 42, DBA.EW (AP), TF 2830/2930/2929) and a group of possible ditches (MAP 44: DBA.FC (AP), TF 2922).

5.7.4.5 Category E Sites

Eight Category E sites are recorded within the 3km data-collection area. These are sparsely scattered and form no concentrations; the material is Romano-British or medieval in date.

5.8 CAMBRIDGESHIRE (MAP 47)

5.8.1 Category A Sites

No scheduled sites are recorded within the 3km data-collection area.

5.8.2 Category B Sites

Eight Category B site lies within the 3km data-collection area, none of which are crossed by the proposed pipeline route.

Two sites lie close to the proposed pipeline route. One is a Deserted Medieval settlement 500m to the north-east of the proposed route (MAP 47: 10920, TF 4417). The second is a linear cropmark, most probably a trackway, whose northernmost known extent lies only 40m south of the proposed pipeline. The latter was moved slightly north (Re-route 27), but the trackway could easily continue (MAP 47: 09749, TF 4515/4614).

5.8.3 Category C Sites

Of the six Category C sites within the 3km data-collection area, one is crossed by the proposed pipeline route. This is part of 'Roman Bank', a stretch of earthwork recorded from the O.S 1st edition 25" map, but now probably no longer extant (MAP 47, DBA:FQ, TF 4515). It forms part of 'Sea Bank', a possible Medieval or Romano-British sea defence visible today in parts of Lincolnshire and Cambridgeshire (see earlier).

The proposed route passes within 200m of an Anglo-Saxon artefact scatter (MAP 47: 10919, TF 4317), with other scatters not lying too far to the south (MAP 47: 09918 and 09014, TF 4216). The potential for Anglo-Saxon settlement evidence, both on the known sites themselves, and in the vicinity, should not be understated, since such remains are relatively rare in this region.

5.8.4 Category D Sites

Two Category D sites lie within the 3km data-collection area, neither of which are crossed by the proposed pipeline route. One of these is a possible ditch lying just to the south of the proposed pipeline (MAP 47: DBA.FP (AP), TF 4415), whilst the other is described as comprising

'possible recent ditches' (MAP 47: 10602, TF 4616). This latter site may well have been destroyed by the construction of Wisbech compressor station.

5.8.5 Category E Sites

One piece of medieval daub is recorded (MAP 47: 10918, TF4215).

6 DISCUSSION

6.1 Overall impact of the proposed pipeline route on the archaeological resource

The proposed pipeline traverses a wide variety of known archaeological landscapes, ranging in date from earlier prehistoric to post-medieval. In particular, it passes directly across, or very close to, a number of known archaeological sites, and will therefore have a direct impact on them. In addition, the potential for further, as yet unrecorded, archaeological sites within this corridor increases the potential impact of the pipeline route.

Most of the following discussion is concerned with the Category B and C sites, since no SAMs lie less than *c.*250m from the proposed pipeline route, and it was not recommended to avoid the Category D and E sites at this stage. The 43 Category D sites which are crossed by the proposed pipeline are, however, considered in the recommendations which follow (see Section 7). The table below lists the numbers of Category B and C sites (including linear landscape sites - see below) crossed by the proposed pipeline route, both in August 1996, and after a number of modifications (Issue C). Sites 'crossed' by the proposed route are those almost certain to be disturbed by the stripping of the *c.*40m wide easement necessary for the construction of the pipeline.

	B all	**B 1km**	**B cut by issue Aug 96**	**B avoided**	**B cut by Issue C**	**C all**	**C 1km**	**C cut by issue Aug 96**	**C avoided**	**C cut by Issue C**
County Durham	**39**	12	0	0	0	29	18	4	0	4
North Yorks	**313**	79	7	6	2	270	152	23	18	12
East Riding U.A	**9**	6	1	0	1	5	3	0	0	1
N. Lincs U.A	**41**	2	0	0	0	5	2	0	0	0
Lincs	**247**	78	8	8	1	138	57	14	12	9
Cambs	7	3	0	0	0	6	3	1	0	1
TOTAL	**656**	**180**	**16**	**14**	**4**	**453**	**235**	**44**	**30**	**27**

Table 4 : Category B and C sites: those crossed by the proposed route (Aug 96), those avoided, and those crossed by Issue C proposed pipeline route

6.2 Category B and C sites crossed by the proposed pipeline route

As Table 4 shows, 16 and 44 Category B and C sites respectively were crossed by the proposed pipeline route (August 96). As a result of route modifications made during the data collection stage of the assessment (see 5.2), all but four of the Category B sites, and more than half of the

Category C sites, have been avoided by the modified route. For the remainder, engineering and environmental constraints prevented complete avoidance, although with most of them it was possible to avoid the most archaeologically dense areas. This explains the discrepancy in the totals recorded in Table 4: the extreme known limits of some of those sites recorded as having been avoided (see Table 3 for complete list), are still crossed by the proposed pipeline route. Table 5 below lists all Category B and C sites crossed by the proposed route, including those which have been largely avoided.

Map No	County	NGR	Source Reference	Description	Cat.
1	Co.D	NZ 2636	DBA.AC	AP: enclosure	C
1	Co.D	NZ 2630	2882/2886/DBA.AD	AP: ?enclosure	C
2	Co.D	NZ 2425	DBA.AI	AP: Linear feature	C
2	Co.D	NZ 2521	DBA.AO	AP: Linear feature	C
4	**NY**	**NZ 2409**	**12714**	**SMV**	**B**
8	NY	SE 3589	8492	AP: oval enclosure & ditch	C
10	NY	SE 3775	8326/DBA.BM	?enclosure	C
12	**NY**	**SE 4068**	**AP.3/DBA.BQ**	**AP: trackways and pits**	**B**
12	NY	SE 4363	6322	AP: enclosure	C
13	NY	SE 4362	6317	AP: trackway and ditches	C
13	NY	SE 4360	6303	AP: rectangular soilmark	C
14	NY	SE 4356	6213	AP: ?enclosures	C
14	NY	SE 4355	6210	AP: enclosures	C
14/15	NY	SE 4752	AP.31/.11	AP: enclosures/field-system	C
14/15	NY	SE 4751	6073	AP: ?ring ditches	C
18	NY	SE 5433	9450	AP: field boundaries	C
18	NY	SE 5432	9464	AP: ?moat	C
20	NY	SE 6325	DBA.CR	AP: ?field system	C
23	ERY	SE 7618	DBA.DB	AP: ditches	C
24	**ERY**	**SE 7717**	**17459/DBA.DF**	**AP: 9 ?ring ditches**	**B**
27	L	SK 8899	NAR.34	AP: enclosure and ditches	C
27	L	SK 8999	NAR.32	AP: ?trackway	C
30	L	SK 9992	50324	AP: linear feature/?enclosures	C
31	L	TF 0585	DBA.DM	AP: circular soilmarks	C
33	L	TF 0777	53176	AP: ?ring ditches	C
33	L	TF 0873	RCHME.40	AP: ?med enclosure	C
38	L	TF 1449	DBA.DQ	AP: ?ring ditches	C
40	**L**	**TF 2142**	**DBA.EF**	**AP: enclosure complex**	**B**
41	L	TF 2436	13091	Med pot and saltern material	C
41	L	TF 2633	DBA.EU	AP: enclosure & ditches	C
47	L	TF 4415	DBA.FQ	'Roman Bank' sea defence	C

Table 5 : Category B and C sites crossed by the proposed pipeline route (Issue C)

6.3 Category B and C sites lying close to the proposed pipeline route

A considerable number of Category B and C sites lie close to the proposed pipeline route (Table 6). The precise limits of many of these sites (particularly those plotted from ill-defined cropmarks) are uncertain, and it is therefore likely that some sites may extend into the path of the proposed route. Table 6 below lists those sites lying approximately within 100m of the proposed pipeline route, as well as some more distant linear sites (*eg.* trackways) which are orientated towards it.

