

Northern Archaeological Associates

**NEW WATER PIPELINE, NORTON BACON FACTORY
NEAR MALTON, NORTH YORKSHIRE**

**GEOPHYSICAL SURVEY AND
ARCHAEOLOGICAL MONITORING**

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LAING O'ROURKE
on behalf of
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Summary

A limited geophysical survey was undertaken in advance of the construction works for a new potable water main to the south-east of Norton, near Malton, North Yorkshire. Archaeological monitoring was subsequently undertaken during the groundworks associated with the scheme. The geophysical survey was carried out within a small area of rough ground alongside the car park for the Norton Bacon factory. The work subject to archaeological monitoring comprised topsoil stripping of a 3m wide corridor over a distance of 1.5km and the excavation of a launch and reception pit for directional drilling. The groundworks were located in two fields to the south-east of Norton, on either side of Beverley Road.

The geophysical survey did not identify any features of archaeological interest, demonstrating that the ground had recently been disturbed to a significant depth such that archaeological anomalies would not be discernible.

Field 1 was located to the south-west of Beverley Road, east of Howe Hill and revealed three ditches and two shallow depressions, probably cultivation terraces. Romano-British pottery was recovered from the fill of one ditch, and prehistoric flints and Roman coins were recovered from the topsoil. The ditches were apparently part of a Romano-British field system relating to features identified from cropmarks to the north and east of Howe Hill. The limited artefactual evidence suggests that the features were peripheral to an area of settlement.

Field 2 was located to the north-east of Beverley Road and revealed post-medieval boundary ditches, one relating to a former parish boundary, and field drains.

Excavation of a launch pit for directional drilling, close to the route of the Roman road, identified no archaeological features or artefacts.

1.0 INTRODUCTION

- 1.1 This document sets out the results of a geophysical survey in advance of works and archaeological monitoring (a 'watching brief') during groundworks associated with the construction of 1.5km of new potable water pipeline between a reservoir at Howe Hill (SE 805 702) and Norton Bacon Factory (SE 795 714), to the east of Norton, near Malton, North Yorkshire (Figure 1). Construction of the northernmost section of pipe route, within the roadway of the modern industrial estate, was not monitored. The geophysical survey was undertaken in January 2005 by GSB Prospection and the monitoring was undertaken in February and March 2005 by

Northern Archaeological Associates (NAA) for Laing O'Rourke on behalf of Yorkshire Water Services Ltd.

- 1.2 The geophysical survey and monitoring of groundworks were undertaken to accord with Yorkshire Water's general duties in respect of conservation as required by the Water Act (HMSO 1989). The work was carried out in accordance with the relevant code of practice issued by the Institute of Field Archaeologists (IFA 1999) and as agreed by North Yorkshire County Council.

2.0 LOCATION, TOPOGRAPHY AND GEOLOGY

- 2.1 Malton and Norton are located on either side of the River Derwent approximately 30km to the north-east of York and a similar distance from the east coast of Yorkshire. Norton, to the south of the river, lies on the shallow valley floor at a height of 20m OD. To the south of the town the land rises to form the northern limit of the Yorkshire Wolds
- 2.2 The new pipeline is located to the east of Norton, running from a reservoir at Howe Hill to a junction with another pipe along the north side of Norton Industrial Estate (Figure 2). The pipeline route is entirely within Norton parish in the district of Ryedale. The area of archaeological monitoring was located in the two arable fields to the south-east of Norton, on either side of the B1248 Beverley Road. To minimise the impact of the work, a corridor measuring only 3m wide was stripped of topsoil over a distance of 1.5km. This width was sufficient to facilitate the machine-laying of the pipe. At the northern end of the stripped corridor, the pipeline was installed by directional drilling via launch and reception pits so as to avoid the route of a Roman road.
- 2.3 The solid geology of the area consists of Upper Jurassic Kimmeridge clays with outcrops of Corallian limestone (BGS 1979). One such outcrop has created the prominent hill to the south of Norton called Howe Hill. The local soils are mapped as coarse loamy soils of the Landbeach association, derived from the chalky gravels (Jarvis *et al* 1984, 230-31).

3.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prehistoric

- 3.1 Malton lies close to the southern edge of the Vale of Pickering, which was occupied by a lake during the Early Mesolithic period. While little Mesolithic material has been recovered from Malton or Norton, scatters of later Mesolithic flints have been found on the moors to the north and the wolds to the south (Robinson 1978, 3). The wolds were also frequented during the Neolithic period, when several long barrows were constructed. The nearest to Norton were at West Lutton, approximately 10km to the east (Stoertz 1997, 22-3). Several polished stone axes have also been discovered at Malton and Norton from sources as distant as Cumbria and South

Wales (Robinson *loc. cit.*). These may represent deliberate deposition or casual losses.

- 3.2 The Bronze Age in the vicinity of Malton is represented by a number of ring ditches identified from cropmarks on aerial photographs. These are likely to represent the remains of ploughed-out round barrows, similar to a group of tumuli disturbed by the construction of the Thirsk to Malton Railway through the centre of Malton in the 19th century (Robinson 1978, 3–4). These latter mounds contained both cremations and complete burials, along with sherds of pottery and flint tools. At the southern end of the water pipeline route within field 1, Howe Hill (now the site of a service reservoir) was once occupied by three tumuli (Site a, Figure 2). No further details of these were recorded at the time of their destruction in 1833. It is possible that some of the circular cropmark features to the north of Howe Hill (Site d) represent ploughed-out Bronze Age burial mounds.
- 3.3 Later Bronze Age artefacts including bronze axes and spear heads have also been recovered from the Malton area.

Iron Age and Roman

- 3.4 Two significant groups of Iron Age features exist within the vicinity. A number of multiple-ditch cropmarks forming linear boundaries are believed to be of Iron Age date. The best preserved of these is the 'Three Dykes' system, which survives in part as earthworks to the south and east of the development area (Site b, Figure 2). These dykes run northwards to the eastern end of Howe Hill, then turn north-eastwards and subsequently north-westwards to pass to the north-east of Norton. Alongside the multiple ditch boundaries are the cropmarks of a double ditch, possibly a trackway (Site c), which heads towards a series of small enclosures alongside the Three Dykes (Site d). In field 1 to the north of Howe Hill reservoir are a group of square barrow burial mounds (Site e), visible only as cropmarks on aerial photographs. A further four isolated square barrows were recorded in field 2 from cropmarks alongside Three Dykes (Site f), although these were not identified during the Wolds Survey (Robinson 1978, 33) Such features are mostly found within the eastern parts of Yorkshire, especially in the valley of the Gypsy Race, 15km to the south-east.
- 3.5 Malton was the location of an early Roman fort (AD 79) and vicus, or civilian settlement. The fort was subsequently rebuilt several times and was in use throughout the Roman period (Wenham, 1974). Norton, on the opposite side of the River Derwent, was the site of the Roman town *Derventio*. Excavations within several areas of Malton and Norton have revealed Roman remains, including the vicus of the fort and a group of Crambeck-ware pottery kilns in Norton, approximately 1km to the west of the pipeline route (*loc cit*). Roads led from Malton eastwards towards villas near Bridlington (Site g); north-eastwards towards the signal stations at Filey and Scarborough; westwards towards the Roman city of York (*Eboracum*) and southwards to the forts at Stamford Bridge, Hayton and Brough-on-Humber.