Map No	County	NGR	Source Reference	Description	Cat.
1	Co. D	NZ 2629	DBA.AG	AP: ?ditch system	C
3	Co. D	NZ 2517	DBA.AS	AP: ?enclosure	C
3	Co. D	NZ 2315	1533	AP: ?rectilinear enclosure	C
4	NY	NZ 2214	AP.1/DBA.AW	track and enclosure	C
4	NY	NZ 2212	DBA.BA	rectilinear enclosure	C
4	NY	NZ 2409	AP.23	rectilinear enclosure	C
5	NY	NZ 2406	AP.6	enclosure and ?ring ditch	C
5	NY	SE 2799	DBA.BC	AP: 2 oval ?enclosures	C
6	**NY**	**SE 2889**	**AP.20**	**SMV**	**B**
6	NY	SE 2997	AP.21	?enclosures	C
6	NY	SE 3395	AP.6	enclosures	C
7	**NY**	**SE 3393**	**AP.5**	**?settlement**	**B**
7	**NY**	**SE 3393**	**AP.6**	**?settlement**	**B**
8	NY	SE 3392	12898	AP: enclosure	C
8	NY	SE 3492	12899	AP: ?enclosures and ?track	C
8	NY	SE 4490	AP.12	?enclosure complex	C
8	NY	SE 3489	8547	enclosures	C
8	NY	SE 3489	8490	AP: enclosures	C
8	NY	SE 3588	8491	AP: rectilinear enclosures	C
9	**NY**	**SE 3686**	**8488/DBA.BG**	**AP: encl complex/field system**	**B**
9	**NY**	**SE 3786**	**8496**	**AP: enclosure complex**	**B**
9	NY	SE 3786	8497	AP: ?trackway and ?ditches	C
9	NY	SE 3885	AP.39	enclosure and ditches	C
9	NY	SE 3884	8385/8385.01	enclosure and ?trackway	C
9	**NY**	**SE 3783**	**AP.14**	**DMV**	**B**
9	NY	SE 3783	DBA.BI	?enclosures and field system	C
9	NY	SE 3783	8397	enclosures	C
9	NY	SE 3783	8399	enclosures and ?hut circle	C
9	NY	SE 3783	8401	enclosures and trackway	C
9	**NY**	**SE 3783**	**YT.22**	**Iron Age settlement**	**B**
9	NY	SE 3782	8401	enclosures	C
10	NY	SE 3779	8314	enclosures	C
10	NY	SE 3779	DBA.BK	?rectilinear structure	C
10	NY	SE 3879	8316	enclosure complex	C
10	NY	SE 3776	AP.27	enclosure & ?ring ditch	C
10	NY	SE 3775	8325	?enclosure	C

10	NY	SE 3775	8170	?ring ditch	C
10	NY	SE 3774	8143	enclosures and ditches	C
11	NY	SE 3972	8134	rectilinear enclosures	C
11	NY	SE 3971	8136	?enclosures	C
11	NY	SE 3972	DBA.BP	?enclosures and ditches	C
11	NY	SE 4069	6395	enclosure	C
12	NY	SE 4168	6404	enclosure	C
12	NY	SE 4167	6411	trackways	C
12	**NY**	**SE 4166**	**6384**	**DMV and Manor**	**B**
12	NY	SE 4166	6405	?Medieval fishpond	C
12	NY	SE 4165	DBA.BS	?enclosures	C
12	NY	SE 4264	6324	?ring ditch	C
12	**NY**	**SE 4363**	**6319**	**?DMV**	**B**
13	NY	SE 4361	AP.59	?enclosure	C
13	NY	SE 4361	6311	rectilinear enclosure	C
13	NY	SE 4360	6306	?rectilinear ditch	C
13	NY	SE 4362	6313/DBA.BT	enclosures and trackways	C
13	NY	SE 4360	6304	enclosure and ?trackway	C
13	NY	SE 4358	6221	?enclosure	C
13	NY	SE 4357	6218	enclosures	C
14	NY	SE 4356	2616	AP enclosures	C
14	NY	SE 4445	6206	AP: enclosure & ?droveway	C
14/15	NY	SE 4654	6051.02	Medieval fields/holloways	C
14/15	NY	SE 4752	AP.45	?enclosure and drainage pipe	C
14/15	NY	SE 4750	AP.37/DBA.BV	enclosure and field system	C
15	**NY**	**SE 4849**	**DBA.BW**	**rectangular ?building**	**B**
16	**NY**	**SE 5145**	**AP.8**	**SMV earthworks**	**B**
16	**NY**	**SE 4645**	**NAR.14**	**Med moat and Manor House**	**B**
17	NY	SE 5341	DBA.BX	enclosures and ?ditches	C
17	**NY**	**SE 5339**	**NAR.8**	**site of Medieval moat**	**B**
17	**NY**	**SE 5339**	**DBA.BZ**	**rectangular ?building**	**B**
17	NY	SE 5439	9687	AP: ?enclosure	C
17	NY	SE 5337	DBA.CA	?trackway	C
18	NY	SE 5334	DBA.CB	enclosures and ditches	C
18	**NY**	**SE 5433**	**9447**	**AP: Medieval moat complex**	**B**
18	NY	SE 5433	9451	?Prehistoric enclosure	C
18	**NY**	**SE 5431**	**9493**	**AP: rectilinear enclosure**	**B**
18	NY	SE 5431	AP.38	?field system	C
19	NY	SE 5429	DBA.CI	AP: circ enclosure/?ring ditch	C
19	**NY**	**SE 5429**	**9289**	**AP: ring ditches/enclosures**	**B**
19	**NY**	**SE 5529**	**DBA.CJ**	**AP:enclosures/field system**	**B**
20	NY	SE 6225	DBA.CN	?ring ditch	C
20	NY	SE 6325	DBA.CO	AP: enclosures/pit alignments	B
20/21	**NY**	**SE 6425**	**DBA.CT**	**enclosures and pits**	**B**
21	**ERY**	**SE 6525**	**9372**	**Medieval moat and abbey**	**B**
24	NL	SE 7914	DBA.DG	AP: ?enclosures and ditches	C
27	**L**	**SE 8600**	**NAR.35**	**AP: ?triple ditched boundary**	**B**

27	L	SE 8700	50074	?Med archery practice area	C
27	**L**	**SK 8899**	**NAR.28**	**AP: ?Preh/RB triple ditch**	**B**
28	L	SK 9099	50307	AP: ?trackway	C
28	**L**	**SK 9098**	**NAR.45**	**Prehistoric pit alignment**	**B**
28/29	**L**	**SK 9395**	**50437**	**AP: barrow cemetery**	**B**
29	L	TF 9593	50326	AP: ?trackway	C
32	**L**	**TF 0680**	**53181**	**DMV/Grange**	**B**
33	**L**	**TF 0775**	**53040**	**AP: ?Iron Age settlement**	**B**
33	L	TF 0775	53037	AP: ?Bronze Age barrows	C
33	**L**	**TF 0774**	**53011**	**Medieval earthworks**	**B**
33	**L**	**TF 0774**	**53010**	**AP: ?Medieval, abbey/grange**	**B**
33	L	TF 0873	53015	AP: ?trackway	C
33	L	TF 0873	53017	AP: ?enclosures and ?ditches	C
34	**L**	**TF 0570**	**RCHME.42**	**AP: scatter of BA barrows**	**B**
34	**L**	**TF 0568**	**LINC.Z**	**Romano-British kiln and tile**	**B**
37	**L**	**TF 1055**	**60277/DBA.DP**	**Med/Post-Med grange/moat**	**B**
39	L	TF 1645	LINCS.R	RB pot and building debris	C
39	**L**	**TF 1645**	**DBA.DR**	**AP: enclosure with ?buildings**	**B**
39	L	TF 1645	DBA.DS	AP: ?boundary ditch	C
39	L	TF 1844	DBA.DU	AP: ?parallel enclosures	C
39	L	TF 1843	DBA.DV	AP: enclosure/?trackway	C
39	**L**	**TF 1943**	**DBA.DX**	**AP: enclosure/ ?trackway**	**B**
40	L	TF 2043	DBA.EB	AP: ?track	C
40	L	TF 2142	DBA.ED	AP: ?enclosures	C
40	L	TF 2142	DBA.EG	AP: enclosure and ?trackway	B
40	**L**	**TF 2240**	**DBA.EO**	**AP: enclosures/?trackway**	**B**
44	**L**	**TF 2922**	**DBA.FC**	**AP: ?ring ditches**	**B**
44	L	TF 2922	DBA.FC	AP: ?enclosures	C
44	L	TF 3021	DBA.FE	AP: ?trackways	C
44	L	TF 3021	DBA.FF	AP: ?enclosures and ditches	C
45	**L**	**TF 3621**	**DBA.FI**	**AP: 3 ring ditches**	**B**
47	**C**	**TF 4515**	**9749**	**AP: trackway**	**B**

Table 6 : Category B and C sites lying within *c.*100m of the proposed pipeline route

6.4 Existing linear landscape sites crossed by the route

A number of linear features were unavoidable by the proposed pipeline route. These largely comprise the lines of Roman Roads (North Yorkshire and Lincolnshire), but also include stretches of Car Dyke, a probably Romano-British Canal (Lincolnshire) and parts of the 'Sea Bank', a supposedly Roman or medieval sea defence (Lincolnshire). These are listed in the following table (7).

Map No	County	NGR	Source Reference	Description	Cat.
13	NY	SE 4361	6345	Roman Road	B
13	NY	SE 4358	NAR.15	Possible Roman Road	B

14	NY	SE 4455	6116	Roman Road	B
16	NY	SE 5145	5421/5473	Roman Road	B
18	NY	SE 5434	9471.01/NAR.7	Possible Medieval Canal	C
21/22	ERY	SE 6920	9486	Post-Med Canal	B
21/22	ERY	SE 6920	9490	Dutch River	B
22	ERY	SE 7220	8822	Railway Track	B
24	NL	SE 7915	9488	Former course of R. Don	D
25	NL	SE 8410	8828	Railway Track	B
29	L	SK 9693	50574	Roman Road (Ermine Street)	B
31	L	TF 0586	51456	Possible Roman Road	B
33	L	TF 0777	50580	Roman Road	B
33	L	TF 0777	51242	Roman Road	B
34	L	TF 0569	n/a	Car Dyke Roman Canal	B
39	L	TF 1744	n/a	Car Dyke Roman Canal	B
41	L	TF 2435	n/a	Sea Bank RB/Med sea defence	B
41	L	TF 2534	n/a	Sea Bank RB/Med sea defence	B
41	L	TF 2733	n/a	Sea Bank RB/Med sea defence	B

Table 7 : Existing linear landscape sites crossed by the proposed pipeline route

In addition to the impact on the linear features themselves, the proposed pipeline will also disturb adjacent land which, in the case of Roman Roads, may contain 'ribbon development'. One should also note the difficulty of locating sites covered by alluvium within the valley floodplains crossed by the proposed pipeline. A possible methodology for dealing with these sites is outlined in Section 7.

6.5 The Humber Wetlands and the Southeast Lincolnshire Fenlands

The proposed pipeline passes through a considerable stretch of these two important wetland zones. The density of known archaeological sites within the study corridor in these areas (particularly those of earlier prehistoric date) is low in comparison with other parts of the proposed route. This does not necessarily indicate that few sites are actually present, since the wet ground conditions and the depth of alluvial sedimentation and peat formation in these areas limits the detection of archaeological sites. Furthermore, the waterlogged nature of the land means that the potential for preserved archaeological remains is high.

7 RECOMMENDATIONS

7.1 General

The assessment has identified five levels of impact on the known and potential archaeological resource of the proposed pipeline route:

A overall impact along the proposed route (see 7.1.1).

B high site-specific impact where the proposed route is certain or likely to disturb known archaeological sites (see 7.1.2).

C high potential impact in a number of archaeologically-rich landscapes. *(eg.* Barlings and Stainfield barrow cemetery complex, Lincs) (see 7.1.3).

D high impact on a number of existing linear landscape sites (*eg.* Car Dyke and various Roman roads) (see 7.1.4).

E high impact in two large areas of wetland: the Humber Wetlands and the Southeast Lincolnshire Fenlands (see 7.1.5).

7.1.1 Overall route

Most of the proposed pipeline route crosses areas of no known archaeology. These apparently 'blank' areas should generally be regarded as areas of uncertain potential rather than those of no potential. For this reason, and in accordance with current practice for assessing linear developments, it is recommended that the entire proposed route be subject to:

- field reconnaissance survey (Stage 2a - see 7.2.1).
- fieldwalking (Stage 3a - see 7.2.2).
- earthwork survey (Stage 3b - see 7.2.3).
- archaeogeophysical survey (Stage 3c - see 7.2.4).

7.1.2 Known sites

The desk-based assessment identified many sites along the course of the proposed route, of which the following sites were unavoidable: four Category B Sites, 27 Category C Sites and 43 Category D Sites (see Tables 4 and 5). An appreciable number of additional sites remain close to the proposed route.

In addition to the work carried out along the overall route, it is recommended that those other sites crossed by, or close to the route are subject to:

- detailed magnetometer scan and magnetic susceptibility survey (Stage 3c - see 7.2.4).
- detailed magnetometer survey (if the results of the scan are positive) (Stage 3c - see 7.2.4).

7.1.3 Archaeologically-rich landscapes

Four areas of particularly high archaeological potential are highlighted where the proposed route passes close to:

1 Aldborough ISVRIVM Roman Town (MAP 12: SE 4066)

2 Manor Garth medieval moated site (MAP 18: SE 5433)

3 The Stainfield and Barlings Bronze Age cemetery complex (MAP 33 TF 0973) & Washingborough Fen Barrow Cemetery (MAP 34: TF 0570)

4 The area in the proximity of Car Dyke, prolific Romano-British kilns and probable structural remains (MAP 34: TF 0568)

In addition to the work carried out along the entire proposed route, it is recommended that these areas are subject to:

- a detailed magnetometer scan and magnetic susceptibility survey.
- detailed magnetometer survey (in areas where the results of the magnetic scan are positive).

7.1.4 Extant linear landscape sites

Eighteen linear sites are crossed by the proposed pipeline route (Table 7). These include the purported courses of eight Roman roads (in North Yorkshire and Lincolnshire), two stretches of Car Dyke and three of Sea Bank in Lincolnshire, a possible medieval canal in North Yorkshire, and four post-medieval features in North Lincolnshire: 2 railway lines, a canal, and the 'Dutch River'.

Detailed magnetometer scanning is particularly effective in locating 'ribbon development' alongside Roman roads, which tend to be delimited by a ditch parallel to the road at the rear of any settlement.