Medieval

- 3.6 Both Malton and Norton derive their names from Old English, indicating that occupation in some form continued during the six and a half centuries between the Roman period and the Norman conquest. Malton was recorded as *Maltune* in the Domesday Survey, the name meaning either 'farmstead where an assembly was held' or 'middle farmstead' (Mills 1991, 221). Norton was recorded as *Nortone*, 'north farmstead' (Mills 1991, 245) and has since absorbed its counterpart, the south farmstead (Sutton) although Sutton Grange survives (SE 795 705). Cornmills were recorded in the Domesday Survey at both settlements, and Anglian artefacts have been identified on the site of the fort at Malton and in the field to the north of Howe Hill.
- 3.7 In the wider landscape, a large number of Anglian sites have been identified along the ridge between Heselton and Staxton, 10km to the east of Malton. These include inhumation cemeteries, buildings and roadways forming a complex landscape with prehistoric origins and elements of Romano-British occupation also surviving.
- 3.8 The medieval village of Norton consisted of houses along either side of Church Street and Commercial Street, the church and hospital of St Nicholas and a moated manor house located close to Malton Bridge (Robinson 1978, 16).
- 3.9 Malton Castle was constructed in the 12th century on a site adjacent to the Roman fort. The new town developed along the north side of the River Derwent to the east and west of the castle (*ibid*, 13). There was also a priory, presumably within the vicinity of St Leonard's Church, which was granted to the Gilbertine order in the 1150s. A town wall was erected in the 13th century but has been almost entirely dismantled, although its route is preserved by the layout of many of the town centre streets. The castle was destroyed by Robert Bruce in 1322.

Post-medieval

- 3.10 The gradual expansion of Malton and Norton continued through the post-medieval period (Robinson 1978, 17-19). Malton town walls were rebuilt during the English Civil War, but thereafter fell into decay. Trade by river increased the expansion of both towns towards the Derwent during the 18th and 19th centuries, but the arrival of the railways in the 1840s ended the river's dominance in the movement of goods. Malton continued to prosper as the region's principal market town and offshoots of its main industries (markets, mills and breweries) spread into Norton.

Archaeology within the immediate vicinity of the pipeline route

- 3.11 The pipeline route starts in field 1 close to the reservoir on Howe Hill, which was the site of three tumuli (Site a on Figure 2) that were destroyed by the construction of an earlier reservoir during the 19th century. It then passes close to one of the sections of 'Three Dykes' multiple ditch system (Site b) to the east of Howe Hill and crosses the end of a double linear cropmark (Site c) to the north-east of Howe Hill, possibly a trackway leading to a series of enclosures (Site d). To the west of the

route is an Iron Age square barrow cemetery (Site e). North of the Beverley Road, in field 2, the route runs close to four isolated square barrows (Site f) and a second section of the Three Dykes boundary (Site b), crosses the route of the Roman road (Site g) and the former parish boundary (Site h). The final section of the route is within the roadway of the modern industrial estate and its construction was not monitored.

4.0 AIMS AND OBJECTIVES

4.1 The geophysical survey was intended to locate the remains of the Roman road and any associated features so that the pipeline could be drilled beneath without having adverse effects on the archaeology.

4.2 The archaeological monitoring aimed to identify and record any structural remains or significant deposits of archaeological interest revealed within the areas of topsoil stripping for the pipe trenches or within the launch and reception pits. The works had the following specific objectives:

- to investigate and record any archaeological features identified during the course of topsoil stripping prior to construction works and recover any associated artefacts
- to establish the location, date and nature of any areas of archaeological activity and assess the degree of preservation of any remains encountered
- to prepare an illustrated report on the results of the monitoring to be deposited with the North Yorkshire Historic Environment Record
- if appropriate, to prepare a report on the results of the excavation of any significant archaeological remains to be published in a local, regional or national journal

5.0 METHODOLOGY

Geophysical survey

5.1 A T-shaped area measuring 120m north to south by up to 60m east to west was laid out in 20m x 5m grids. The centre of the area was located over the assumed route of the Roman road. The area was surveyed using a Bartington Grad 601-2 gradiometer and the results collated and interpreted using computer software. The results were presented in a variety of display modes to maximise the interpretive value.

Archaeological monitoring

5.2 The two areas of topsoil within arable fields were stripped to natural subsoil using a JCB excavator with a ditching bucket, under the supervision of the monitoring

archaeologist. Construction work then ceased until the monitoring archaeologist was satisfied that any archaeological remains had been fully recorded.

5.3 The excavation of the launch and reception pit for the directional drilling was also carried out under the supervision of the archaeologist.

5.4 Archaeological features were recorded using the standard NAA recording system and photographed at 35mm format. Sections of the significant features were drawn and a site plan was produced indicating the positions of the trenches and features.

6.0 RESULTS

Geophysical survey

6.1 The results of the survey were magnetically confused and indicated a much-disturbed site (Figure 3). Nearby metal storage-tanks and vehicles parked outside the survey area have added to the magnetic noise. In such circumstances, and especially in view of the very small area available for survey, it was very difficult to interpret the results. While some of the anomalies could have been archaeological, the lack of a wider context made such an interpretation impossible. It would seem more likely that they reflected disturbed ground, perhaps a result of the dismantled railway line.

6.2 As the route of the Roman road had not been identified, it was decided that the entire 200m section of pipeline alongside the car park would be constructed using directional drilling. One launch pit was within close proximity to the assumed route of the Roman road and its excavation was monitored.

Archaeological monitoring

Field 1

6.3 The pipeline route within Field 1 ran north-eastwards from the eastern end of Howe Hill (Plate 1), turned north-westwards until it reached Beverley Road (Figure 2). Undisturbed natural deposits (12) were exposed at a depth of between 0.30m and 0.40m. At the top of the ridge leading to Howe Hill reservoir the natural horizon consisted of an outcropping of fractured limestone bedrock. On the slope leading up towards the reservoir the natural consisted of a lighter, yellowish brown, sand containing up to 25% limestone grit and pebbles. The natural deposits on the slope were sealed by a brown, slightly clayey sand subsoil (11) which was generally up to 0.12m thick and yielded a single undiagnostic sherd of medieval pottery. Along the side of Beverley Road the undisturbed natural was a reddish brown sand containing occasional small stones. The subsoils were sealed by a dark brown loam topsoil (10) containing a range of artefacts. Earliest in date were four flints including a late Neolithic or early Bronze Age flake and an early Bronze Age scraper. There were also sherds of pottery dating from the Roman period up to modern times. Of the Romano-British pottery, there were sherds of 3rd- to 4th-century greyware and a single sherd of pre-mid 3rd century Samian ware. Later pottery included 13th- to

15th-century medieval material and a sherd of 17th-century Ryedale ware (Appendix C).