The avoidance of Car Dyke and Sea Bank is unlikely. The preferred option therefore is to auger-bore beneath them, although it should be remembered that this will involve the excavation of large auger pits on either side of the features.

If auger-boring is unfeasible, it will be necessary to devise an acceptable strategy which minimises destruction. This is likely to include a combination of machine and hand excavation within a restricted cutting, in advance of construction works. Any strategy will involve consultation with the project engineers.

Auger-boring beneath the post-medieval sites should not significantly affect the archaeological resource.

To summarize, it is recommended that the areas adjacent to the canals and Roman roads are subject to:

- detailed magnetic scanning and magnetic susceptibility survey.
- detailed magnetometer survey (in areas where the magnetic scan is positive).

Machine and/or hand-excavation may be necessary at Car Dyke in advance of construction.

7.1.5 The Humber Wetlands & South-east Lincolnshire Fenlands

For these wetland zones, particular attention should be paid during the topographical survey to any changes in soils and sediments along the route (particularly the location of peat deposits), as such variations can influence the detection of archaeological sites. As with other areas of the route, an initial fieldwalk, geophysical scan and magnetic susceptibility strategy should be implemented. This strategy however, will only be effective in locating surface, or near-surface sites, notably of later prehistoric date.

From experience, most of the wetlands will produce apparently negative results, due to the masking effect of alluvium and peat; earlier prehistoric sites will tend to be too deeply buried for detection. Wetland archaeology is an expert discipline and liaison with the relevant specialist is needed to ascertain further strategies to be implemented for specific areas after the initial survey has been completed.

It is possible that certain areas will require a systematic programme of test-pitting and auger survey to ascertain the depth, nature and deposition sequence of the alluvial and peat deposits. It must be stressed that before any intrusive techniques are implemented, adequate provision is made for the retrieval, consolidation and analysis of any resultant organic and environmental remains.

To summarize, the following techniques are recommended:

- magnetic scan and magnetic susceptibility survey (Stage 3c - see 7.2.4.1)
- magnetometer survey (Stage 3c - see 7.2.4.3)
- possible use of augering, test-pits and machine trenches

7.2 The Investigatory Stages

A staged approach (see Appendix 2) is recommended for the assessment of the various impacts identified and discussed above, where each investigative stage corresponds to a different field evaluatory technique. The following sections (7.2 to 7.3) outline the investigative stages in relation to the impacts of the proposed route.

7.2.1 Field Reconnaissance Survey (Stage 2b)

It is recommended that the entire length of the proposed pipeline route is subject to a visual inspection to record:

- the location and character of any previously unknown extant earthworks.
- the level of preservation of any known earthworks.
- the location and nature of any soil and/or vegetative changes, thought to indicate sub-surface archaeological deposits.

- present (and former) landuse.
- topographic variations.
- visible geology.
- health and safety implications.

Any new 'sites' located during this survey will be assessed for further evaluatory work (Stage 3).

It is anticipated that the Field Reconnaissance Survey will be conducted in tandem with the Fieldwalking (Stage 3a).

7.2.2 Fieldwalking (Stage 3a)

Agricultural land along the length of the proposed pipeline should be subject to a programme of systematic fieldwalking to be carried out in accordance with the current British Gas Brief for 'Pre-construction Survey.' The specific objectives of this survey would be to:

- locate, delimit and date any previously unknown sites
- determine the date and spatial extent of those sites previously identified by the desk-based
  assessment (Stage 2a), and which could not be avoided by a re-route.

Any new 'sites' located during this survey will be assessed for further evaluatory work (*eg.* Stage 3c - see 7.2.4).

It is anticipated that the Fieldwalking Survey will be conducted in tandem with the Field Reconnaissance Survey (Stage 2a).

Fieldwalking needs visible bare earth. It follows therefore that fieldwalking is rarely possible during spring, and that late autumn/winter is the optimum period for this work.

7.2.3 Earthwork Survey (Stage 3b)

Earthwork sites identified during the Stage 2 surveys should be recorded by means of detailed topographic survey, normally using a total-station theodolite. The survey will enable an assessment of the suitability of any earthwork site for further investigation (*eg.* Stages 3c and 4 - see 7.2.4 and 7.2.5).

It is anticipated that the Earthwork Survey will be conducted alongside or shortly following the Fieldwalking (Stage 3a).

7.2.4 Archaeogeophysical Survey (Stage 3c)

Archaeogeophysical survey should be carried out along the proposed pipeline route in order to:

- locate any unknown archaeological sites (7.2.4.1)
- determine more fully the nature and extent of any known sites (7.2.4.2 and 7.2.4.3), identified during previous stages of investigation.

The survey will normally be undertaken in a phased approach: first, a fixed-interval magnetic susceptibility survey (using a field coil) and continuous magnetometer scan, to identify areas of potential archaeological activity; second, a detailed magnetometer survey to provide intra-site detail, such as the shape and magnetic intensity of sub-surface features. Either phase may be accompanied by an auger survey (and laboratory analysis), where further investigation of the soils' magnetic characteristics are needed to clarify results.

A specialist archaeogeophysical appraisal of the proposed route should be commissioned, in order to assess the efficacy of the various geophysical techniques in respect of the various lithologies; resistivity survey may be more appropriate than magnetic survey on certain sites.

7.2.4.1 Magnetic Susceptibility Survey and Magnetometer Scan

It is recommended that a combined magnetometer scan and magnetic susceptibility survey be conducted along the proposed route. It is anticipated that these surveys would be carried out in conjunction with the fieldwalking (Stage 3a), so that the combined results could be assessed together.

7.2.4.2 Detailed Magnetometer Scan

A more detailed scan will be required along sections of the proposed route which:

- pass close to (within *c.*100m of) any known sites identified during the Stage 2a survey (see Table 6), to assess whether they extend into the easement.

- cross Category B, C and D Sites, to determine more fully their character, extent, date and overall archaeological potential, prior to any detailed magnetic survey.

Where rapid and detailed scanning produces anomalies considered to be of archaeological potential, then detailed geophysical survey should follow.

7.2.4.3 Detailed Geophysical Survey

Detailed (gridded) archaeogeophysical survey (following detailed scanning - see 7.2.4.2), is recommended for all known sites (found during Stages 2 and 3) that are directly (or likely to be) crossed by the proposed pipeline easement. The sites will include:

- Category B and C sites identified by the desk-based assessment (Stage 2a).
- Category D sites identified during Stage 2a, and shown by the magnetometer scan (Stage 3c) to be significant.
- sites identified by field reconnaissance survey (Stage 2b).
- sites identified by fieldwalking (Stage 3a).
- sites identified by earthwork survey (Stage 3b).
- sites identified by magnetometer scanning (Stage 3c).

There are four Category B Sites (excluding linear landscape sites - see 7.1.4), and twenty-seven Category C sites, which lie in the direct path of the proposed route (Tables 5). The survey should normally be restricted to the width of the proposed route easement and the immediate area to either side, sufficient to determine more fully the spatial extent and character of the site. The type of detailed geophysical survey employed will depend upon the responsiveness of the underlying geology to the particular technique.

In general, the limestone areas will tend to be most responsive, whilst certain clay areas, particularly the Keuper Marl may be relatively unresponsive. The responsiveness of the Drift will depend upon the origins of the derived material, the glacially transported material (such as Morainic drift) tending to produce anomalous results. The consistency of most riverine gravels tends to make them relatively conducive to survey, although iron concentrations within river gravel terraces can produce spurious magnetic patterns.

An early scan of certain sites might help determine the best technique to be applied. Specialist archaeogeophysical advice should be sought on these matters.

7.2.5 Field Evaluation (Stage 4)

This stage of fieldwork would be expected to follow for sites identified during previous stages of investigation, and which were unavoidable by re-routing of the proposed pipeline. Although specific sites/areas requiring Field Evaluation can not be anticipated at this stage, it does seem useful, however, to outline the three main evaluatory techniques: hand-dug test-pits, auger survey and machine trenches.

These techniques can be used to determine the presence/absence, extent, character, date and level of preservation of sub-surface archaeological deposits, at sites identified in Stages 2 and 3. Precise methodologies would largely depend on site-specific factors.

7.2.5.1 Hand-dug test-trenches (Stage 4a)

The use of small, hand-excavated test-pits may be envisaged in the following cases:

- Where fieldwalking has identified a significant artefact scatter.
- Where geophysical scanning has identified significant anomalies, and trial-trenching is either impossible or considered inappropriate.
- Where magnetic scanning has failed to locate significant anomolies over known Category B or C sites with high archaeological potential.
- In certain areas of the Humber Wetlands and Lincolnshire Fenland where fieldwalking and magnetic scanning have failed to locate sites but where there are other reasons to suggest a high archaeological potential along the proposed route.

7.2.5.2 Auger Survey (Stage 4b)

The use of auger survey to recover sub-surface soil samples is envisaged:

- in areas sealed by alluvium (river floodplains).

- in areas sealed by peat (*eg.* the Humber Wetlands and Southeast Lincolnshire Fenlands).
- on sensitive sites (*eg.* earthworks), in order to assess the presence or absence, and preservation, of archaeological deposits.

7.2.5.3 Machine-Trench Evaluation (Stage 4c)
The machine excavation of evaluation trenches may be necessary to investigate:

- sites which have had positive Stage 3 results.
- apparently 'blank' areas, if of high archaeological potential.

7.2.6 Area Excavation
Excavation may be necessary for a limited number of sites, which cannot be avoided by re-routing the proposed pipeline.

7.3 Summary Table of Recommendations

	overall route	**specific sites** B (4) C (27) D (43)	**archaeologically rich areas** (4)	**extant linear landscape sites** (15)	**wetlands**
Stage 2b	*				
Stage 3a	*				
Stage 3b	*				
Stage 3c (magnetic scan and magnetic susceptibility survey)	*				
detailed magnetometer scan		* * *	*	*	*
detailed magnetometer survey		* * *	*	*	*
Stage 4		* * *	*	*	*
Specialist Consultation					*

Table 8: Summary of Recommendations

Key to Table: * recommended at next stage of investigation
* possible at later stage of investigation

8 CONCLUSIONS

This documentary study has identified a large number of archaeological sites along the proposed Bishop Auckland to Wisbech Gas pipeline. Each has been categorised in order to assess the impact that the proposed pipeline route will have on them. The current route is the end-product of several re-routes, advised by Network Archaeology, with the aim of avoiding the major known sites. A proportion of Category B and C sites remain along the course of the proposed route and require intensive study during the next stage of the project.

Zones of high potential are identified along the proposed route, in particular where it passes close to known archaeological sites. Archaeologically-rich landscapes of higher than average potential are also identified along the proposed route. In addition, new sites are certain to be identified during the subsequent stages of field investigation.

The combined results from this desk-based assessment and later field evaluation will provide the necessary information upon which discussions can be made for the subsequent management of the archaeological resource both in advance of, and during the construction stages of the project, in accordance with the standards outlined in the current British Gas Archaeological Brief. There is a need for the field investigation phase of the project to begin at the earliest opportunity, preferably during the winter months of 1996/7, in order to avoid delays to the British Gas construction programme.

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APPENDICES

APPENDIX 1

The brief issued for this project by British Gas TransCo.

1.0 DESKTOP ASSESSMENT

1.1 British Gas will provide 1:10000 maps of the proposed corridor of interest.

1.2 The relevant sites and monuments records will be consulted and details of all archaeological information obtained.

1.3 Aerial photographic records will be consulted and details and plots of any sites obtained.

1.4 Details of all listed buildings and their curtillagers will be obtained.

1.5 Any relevant local records will be consulted.

1.6 The information so obtained from all these sources will be plotted on the maps provided.

1.7 A report detailing areas of archaeological concern along the proposed corridor of interest will be prepared, together with a gazetteer of the information obtained.

APPENDIX 2

The Investigatory Stages

Network Archaeology Ltd identifies the following key stages in the archaeological input to pipeline schemes:

Stage 1- Appraisal (desk-based review of existing data held in the relevant County Sites and Monuments Record)

Stage 2a - Archaeological Desk-Based Assessment

Stage 2b - Field Reconnaissance Survey (rapid walkover)

Stage 3a - Fieldwalking (and Topographic Survey)

Stage 3b - Archaeogeophysical Survey

Stage 4- Field Evaluation
- a. Hand-dug test-trenches
- b. Machine-excavated trenches

Stage 5- Excavation (detailed excavation of those sites which it is not possible or desirable to protect)

Stage 6- Watching Brief (during construction)

Stage 7- Archive and Publication (synthesis and dissemination of results; this stage leads on from each of the stages 2-6)

NB. The section in ***italic bold*** represents the relevant stage to the current project.

APPENDIX 3

DETAILS OF SOURCES CONSULTED DURING ASSESSMENT

Sites and Monuments Records (SMR)

County Durham	The Bowes Museum, Barnard Castle, County Durham.
North Yorkshire	North Yorkshire County Council Heritage Unit, County Hall, Northallerton, North Yorkshire.
East Riding of Yorkshire and North Lincolnshire Unitary Authorities	The Humberside Archaeological Partnership, The Old School, Northumberland Avenue, Kingston Upon Hull.
Lincolnshire	Lincolnshire County Council, Environmental Development Division, Friars Lane, Lincoln.
Cambridgeshire	Cambridgeshire County Council, Shire Hall, Castle Hill, Cambridge.

County Records Offices

County Durham	Durham, County Durham
North Yorkshire	Malpas Road, Northallerton, North Yorkshire
East Riding of Yorkshire and North Lincolnshire Unitary Authorities	As for Lincolnshire
Lincolnshire	Lincolnshire Archives, St.Rumbolds Street, Lincoln
Cambridgeshire	Shire Hall, Cambridge

Aerial Photographic Sources

Cambridge University Committee for Aerial Photography (CUCAP)	The Mond Building, Free School Lane, Cambridge
National Monuments Record Centre (NMR)	Kemble Drive, Swindon

British Gas 1:10,000 scale verticals of proposed pipeline route, August 1996	Aerofilms Ltd
Meridian Collection 1969	Cambridge County Records Office, Shire Hall, Cambridge

Libraries

Lincoln Central Library, Free School Lane, Lincoln
Morrell Library, York University