- 6.4 At the southern end of field 1 the limestone bedrock was cut by a ditch (01) on an east to west alignment, running along the crest of the ridge (Figure 4). Ditch 01 was 0.82m wide and 0.47m deep (Plate 2). Downslope and 5m to the north of the ditch was a gully (02), 0.67m wide and 0.13m deep and cut into layer 12. The two features were filled with a mid-brown sandy soil (06) which contained no artefacts. No date could be attributed to these features.
- 6.5 Approximately 70m downslope from ditch 01 was a second ditch (03), aligned north-east to south-west and up to 3.8m wide and 0.68m deep with shallow-sloping sides and a rounded base (Plate 3; Figure 4). The brown clay lower fill (09) contained Romano-British pottery including calcite-gritted ware dating from the 2nd- to 4th-centuries, and pre-mid 3rd-century greyware. The upper fill (13) was virtually indistinguishable from subsoil 11 although this also contained calcite-gritted Romano-British pottery.
- 6.6 Immediately south (uphill) of ditch 03 were two wide features. A depression (04) was 2.70m wide and up to 0.27m deep. The fill was a yellow sand (08) that was different from subsoil 11 which sealed it. Uphill of depression 4 was a linear feature (05) with a flat base, 8.40m wide and up to 0.65m deep, which cut into the slope of the hillside on an approximate north to south alignment. The fill of this feature was indistinguishable from subsoil 11. Both features were aligned approximately with the contour of the slope, and the larger (05) was interpreted as a cultivation terrace or lynchet. Neither yielded any artefacts, but they are more likely to represent medieval or later agricultural activity than Romano-British.
- 6.7 A variation in the land surface was visible running across the field near the bottom of the slope broadly parallel with Beverley Road. In this area the depth of topsoil increased to 0.35m and the thickness of the subsoil increased to 0.75m. These changes were interpreted as resulting from the ploughing of soil down onto a now-removed field boundary (14).
- 6.8 The stripped area and spoil heap of field 1 were surveyed with a metal detector and a number of Roman coins and metal artefacts were recovered from the upcast topsoil (15) and from within, or in very close proximity to, identifiable plough scars in the surface of the otherwise undisturbed natural (Appendix D). The coins were too worn to accurately date but were probably from the 3rd- or 4th-century. Of the other artefacts, a hollow copper alloy bead and a copper alloy and iron buckle might have been of Roman origin. Two copper coins and a lead shot were of post-medieval date.

Field 2

- 6.9 Field 2 ran north-eastwards from Beverley Road to the car park of Norton bacon factory (Figure 2). The undisturbed natural, at a depth of between 0.20m and 0.25m, consisted of yellow sand (22) containing occasional pockets and larger patches of gravel. There was no subsoil along the length of field 2 and the undisturbed natural

was sealed by a topsoil of dark brown loam (21). Removal of the topsoil exposed a series of shallow clay 'horse shoe' field drains, the gravel-filled cuts for modern land drains, plough scars in alignment with the existing crop, and five ditches or gullies. None of the features yielded dating evidence.

- 6.10 The largest ditch (16) was aligned north-west to south-east and corresponded with a former parish boundary (Site h) indicated on historic mapping (Robinson 1978, 39). Ditch 16 was up to 1.18m wide with a depth of 1.05m (Plate 4). This was filled with mixed, yellowish-brown clay sand (18) contained fragments of clay 'horse shoe' field drain. To the north of ditch 16 a second, smaller, ditch (19) was aligned north-east to south-west and corresponded with a surviving length of hedgerow to the north-east. This probably represented a removed section of the field boundary. Ditch 19 was 1.35m wide and 0.40m deep.
- 6.11 In the area to the south of ditch 16 two gullies were aligned north-east to south-west (23 and 24). Each was approximately 0.60m wide and 0.40m deep and contained a clay land-drain. To the north of ditch 16 a similar ditch (25) on a north-west to south-east alignment also contained a clay land-drain.

Launch pit

- 6.12 The launch pit was located in an area of waterlogged scrubland, south-west of the car park for Norton bacon factory. The natural soils were a greenish grey sandy clay deposit at 0.90m overlain by 0.35m of yellow and brown clay sand with pockets of gravel. Overlying the natural subsoil was 0.35m of dark brown loam topsoil. There were no artefacts and no archaeological features were exposed.

7.0 DISCUSSION

- 7.1 The geophysical survey was unable to identify the route of the Roman road or any associated features. The amount of previous disturbance together with the magnetic response from the metal tanks and parked cars meant that any anomalies could not be interpreted with any degree of confidence.
- 7.2 A total of four flints recovered from the topsoil in field 1 on the south-western side of Beverley Road indicated that there had been activity in the area during the later Neolithic and early Bronze Age. The small number of such artefacts prevented further interpretation.
- 7.3 Topsoil stripping along the line of the new water main within field 1 revealed a number of archaeological features. The only feature which might reasonably be dated was a large ditch running approximately east to west at the foot of the slope of Howe Hill. The ditch was relatively shallow-sided, suggesting that it had not served any defensive purpose. The two layers of ditch fill yielded Romano-British pottery, while Roman coins and other metal artefacts were recovered from the adjacent topsoil and spoil heaps using a metal detector. Along the crest of the ridge continuing eastwards from Howe Hill were a ditch and gully running approximately

east to west. The ditch was cut into the corallian limestone of the ridge. No dating evidence was revealed for these features, but as they were parallel to the Romano-British ditch at the bottom of the slope it is plausible that they were contemporary features.

- 7.4 The three ditch features can be interpreted as part of a Romano-British field system relating to features identified from cropmarks to the north and east of Howe Hill. The ditches did not, however, correspond directly with any recorded cropmark, indicating that the archaeology was more extensive than had been previously identified. No features were identified during soilstripping to account for the double linear cropmark (Site c), suggesting that more recent ploughing has been deeper and has removed the underlying archaeology. It is likely that the adjacent square barrow cemetery will have been similarly affected.
- 7.5 The pottery from the earlier fill of the large ditch was dated to before the mid 3rd-century, while the later fill of the ditch and the overlying topsoil yielded sherds from the 2nd- to 4th-centuries. This would imply that activity occurred throughout the later Romano-British period. Coins of Roman date and metalwork were recovered from the topsoil, and discussions with a local metal detectorist revealed that previously a large number of Roman and Anglo-Saxon artefacts had been recovered from the same field. This suggests that manuring activities at least continued into the post-Roman period.
- 7.6 On the north-east slope of Howe Hill were a shallow depression and lynchet on an approximate north to south alignment, along the contour of the hill. While it is possible that these features were also Romano-British, it is more likely that they were medieval or post-medieval cultivation terraces.
- 7.7 To the north of Beverley Road topsoil stripping exposed a ditch associated with the parish boundary and a second ditch marking the line of a now-removed field boundary. Topsoil stripping also exposed two separate field drainage systems constructed of 'horse-shoe' and cylindrical clay land-drains respectively.

8.0 ASSESSMENT OF THE SITE ARCHIVE

Initial analysis

- 8.1 As part of the assessment of the site records the following level of analysis has been undertaken:
- 8.2 A provisional matrix has been drawn up for the site showing the stratigraphic relationships between the individual contexts. Initial dating from the recovered artefacts has been integrated into the matrix in order to allow the features to be divided into chronological periods.

8.3 Plans and sections were checked against context record sheets to ensure full cross-referencing. Catalogues of context and illustration records and slide and print photographs have been input onto a computerised database.

8.4 The quantification of the site record is as follows:

Table 1: Primary archive inventory

Context descriptions	28
Plans	2
Sections	3
Colour slides (films)	2
Black and White photographs and negatives (films)	2

Table 2: Summary of contexts

Cut features	12
Fills of features	10
Soils and subsoils	3
Natural deposits	2
Unstratified material	1

Recommendations for further analysis

8.5 No further work is required on the matrix for the site.

Storage and curation

8.6 The written, drawn and photographic records and the majority of the artefacts are currently held by Northern Archaeological Associates. The remaining artefacts are with the relevant specialists.

8.7 The retention and disposal policy for the assemblage from Norton Bacon Factory will involve keeping the relatively small quantity of artefacts. This is because some of the material is derived from secure contexts and the assemblage is important in local terms. The archive will be deposited with the Malton Museum.

9.0 SPECIALIST FINDS ASSESSMENTS

Processing and quantification

9.1 All artefactual material was cleaned and repackaged for specialist examination immediately after the conclusion of the fieldwork. All of the finds have been recorded, marked where appropriate, packed in labelled bags and placed in labelled museum storage boxes. The artefact assemblages are summarised below.