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.AA	Dur R.O	OS.6"1st; 1861; 35	'old lime kilns'	1	D	NZ 2731
DBA.AB	NMR	V.AP: 7464/142-5; 13/07/77; BG	probable modern pipeline	1	D	NZ 2630
DBA.AC	NMR	V.AP: 7464/143; 13/07/77; BG	possible enclosure	1	C	NZ 2630
DBA.AD	NMR	V.AP: 7362/98; 07/07/76; BG	possible linear enclosure	1	C	NZ 2630
DBA.AE	NMR	V.AP: 7362/98; 07/07/76; BG	possible enclosures	1	C	NZ 2529
DBA.AF	Dur R.O	OS.6"1st; 1861; 42	well	1	B	NZ 2529
DBA.AG	NMR	V.AP: 10689/21-2; 07/07/84; CRW	possible ditch system	1	C	NZ 2629
DBA.AH	NMR	OB.AP: NZ2427/1-6; 12/08/94; CRW	criss-crossing ditches	1	C	NZ 2427
DBA.AI	B.GAS 1996	V.AP: 33/274; 08/96; AERO	linear feature: ?pipeline/RB road	2	C	NZ 2426
DBA.AJ	NMR	V.AP: 690/5169; 27/06/47; CRW	?infilled pond	2	C	NZ 2424
DBA.AK	Dur R.O	OS.6"1st; 1859; 48	'Fox Covert'	2	D	NZ 2523
DBA.AL	B.GAS 1996	V.AP: 33/2277; 08/96; AERO	ridge and furrow	2	D	NZ 2522
DBA.AM	NMR	V.AP: 2170/79-81; 31/07/63; CRW	?recent field boundaries	2	D	NZ 2522
DBA.AN	B.GAS 1996	V.AP: 33/2279; 08/96; AERO	?double-ditched enclosure	2	C	NZ 2521
DBA.AO	NMR	V.AP: 10815/11/06/89; CRW	linear feature: ?road	2	C	NZ 2521
DBA.AP	NMR	V.AP: 2170/81; 31/07/63; CRW	possible enclosure	2	C	NZ 2521
DBA.AQ	NMR	OB.AP: NZ2620/1-2; 01/04/88; BXV	rectangular enclosure (?Med)	3	B	NZ 2620
DBA.AR	NMR	V.AP: 2170/81; 31/07/63; CRW	ridge and furrow	3	D	NZ 2520
DBA.AS	NMR	OB.AP: NZ2517/1-3 27/07/84; CRW	possible enclosure	3	C	NZ 2517
DBA.AT	Dur SMR	AP overlay to NZ 21 NW	?enclosure & field system	3	C	NZ 2316
DBA.AU	Dur SMR	AP overlay to NZ 21 NW	rectangular enclosure	3	C	NZ 2215
DBA.AV	Dur SMR	AP overlay to NZ 21 NW	rectangular enclosure	3	C	NZ 2215
DBA.AW	B.GAS 1996	V.AP: 31/2301; 08/96; AERO	trackway	4	C	NZ 2214
DBA.AX	B.GAS 1996	V.AP: 32/2295; 08/96; AERO	enclosures/ditches (?DMV)	4	C	NZ 2212
DBA.AY	NMR	OB.AP: NZ2212/1; 10/08/77; CRW	possible ditches	4	D	NZ 2212

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.AZ	B.GAS 1996	V.AP: 31/2305; 08/96; AERO	ridge and furrow	4	C	NZ 2410
DBA.BA	B.GAS 1996	V.AP: 31/2306; 08/96; AERO	rectangular enclosure	4	C	NZ 2409
DBA.BB	B.GAS 1996	V.AP: 31/2308; 08/96; AERO	rectangular enclosure	5	C	NZ 2508
DBA.BC	B.GAS 1996	V.AP: 31/2318; 08/96; AERO	2 possible oval enclosures	6	C	SE 2799
DBA.BD	B.GAS 1996	V.AP: 30/2331; 08/96; AERO	trackway & possible enclosures	6	C	SE 2998
DBA.BE	B.GAS 1996	V.AP: 29/2352; 08/96; AERO	possible enclosure complex	8	C	SE 3687
DBA.BF	B.GAS 1996	V.AP: 29/2354; 08/96; AERO	ridge and furrow	9	D	SE 3586
DBA.BG	NMR	OB.AP: SE3686/1-4; 29/07/91; CRW	field system/enclosure complex	9	B	SE 3686
DBA.BH	NMR	OB.AP: SE3785/1; 28/03/56; CAP	part of enclosure complex	9	B	SE 3785
DBA.BI	NMR	OB.AP: SE3783/1; 29/07/91; CRW	enclosures & ?field system	9	C	SE 3783
DBA.BJ	NMR	OB.AP: SE3881/1; 22/08/79; CRW	possible enclosure	10	C	SE 3880
DBA.BK	B.GAS 1996	V.AP: 27/5952; 08/96; AERO	possible rectangular building	10	C	SE 3779
DBA.BL	NMR	OB.AP: SE3879/1; 22/08/79; CRW	?ditches	10	D	SE 3878
DBA.BM	NMR	OB.AP: SE3776/1-2; 22/08/79; CRW	part of rectangular enclosure	10	C	SE 3775
DBA.BN	NMR	OB.AP: SE3776/1-2; 22/08/79; CRW	possible enclosure & trackway	10	C	SE 3775
DBA.BO	NMR	OB.AP: SE3874/1-3; 29/07/91; CRW	possible enclosure & trackway	11	C	SE 3874
DBA.BP	B.GAS 1996	V.AP: 26/5934; 08/96; AERO	possible enclosures and ditches	11	C	SE 3972
DBA.BQ	NMR	OB.AP: SE4168/1-5; 29/07/91; CRW	pit alignment and trackways	12	B	SE 4168
DBA.BR	B.GAS 1996	V.AP: 26/5928; 08/96; AERO	double ditch (?defensive)	12	B	SE 4066
DBA.BS	B.GAS 1996	V.AP: 26/5928; 08/96; AERO	possible enclosures	12	C	SE 4066
DBA.BT	NMR	OB.AP: SE4362/1-2; 10/08/89; CRW	linear feature (part of enc.syst)	13	B	SE 4362
DBA.BU	NMR	OB.AP: SE4554/1-2; 21/07/55; CAP	part of DMV earthworks	14	B	SE 4554
DBA.BV	NMR	OB.AP: SE4851/1-7; 05/08/90; CRW	ditches and possible enclosure	15	C	SE 4851
DBA.BW	B.GAS 1996	V.AP: 23/5870; 08/96; AERO	rectangular structure	15	B	SE 4849
DBA.BX	NMR	OB.AP: SE5341/1-6; 07/91; CRW	enclosure complex	17	B	SE 5341
DBA.BY	NMR	OB.AP: SE5340/1-3; 24/07/91; CRW	possible enclosure & trackway	17	C	SE 5340