Table 3: Finds assemblage

<i>Artefact type</i>	<i>Quantity</i>
Flint	4
Pottery sherds	17
Metalwork	9

Flint (Peter Makey)

Summary

- 9.2 A total of four flints were recovered from topsoil (Appendix B). Two are undatable, but one is a core rejuvenation flake of later Neolithic to Early Bronze Age date, and the other is a Bronze Age scraper.

Archaeological potential

- 9.3 The assemblage is too small for any conclusions to be made, although the occurrence of the scraper is of note purely on the basis of its similarity to material from other local assemblages.

Recommendations

- 9.4 No further work on the assemblage is recommended.

Pottery (Peter Didsbury)

Summary

- 9.5 A total of seventeen sherds of pottery were recovered from four contexts (Appendix C). Material from the fill of one ditch was Romano-British, possibly from the 2nd- to 4th-centuries, while the remainder was a mixture of Romano-British and medieval or post-medieval.

Archaeological potential

- 9.6 These small assemblages are of little intrinsic interest or evidential value, though they do serve to indicate site activity resulting in ceramic deposition taking place from at least the earlier 3rd-century AD.

Recommendations

- 9.7 No further work is felt to be required. The material should be retained in an appropriate material archive, in the interests of future ceramic work in the region.

Metalwork (Sarah Wilkinson)

Summary

- 9.8 A total of nine metal objects were recovered from the topsoil, including four copper alloy Roman coins (Appendix D). These were too badly worn to accurately identify, although their size suggests a 3rd- to 4th-century date. One has been tentatively identified as a *Nummus* of the House of Constantine, mid 4th-century. A hollow copper alloy bead and a copper and iron buckle may also have been Roman, while two copper coins and a lead shot were post-medieval.

Archaeological potential

- 9.9 The Roman material is typical of finds previously identified within the fields alongside Beverley Road, and would concur with the interpretation of nearby cropmarks as representing the remains of a Romano-British settlement. The post-medieval finds are so widespread as to have little interpretive value.

Recommendations

- 9.10 All of the metalwork came from metal detecting of unstratified spoil heaps, therefore no further action is recommended. The material should be retained in an appropriate material archive in the interests of future research in the region.

10.0 CONCLUSION AND RECOMMENDATIONS

- 10.1 The monitoring of groundworks associated with a new water pipeline at Norton recorded part of a Romano-British field system in the form of shallow ditches, probably relating to cropmarks identified from aerial photographs. Pottery recovered from the fill of one ditch was identified as greyware dating from the 3rd- or 4th-century AD, while Roman coins and other metalwork were recovered from the proximity. The small assemblage of artefacts from the site suggests that the ditches were peripheral to, rather than part of, a settlement of later Romano-British date. The low status of the nearby settlement was confirmed by the presence of only a single sherd of Samian pottery within an assemblage of coarsewares. The site helps to confirm the interpretation of cropmarks within the area as representing part of the wider landscape of Romano-British settlements and field systems extending south-eastwards from the Roman settlement at Norton as far as Bridlington on the east coast.
- 10.2 It is felt that no benefit would be achieved by further analysis of the archive or artefactual evidence, although the work adds to the corpus of evidence for the occupation of this area of Yorkshire during the first few centuries AD. The artefactual evidence should be retained due to its local significance.

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Appendix A

CONTEXT AND FINDS CATALOGUE

Context	Field	Description	Flint	Pottery	Metalwork
1	1	Ditch along Howe Hill ridge			
2	1	Gully adjacent to 1			
3	1	Ditch at foot of slope			
4	1	Depression on hillside			
5	1	Lynchets south of 4			
6	1	Fill of 1 and 2			
7	1	Fill of 7			
8	1	Fill of 4			
9	1	Primary fill of 3		5	
10	1	Layer, topsoil	3	9	
11	1	Layer, subsoil		1	
12	1	Layer, natural			
13	1	Secondary fill of 3		2	
14	1	Field boundary			
15	1	Unstratified finds from topsoil heap			9
16	2	Ditch on line of Parish boundary			
17	2	Parish boundary			
18	2	Fill of 16			
19	2	Field boundary ditch			
20	2	Fill of 19			
21	2	Layer, topsoil			
22	2	Layer, natural			
23	2	Ditch for land drain			
24	2	Ditch for land drain			
25	2	Ditch for land drain			
26	2	Fill of 23			
27	2	Fill of 24			
28	2	Fill of 25			

Appendix B

FLINT ASSESSMENT

Peter Makey

1.0 Introduction

The archaeological monitoring produced a flint assemblage totalling four pieces (38.5g) of struck prehistoric flintwork. All four pieces came from the topsoil (context 10) of Field 1. The assemblage comprises a chunk, two tertiary flakes, and an end-and-side (right) scraper. The pieces are all consistent with domestic assemblages, although the assemblage is not homogenous; hence little further can be deduced. A database of the flint finds forms part of the site archive.

2.0 State

All the pieces are intact despite showing heavy traces of plough damage. Traces of white to grey patination and iron staining are present on all the pieces. On the scraper and on one of the flakes the degree of patina is light. The chunk (record 1) and remaining flake are heavily patinated. The heavily patinated flake (record 2) has been extensively rolled and could conceivably be of an earlier date than the remaining three pieces.

3.0 Knapping and raw materials

The raw material used was probably obtained from local glacial till sources. The scraper was manufactured on a fine-grained olive grey coloured till flint with a thin brown cortex. The remaining pieces have been manufactured on a slightly poorer quality, more granular flint.

Knapping has been conducted by the application of hard hammer stones, such as a small quartzite pebble.

A variety of knapping styles are evident, although all were apparently geared towards the production of small squat flakes less than 2cm long. Dihedral platform trimming is evident on one of the flakes (record 3).

The scraper has finely worked convex retouch. Each retouching edge removal is evenly spaced with sharp edge definition, almost giving a serrated appearance to the worked edge. The support for the scraper is a thin (c. 6mm) bulbar flake.

4.0 Use wear

The scraper has been heavily used but the nature of the use has been obscured by post depositional damage.

A degree of non-descript edge use is also present on one of the flakes (record 3).

5.0 Date

One of the flakes (record 3) is almost a core rejuvenation flake and is of later Neolithic to early Bronze Age character. The remaining flake and chunk are un-datable. The scraper (record 4) is of a form that is frequently found in the makeup of Bronze Age barrows in North and East Yorkshire. The scraper has similarities with the published assemblage from Hutton Buscel Barrow 2, North Yorkshire (Brewster and Finney, 1995, figs 41-43).

6.0 Archaeological potential

The assemblage is too small for any conclusions to be made, although the occurrence of the scraper is of note purely on the basis of its similarity to material from other local assemblages (see 5).

Bibliography

Brewster T C M and Finney A E (1995) *The Excavation of Seven Bronze Age Barrows on the Moorlands of North-East Yorkshire* Yorkshire Archaeological Report 1, YAS, Leeds.

Appendix C

POTTERY

Peter Didsbury

1.0 Introduction and methodology

A total of 17 sherds of pottery, weighing 375g, and having an average sherd weight of 25g, were submitted for assessment. There was also a single non-ceramic item, not weighed (see further below).

Material was quantified by the two measures of number and weight, according to fabric or material category within archaeological context. All data was entered onto an Access database, which is supplied as an integral part of this report, and which should be consulted where appropriate. Fabric codes employed in the database are set out in an appendix, below.

2.0 Discussion: the assemblages

Ceramic material was obtained from the fills of ditch 03, and from the subsoil and topsoil.

The lower fill (09) of ditch 03 contained a small assemblage comprising five sherds, weighing 162g. All the material was of Roman date, and derived from three greyware vessels and one calcite-gritted one. The greyware sherds were all jar/bowl bases. The fact that all had turned undersides, and one of them a marked basal chamfer, suggests that the material need not be later than the earlier part of the 3rd-century. The calcite-gritted material is of Romano-British rather than Iron Age date but cannot be dated more closely.

The upper fill (13) of the same ditch contained a large sherd from the shoulder of a fairly thick-walled jar in calcite-gritted ware. The vessel might be hand-made and clamp-fired, but would appear to be Roman rather than Iron Age in form. It is not typical of the latest calcite-gritted wares in the region (Huntcliff types), but could otherwise date to almost any part of the Roman period before the mid 4th-century. A small fragment of unglazed material, also present, is unattributed to period, and could be either Roman or medieval (see database for description). Fill 13 is indistinguishable from subsoil 11, which contained medieval material.

Subsoil 11 contained a single large sherd from an unattributed medieval jar base. The vessel has a hard, sandy, fully reduced fabric, with a red exterior. The fabric has characteristics of both the principal high medieval regional fabrics of East Yorkshire, *i.e.* Orangewares and Humberware, but is perhaps more reminiscent of the latter. A 14th- or 15th-century date for this vessel may be entertained, with the proviso that a post-medieval date is not out of the question.

Topsoil 10 contained the largest assemblage from the site, consisting of nine sherds, weighing 86g. As might be expected, it is of chronologically mixed composition, containing Roman, medieval, and post-medieval to early modern material. Amongst the Roman material may be mentioned a fragment of Samian, which *ipso facto* suggests site activity before the end of the Samian importation period in the mid 3rd-century; and sherds of

Crambeck greyware, conventionally held to have been produced from c. AD 270–280. Post-medieval to modern material comprised 17th-century Ryedale Ware, 19th-century Late Blackware, and a fragment of 19th-century 'Jasper' style fineware. The database may be consulted for full descriptions.

3.0 Conclusions and recommendations

These small assemblages are of little intrinsic interest or evidential value, though they do serve to indicate site activity resulting in ceramic deposition taking place from at least the earlier 3rd-century AD.

No further work is felt to be required.

The material should be retained in an appropriate material archive, in the interests of future ceramic work in the region.

Fabric codes employed in the database

Fabric nomenclature is largely generic or otherwise self-explanatory. Specific common names are in generally accepted regional or national use.

<i>Fabric code</i>	<i>Common name/remarks</i>
LBLAK	Late Blackware
MOD	Modern- 19th- to 20th-century
RCG	Roman calcite-gritted ware
RG	Roman greyware
RG1	Crambeck greyware
RS	Samian ware
RYED	Ryedale ware
UMED	Unattributed medieval wares
UNAT	Unattributed to period or fabric

Table C1. Pottery database

Id	Ctxt	Fabric	No	Wt (g)	Remarks
9	09	RCG	2	23	Joining body sherds, freshly fractured. Externally sooted The fabric is Romano-British rather than Iron age but the material is not otherwise closely datable. 2nd- to 4th-century.
8	09	RG	3	139	Basal sherds from three vessels. Bowl with well-smoothed interior, and 2 x jar/bowl. All bases have turned undersides, which might suggest a date before the mid 3rd-century. One displays a broad, shallow basal chamfer.
1	10	LBLAK	1	26	Closed-form base. 19th-century.
7	10	MOD	1	2	Small fragment 'Jasper' style fineware, probably 19th-century.
6	10	RG	2	19	Jar rim in sandy dark grey ware with brownish surfaces. Very dense fabric, so possibly later 4th-century. Also burnished blue-grey body from a different vessel. 3rd- or 4th-century?
4	10	RG1	2	14	Joining, freshly fractured, base sherds. Very abraded. Post c. AD 270/280.
3	10	RS	1	1	Fragment. Pre mid 3rd-century.
2	10	RYED	1	22	Internally glazed base sherd of large vessel. 17th-century.
5	10	UMED	1	2	Fine sandy fragment with red exterior and olive green glaze on interior. Reduced core. Not attributable to named fabric type or closely datable (but probably c. 13th- to 15th-century).
12	11	UMED	1	83	Jar base/lower body. Fully reduced ware with red exterior. Hard sandy fabric, nearer Humberware than Orangeware. 14th- to 15th-century, with the possibility of being post-medieval.
11	13	RCG	1	44	Neck/shoulder sherd of thick-walled jar, apparently clamp-fired and possibly hand-made. Not the latest (Huntcliff) type available in the region, but otherwise not closely datable. 2nd- to mid 4th-century.
10	13	UNAT	1	2	Unglazed body fragment, fine sandy fabric with oxidised surfaces and grey core. Either Romano-British or medieval.

Appendix D

METALWORK

Sarah Wilkinson and Jennifer Jones

1.0 Introduction

A total of 9 metal artefacts were recovered from the archaeological monitoring. All of the metalwork came from metal detecting of unstratified spoil heaps, therefore no further action is recommended.

Table D1. Summary of metalwork

Context	Finds code	Material	Object type	Artefact description	Period	Quantity	Wt (g)
15	AA	CuA	Coin	Near complete, no surface detail visible	Roman	1	2
15	AB	CuA	Coin	Complete, surface detail obscured	Roman	1	2
15	AC	CuA	Coin	Near complete, head and lettering faint, figure on obverse	Roman	1	2
15	AD	CuA	Coin	Quarter segment, lettering partially visible	Roman	1	1
15	AE	CuA	Bead??	Possible bead? or bullet??	Roman?	1	8
15	AF	CuA/Fe	Buckle	Tongue and plate only	Roman?	1	7
15	AG	CuA	Coin	George V one penny	Post-medieval	1	10
15	AH	CuA	Coin	George V one penny (probably) surface obscured	Post-medieval	1	8
15	AI	Pb	Shot	Used lead shot	Post-medieval	1	13

Key to materials: CuA-copper alloy; Fe-iron; Pb-lead

2.0 Discussion

The Roman material is typical of finds previously identified within the fields alongside Beverley Road, and would concur with the interpretation of nearby cropmarks as representing the remains of a Romano-British settlement. The Roman coins are badly worn and insufficient surface detail is visible to accurately date them, although their size suggests a 3rd- to 4th-century date. One has been tentatively identified as a *Nummus* of the House of Constantine, mid 4th-century (Philippa Walton, pers. com.). The post-medieval finds are so widespread as to have little interpretive value.

3.0 Quantification and Condition (Jennifer Jones)

Nine objects were received for examination and X-radiography. Seven were of copper alloy, one was copper alloy and iron and was one lead. Most of the material was found to be lightly or moderately corroded. Two of the coins were found to be highly corroded (15AA and AB). All the material appeared to be stable when examined. Lightly corroded metallic material is defined as having a thin, often compact corrosion surface, sometimes with good

patination, which obscures little of the object's form or surface detail. There is significant metal remaining below the corrosion surface. Moderately corroded metallic material is defined as having the surface detail, but not usually the general form of the object, obscured by corrosion products, and has some metal remaining below the corrosion. Highly corroded metallic material is defined as either having both the form and the surface detail of the object obscured by corrosion, and/or having little or no metal remaining in its core.