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.BZ	B.GAS 1996	V.AP: 21/5840; 08/96; AERO	possible rectangular building	17	B	SE 5438
DBA.CA	NMR	OB.AP: SE5337/11-25; 24/07/92; CRW	possible track	17	C	SE 5337
DBA.CB	NMR	OB.AP: SE5334/1-2; 28/08/92; CRW	possible enclosures & ditches	18	C	SE 5334
DBA.CC	N Yorks SMR	SE 53 SW AP overlay	possible ditches	18	D	SE 5334
DBA.CD	N Yorks SMR	Gasgoigne Wood fieldwalking project	ridge and furrow	18	D	SE 5232
DBA.CE	N Yorks SMR	Gasgoigne Wood fieldwalking project	flint & RB pot scatter	18	D	SE 5332
DBA.CF	N Yorks SMR	Gasgoigne Wood fieldwalking project	flint & RB pot scatter	18	D	SE 5332
DBA.CG	N Yorks SMR	Gasgoigne Wood fieldwalking project	Med pot	18	E	SE 5332
DBA.CH	N Yorks SMR	SE 53 SW AP overlay	possible enclosure	18	C	SE 5330
DBA.CI	B.GAS 1996	V.AP: 21/5830; 08/96; AERO	possible circular enclosure	19	C	SE 5429
DBA.CJ	B.GAS 1996	V.AP: 21/5828; 08/96; AERO	enclosure complex	19	B	SE 5529
DBA.CK	B.GAS 1996	V.AP: 16/5570; 08/96; AERO	enclosure and field system	19	B	SE 5728
DBA.CL	NMR	OB.AP: SE5827/1-15; 10/07/92; CRW	rectilinear ?enclosure	20	C	SE 5827
DBA.CM	B.GAS 1996	V.AP: 19/5800; 08/96; AERO	?recent drainage ditches	20	D	SE 6027
DBA.CN	B.GAS 1996	V.AP: 19/5798; 08/96; AERO	possible ring ditch	20	C	SE 6225
DBA.CO	NMR	OB.AP: SE6325/1; 24/07/91; CRW	enclosures & pit alignments	20	B	SE 6325
DBA.CP	NMR	OB.AP: SE6325/1; 24/07/91; CRW	recent field boundaries	20	D	SE 6325
DBA.CQ	B.GAS 1996	V.AP: 19/5796; 08/96; AERO	possible rectilinear enclosure	20	C	SE 6325
DBA.CR	B.GAS 1996	V.AP: 16/5565; 08/96; AERO	possible enclosures/field system	20	C	SE 6325
DBA.CS	NMR	OB.AP: SE6325/1; 24/07/91; CRW	?enclosures/recent boundaries	20	C	SE 6325
DBA.CT	NMR	OB.AP; SE6425/1; 29/07/91; ?	?enclosures, pits, field system	21	B	SE 6425
DBA.CU	NMR	OB.AP; SE6425/1; 29/07/91; ?	?recent field boundaries	21	D	SE 6425
DBA.CV	Hull SMR	SE 62 SE AP site	square feature (?barrow)	22	C	SE 6721
DBA.CW	B.GAS 1996	V.AP: 17/5571; 08/96; AERO	rectangular enclosure	22	C	SE 6920
DBA.CX	NMR	OB.AP: SE6920/1-5; 22/07/91; CRW	rectangular enclosure	22	C	SE 6920
DBA.CY	B.GAS 1996	V.AP: 17/5776; 08/96; AERO	6 possible ring ditches	22	B	SE 7320

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.CZ	B.GAS 1996	V.AP: 16/5548; 08/96; AERO	possible ditch	23	D	SE 7518
DBA.DA	B.GAS 1996	V.AP: 16/5547; 08/96; AERO	?ditch	23	D	SE 7618
DBA.DB	B.GAS 1996	V.AP: 16/5547; 08/96; AERO	ditches	23	C	SE 7618
DBA.DC	NMR	V.AP: 4876/68; 14/06/67; ?	linear feature: ?drain/road/track	23	D	SE 7617
DBA.DD	B.GAS 1996	V.AP: 16B/5742; 08/96; AERO	4 possible ring ditches	24	B	SE 7718
DBA.DE	NMR	V.AP: 4876/61; 14/06/67; ?	linear feature: ?drain/ditch/road	24	D	SE 7816
DBA.DF	B.GAS 1996	V.AP: 16B/5741; 08/96; AERO	8 possible ring ditches	24	B	SE 7717
DBA.DG	NMR	OB.AP: 7915/4-5; 12/07/90; CRW	enclosures and ?trackway	24	C	SE 7914
DBA.DH	NMR	V.AP: 7353/174; 06/06/76; HUM	linear feature: ?drain/ditch/track	26	D	SE 8408
DBA.DI	NMR	V.AP: 7353/161; 06/06/76; HUM	linear feature: ?drain/ditch	26	D	SE 8407
DBA.DJ	B.GAS 1996	V.AP: 15/5523; 08/96; AERO	oval feature: ?infilled pond	26	D	SE 8406
DBA.DK	B.GAS 1996	V.AP: 15/5523; 08/96; AERO	?drainage ditch	26	D	SE 8406
DBA.DL	NMR	V.AP: 7353/133; 06/06/76; HUM	?post-med warping system	26	D	SE 8404
DBA.DM	B.GAS 1996	V.AP: 11/5462-3; 08/96; AERO	4 circular soilmarks: ?archaeol	31	C	TF 0585
DBA.DN	B.GAS 1996	V.AP: 11/5442; 08/96; AERO	part of ?rectilinear enclosure	33	C	TF 0974
DBA.DO	Lincs SMR	TF 06 SE Map	Brickyard farm placename	36	D	TF 0860
DBA.DP	NMR	OB.AP: TF1055/1-3; 31/07/81; CRW	Med enclosure/moat	37	B	TF 1055
DBA.DQ	CUCAP AP	V.AP: RC8 BG 1976	4 circular features	38	C	TF 1449
DBA.DR	B.GAS 1996	V.AP: 8/5380-1; 08/96; AERO	rectangular enclosure/buildings	39	B	TF 1645
DBA.DS	NMR	OB.AP: TF1745/14; 01/01/30; CRW	?boundary ditch	39	C	TF 1645
DBA.DT	B.GAS 1996	V.AP: 8/5379; 08/96; AERO	enclosures & field system	39	C	TF 1744
DBA.DU	NMR	OB.AP: TF1844/1-2; 30/07/83; JAP	narrow parallel ?enclosures	39	C	TF 1844
DBA.DV	NMR	OB.AP: TF1843/1-3; 30/07/83; JAP	?enclosures & ?trackway	39	C	TF 1843
DBA.DW	Lincs SMR	TF 14 SE Map	ridge and furrow	39	D	TF 1743
DBA.DX	NMR	OB.AP: TF1943/1-19; 1976-94; CRW	enclosure and trackway	39	B	TF 1943
DBA.DY	NMR	OB.AP: TF1943/1-19; 1976-94; CRW	ditch	39	D	TF 1943

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.DZ	NMR	OB.AP: TF1943/1-19; 1976-94; CRW	rectangular feature	39	D	TF 1943
DBA.EA	NMR	V.AP: 8164/115; 05/05/76; BG	possible enclosure and ditch	40	C	TF 2043
DBA.EB	NMR	OB.AP: TF2043/2; 26/07/79; CRW	possible trackway	40	C	TF 2043
DBA.EC	NMR	V.AP: 1116/4019; 05/05/50; CRW	recent drainage ditches	40	D	TF 2143
DBA.ED	NMR	OB.AP: TF2143/1; 26/07/79; CRW	possible enclosures	40	C	TF 2142
DBA.EF	NMR	V.AP: 1116/4020; 05/05/50; CRW	enclosure complex	40	B	TF 2142
DBA.EG	NMR	V.AP: 1116/4020; 05/05/50; CRW	enclosure & ?trackway	40	B	TF 2142
DBA.EH	NMR	V.AP: 1116/4020; 05/05/50; CRW	possible enclosure	40	C	TF 2142
DBA.EI	NMR	OB.AP: TF2242/2; ?; ?	enclosure complex	40	B	TF 2242
DBA.EJ	NMR	V.AP: 1116/4020; 05/05/50; CRW	enclosure and ditches	40	B	TF 2042
DBA.EK	NMR	V.AP: 8164/108; 05/06/76; BG	?recent drainage ditches	40	D	TF 2141
DBA.EL	NMR	OB.AP: TF2142/1; 03/03/80; CRW	enclosures & field system	40	B	TF 2241
DBA.EM	NMR	OB.AP: TF2241/11; ?; ?	possible oval enclosure	40	C	TF 2241
DBA.EN	NMR	OB.AP: TF2241/1; 03/03/77; CAP	ditches and ?enclosure	40	D	TF 2241
DBA.EO	B.GAS 1996	V.AP: 7/5361-2; 08/96; AERO	enclosures & ?trackway	40	B	TF 2240
DBA.EP	NMR	OB.AP: TF2239/2; 03/03/80; CRW	linear feaure: ?RB road/pipeline	40	C	TF 2239
DBA.EQ	NMR	V.AP: 457/3082; 30/08/46; CRW	ditch	40	D	TF 2338
DBA.ER	B.GAS 1996	V.AP: 6/5439; 08/96; AERO	enclosure	41	C	TF 2336
DBA.ES	B.GAS 1996	V.AP: ?/5348; 08/96; AERO	enclosures	41	C	TF 2535
DBA.ET	NMR	V.AP: 457/4037; 30/08/46; CRW	ridge and furrow	41	D	TF 2534
DBA.EU	B.GAS 1996	V.AP: 6/5345; 08/96; AERO	enclosures and ditches	41	C	TF 2633
DBA.EV	B.GAS 1996	V.AP: 6/5345; 08/96; AERO	?Med fishponds	41	B	TF 2733
DBA.EW	NMR	V.AP: 8176/193; 30/06/76; BG	former river channels	42	D	TF 2930
DBA.EX	CUCAP	OB.AP: BKX 100; 1972	parallel linear features: ?ditch	43	D	TF 2726
DBA.EY	NMR	V.AP: 9231/31; 04/06/65; CRW	?ditches and tracks	43	D	TF 2823
DBA.EZ	NMR	OB.AP: TF2722/3; 27/06/79; CRW	ring ditch	44	B	TF 2722