4.0 X-Radiography

The objects were sorted into groups of a similar density, which were X-rayed together. One XR plate was used. When viewing the XR plates, they should be orientated with the bright spot (a lead marker) in the top left hand corner, to correspond with the annotated XR sleeve. Details of the artefacts examined were entered into a database which includes the context and small finds number, an identification of the material and of the object, where possible, the condition of the object when examined, its XR plate number, and any technological or other observations.

5.0 Observations

Few of the coins show much surface detail on the XR plate – the exception being 15AG. The ?bead (15AE) is part filled with a black crystalline substance. Further work could perhaps identify this. The ?buckle (15AF) is made from CuA, with an iron pin in the hinge. The CuA buckle plates have an area of possible ?solder. This could be analysed using EDXRF. The buckle pin may have a decorated surface.

6.0 Storage

The material was received well packed for medium to long term storage. It should continue to be stored in an airtight container at a stable temperature and below 20% RH, to inhibit further corrosion. The RH should be controlled by active silica gel, which is regularly monitored and regenerated as necessary.

Table D2. Conservation assessment

Context	SF code	Material	Object	Condition	Quant	Observations	Xr no
15	AA	CuA	Coin	hc/st	1		5368
15	AB	CuA	Coin	hc/st	1		5368
15	AC	CuA	Coin	mc/st	1		5368
15	AD	CuA	Quarter coin	hc/st	1		5368
15	AE	CuA	?Part bead	mc/st	1	Black crystalline material inside	5368
15	AF	CuA/Fe	?Part buckle	mc/st	1	?Solder on CuA; ?decoration on pin; Fe hinge pin in CuA buckle	5368
15	AG	CuA	Coin	lc/st	1		5368
15	AH	CuA	?Button or coin	mc/st	1		5368
15	AI	Pb	?Shot	lc/st	1		none

Appendix E

GEOPHYSICAL SURVEY

GSB Prospection

1.0 General considerations - complicating factors

Conditions for survey were poor; the majority of the survey area totally overgrown with dense vegetation, tress, briars, small shrubs and bushes.

2.0 Results of magnetic survey

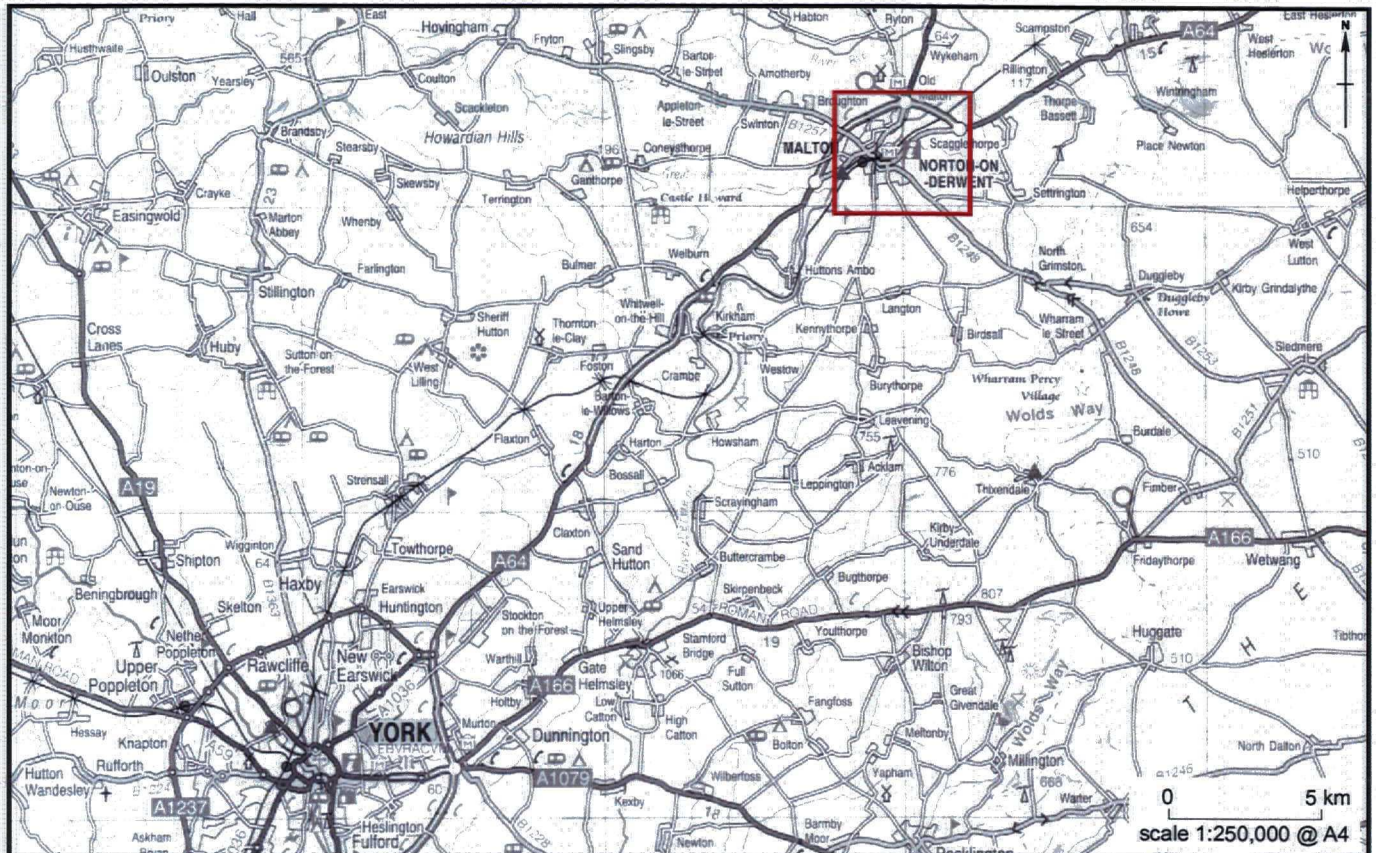
The results are magnetically very confused and indicate a much disturbed site (Figure 3). Nearby metal storage tanks and vehicles parked outside of the survey area, have added to the magnetic noise. In such circumstances, and especially in view of the very small area available for survey, it is very difficult to interpret the results.

While some of the anomalies could be archaeological the lack of a wider context makes such an interpretation impossible. It would seem more likely that they reflect disturbed ground, perhaps a result of the dismantled railway line.

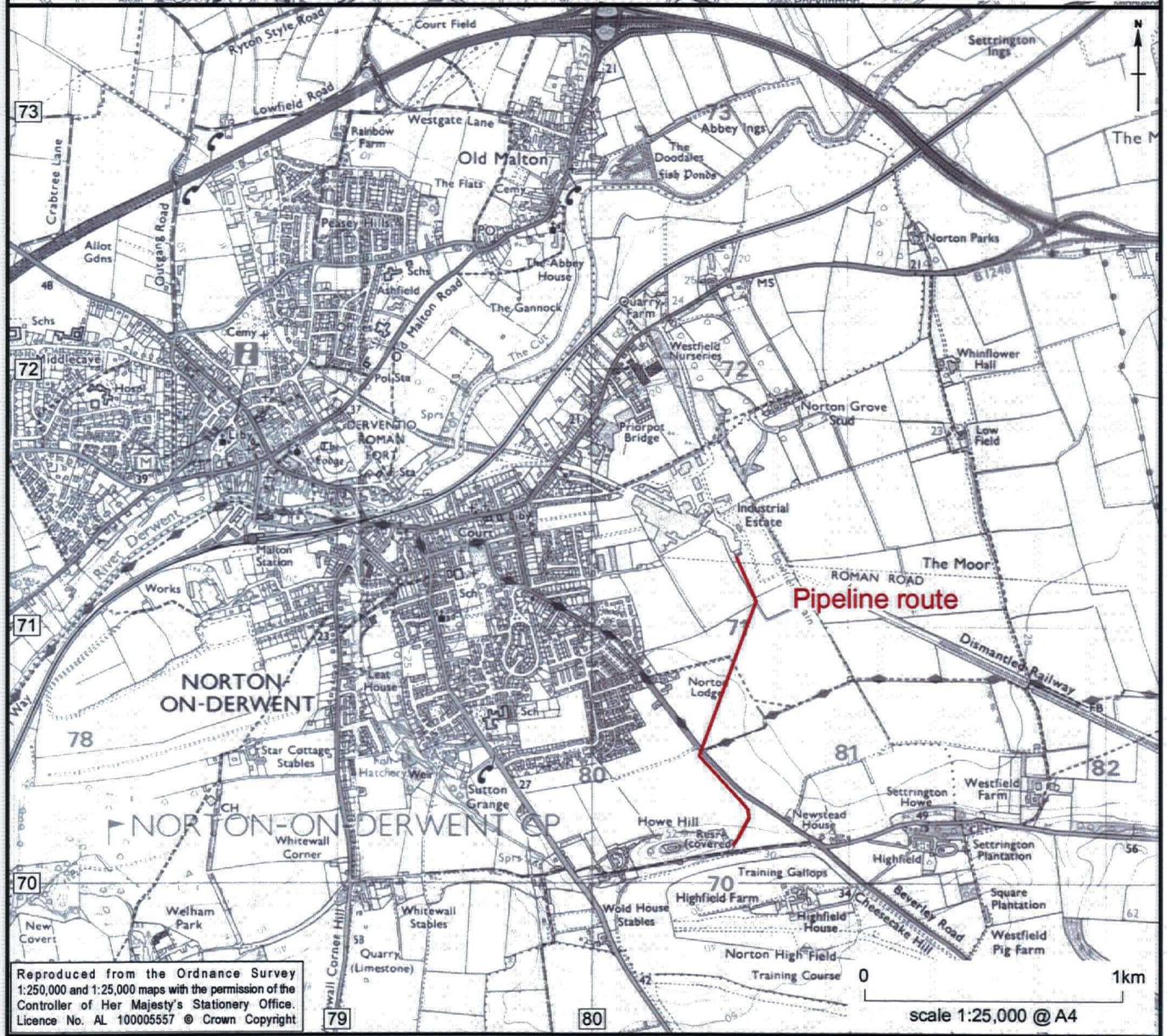
3.0 Summary and conclusions

The survey on the site of the proposed new factory has failed to produce any positive results due to overgrown vegetation and the modern disturbances.

Given the level of disturbance in the proposed development the only possible way to pinpoint the road using geophysical techniques would be to locate it in the field to the north and extrapolate its course. This assumes that the level of disturbance is less in this area.



0 5 km
scale 1:250,000 @ A4



Pipeline route

0 1km
scale 1:25,000 @ A4

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Figure 1 Norton Bacon Factory: pipeline route

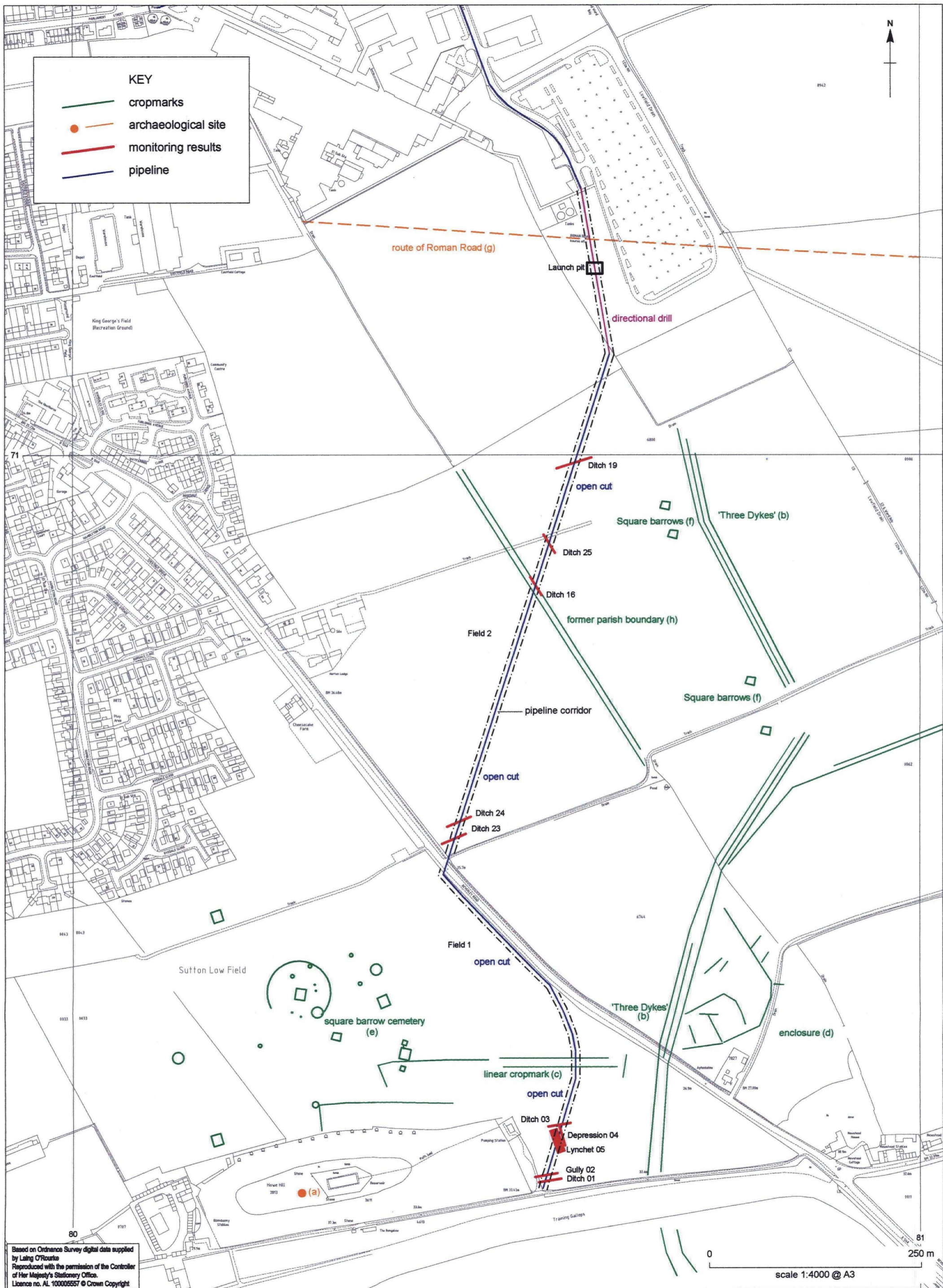
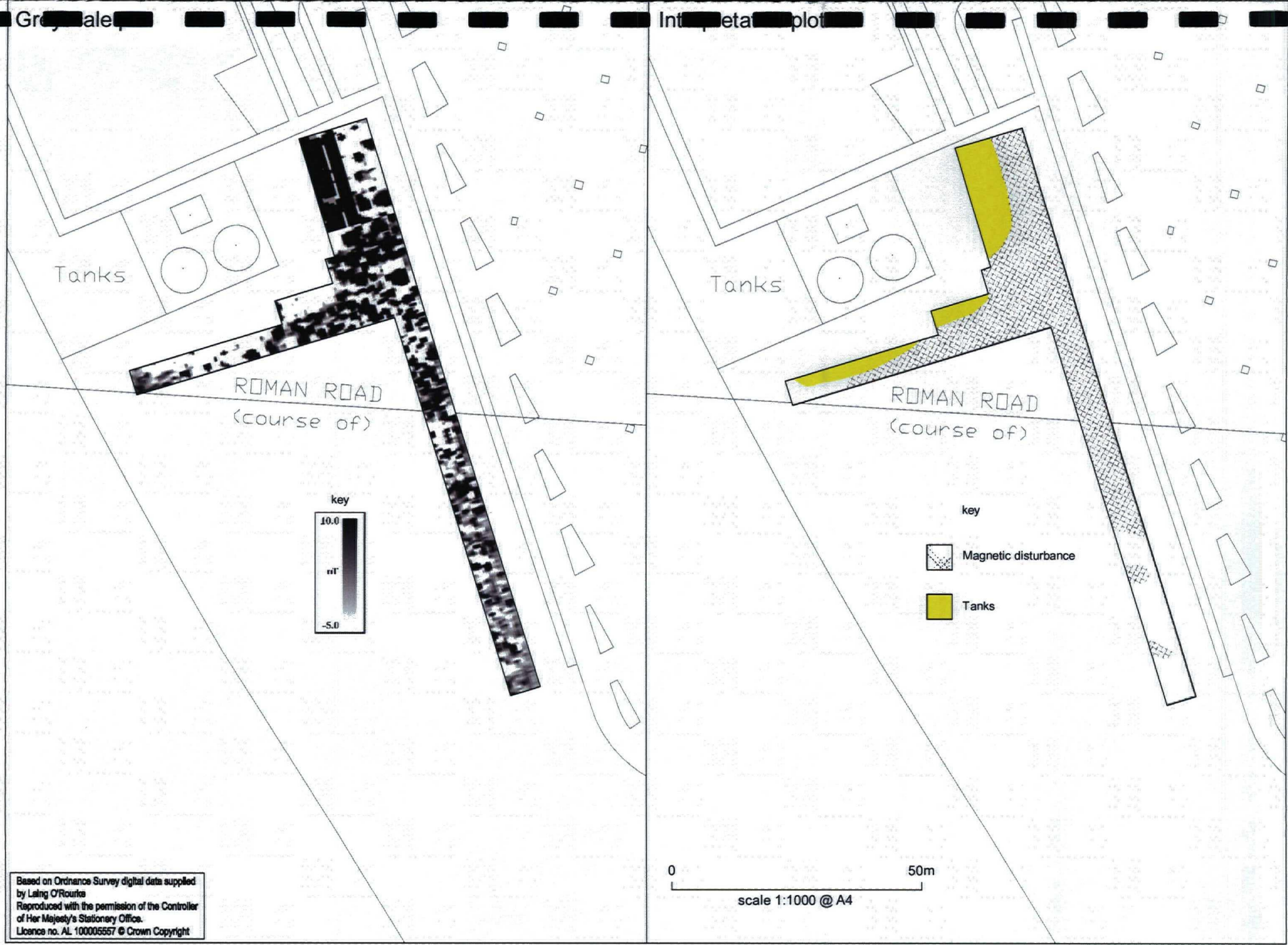