APPENDIX 4 : Desk-Based Assessment Sites

DBA CODE	SOURCE LOCATION	SOURCE DETAILS	DESCRIPTION	MAP NO	CATEGORY	NGR
DBA.FA	NMR	OB.AP: TF2722/3; 27/06/79; CRW	?enclosure	44	C	TF 2722
DBA.FB	NMR	OB.AP: TF2822/2; 04/03/80; CRW	4 ring ditches and ditches	44	B	TF 2822
DBA.FC	NMR	OB.AP: TF2922/2-8; 03/06/80; CRW	6 ring ditches, enclosure & ditch	44	B/C/D	TF 2922
DBA.FD	NMR	OB.AP: TF2922/1; 27/06/79; CRW	oval enclosure & ?trackway	44	C	TF 2922
DBA.FE	NMR	OB.AP: TF3021/1; 27/06/79; CRW	parallel ditches: ?trackway	44	C	TF 3021
DBA.FF	NMR	OB.AP: TF3021/3-5; 15/04/82; CRW	?enclosure and trackway	44	C	TF 3021
DBA.FG	NMR	OB.AP: TF3621/3; 21/07/81; CRW	?enclosure & ditches	45	C	TF 3621
DBA.FH	NMR	OB.AP: TF3621/2; 23/07/79; CRW	ring ditch	45	B	TF 3621
DBA.FI	NMR	OB.AP: TF3621/1; 27/06/79; CRW	3 ring ditches	45	B	TF 3621
DBA.FJ	NMR	OB.AP: TF3521/2; 23/07/79; CRW	enclosures and trackways	45	B	TF 3621
DBA.FK	B.GAS 1996	V.AP: 3/5294; 08/96; AERO	?square enclosure	45	C	TF 3520
DBA.FL	NMR	OB.AP: TF3621/11-13; 21/07/81; CRW	?enclosures	45	C	TF 3621
DBA.FM	NMR	OB.AP: TF3621/16; 21/07/81; CRW	?enclosure	45	C	TF 3721
DBA.FN	CUCAP	OB.AP: CLD 7-9; 29/10/79	5 circular & 2 linear depressions	46	C	TF 3721
DBA.FO	B.GAS 1996	V.AP: 2/5273; 08/96; AERO	?enclosure or geological feature	47	C	TF 4416
DBA.FP	NMR	V.AP: 5420/157; 10/06/69; CAM	?ditch	47	D	TF 4415
DBA.FQ	Camb R.O	O.S 25" 1st; 1886; IV.3 Fourgotes	'Roman Bank' ?RB sea defence	47	C	TF 4415

AERIAL PHOTOGRAPH (AP) SOURCE KEY:

NMR	National Monuments Record, Swindon
CUCAP	Cambridge University Committee for Aerial Photography
B.GAS 1996	Commissioned by British Gas for proposed Bishop Auckland to Wisbech pipeline

Explanation of source details:

NMR	vertical / library number and frame number(s) / date taken / copyright

APPENDIX 5

Parishes by County and District along the Proposed Route

COUNTY DURHAM (3 Districts, 12 Parishes; 21km):

Sedgefield	Chilton, Ferryhill, SpennyMoor, Windlestone, Shildon
Wear Valley	Bishop Auckland U.D
Darlington	Heighington, Coatham Mundeville, Archdeacon Newton, Walworth, High Coniscliffe, Low Coniscliffe

NORTH YORKSHIRE (5 Districts, 63 Parishes; 119km):

Richmondshire	Manfield, Barton, Newton Morrell, Middleton Tyas, Moulton, Uckerby, Scorton, Bolton on Swale, Ellerton on Swale
Hambleton	Whitwell, Kiplin, Great Langton, Little Langton, Thrintoft, Yafforth, Ainderby Steeple, Warlaby, Newby Wiske, Maunby, South Otterington, Newsham with Breckenbrough, Sandhutton, Carlton Miniott, Skipton on Swale, Catton, Topcliffe
Harrogate	Rainton with Newby, Asenby, Dishforth, Norton le Clay, Kirby Hill, Milby, Ellenthorpe, Boroughbridge, Marton cum Grafton, Great Ouseburn, Little Ouseburn, Dunsforths, Whixley, Cattal, Thornville, Kirk Hammerton, Tockwith, Bilton in Ainsty, Long Marston
Selby	Healaugh, Catterton, Steeton, Bolton Percy, Ryther cum Ossendyke, Church Fenton, Biggin, Sherburn in Elmet, Cawood, Hambleton, Gateforth, Birkin, West Haddersley, Burn, Temple Hirst, Camblesforth, Carlton
Ryedale	Newland

EAST RIDING OF YORKSHIRE UNITARY AUTHORITY (formerly South Humberside, Boothferry South District) (1 Division, 5 Parishes; 14km):

Goole Division	Rawcliffe, Airmyn, Goole Fields, Swinefleet, Reedness

NORTH LINCOLNSHIRE UNITARY AUTHORITY (formerly South Humberside, Boothferry South and Glanford Districts) (10 Parishes, 19km):

Easttoft, Crowle, Luddington and Haldenby, Amcotts, Keadby with Althorpe, Gunness,Burringham, East Butterwick, Messingham, Kirton in Lindsey

LINCOLNSHIRE (4 Districts, 54 parishes; 123km):

West Lindsey	Scotter, Scotton, Grayingham, Blyborough, Snitterby, Bishop Norton, Glentham, Caenby, Normanby-by-Spital, Toft Newton, Faldingworth, Snarford, Snelland, Stainton by Langworth, Newball, Barlings, Fiskerton
North Kesteven	Heighington, Washingborough, Branston & Mere, Potterhanworth, Nocton, Dunston, Metheringham, Blankney, Martin, Timberland, Scopwick, Rowston, Digby, Dorrington, Ruskington, Anwick, Ewerby & Evedon, Asgarby & Howell, Heckington, Great Hale
Boston	Swineshead, Bicker, Wigtoft, Sutterton
South Holland	Donington, Gosberton, Surfleet, Weston, Spalding UD, Moulton, Whaplode, Holbeach, Fleet, Gedney, Sutton St James, Long Sutton, Tydd St Mary

CAMBRIDGESHIRE (4.5km):

Fenland District	Tydd St Giles, Newton