Figure 2 Norton Bacon Factory: pipeline route showing archaeological cropmarks and sites in the vicinity and features recorded during construction



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Figure 3 Norton Bacon Factory: geophysical survey results



Plate 1 Norton Bacon Factory: view of Howe Hill from the east



Plate 2 Norton Bacon Factory: rock-cut ditch (01)



Plate 3 Norton Bacon Factory: Romano-British ditch (03)

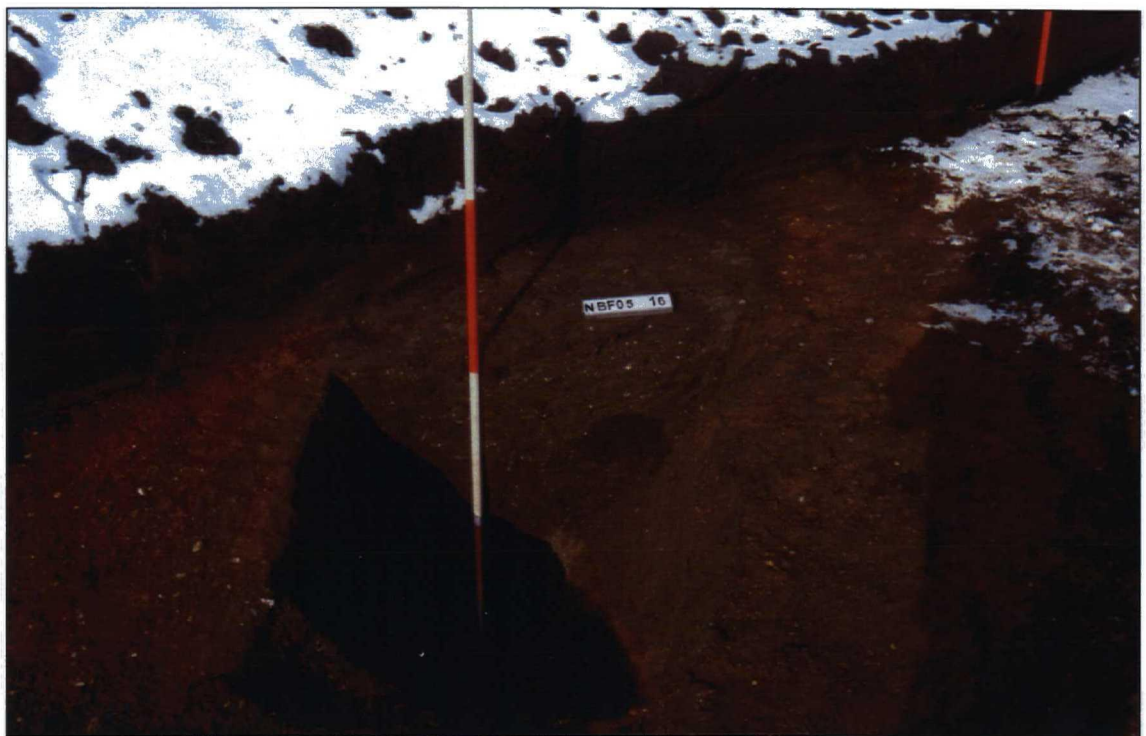


Plate 4 Norton Bacon Factory: former parish boundary ditch (16)

Northern Archaeological Associates

Archaeological Consultants

15 December 2006

Ref: NYCC/687/OC/1

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Dear Gail

NORTON BACON FACTORY

Please find enclosed a copy of the report for the geophysical survey and watching brief at the above site on behalf of Laing O'Rourke. You will be familiar with the background to the site, formerly known as *Malton* Bacon Factory.

The route was intended to avoid, as far as possible, the known cropmarks; the only apparent cropmark crossed by the easement was not identified during the monitoring. This was possibly due to recent deep ploughing, which may have similarly truncated the Square Barrows to the north-west! Roman coins and pottery were found in association with a number of previously unrecorded ditch features, their paucity suggesting enclosures or boundaries peripheral to the centre of occupation.

The geophysical survey was unable to prove anything, partly because the area available was much smaller than we had been informed, but also due to the amount of previous disturbance and the large signal produced by the cars and fuel tanks.

Yours sincerely



Oliver Cooper
Senior Project Officer

cc. Brent Eastell, Laing O'Rourke
enc

