LANTERN TARN BRAYSTONES

BECKERMET

Cumbria

Archaeological Survey and Evaluation

Interim Report

Oxford Archaeology North

October 2002

OAN Job No. L9099

United Utilities

NGR: NY 066 605

BRAYSTONES SURVEY AND EVALUATION INTERIM STATEMENT

1. INTRODUCTION

1.1 A programme of archaeological investigation was undertaken by Oxford Archaeology North (OA North) (formerly Lancaster University Archaeological Unit), near Lantern Tarn, Braystones, Cumbria (NY 0066 0605; Fig 1), on behalf of United Utilities. This followed on from an assessment of the site (LUAU 2001) and was undertaken in accordance with a project brief by Cumbria County Archaeological Service and a project design by OA North. The study area comprised an area of *c*500m around the proposed wastewater treatment works and associated outfall pipe, south-west of Braystones village. Four elements of field investigation were undertaken:

- an initial walk-over survey intended to identify any surviving remains of earthworks within the development area and its immediate environs;
- a shovel pit survey intended to identify concentrations of lithic, or other, artefacts;
- a programme of palaeoenvironmental coring to investigate the potential for detailed analysis
- an archaeological evaluation intended to examine the potential for surviving below ground features or deposits.

1.2 ***Topography:*** the study area lies on the west Cumbrian coastal plain, an area extending from the Duddon estuary in the south, to St Bees Head in the north and is at no point more than *c*7km wide. A series of raised beaches close to the present shoreline are the remnants of mid-Holocene sea-level changes (Hodgkinson *et al* 2000). The majority of the coast is low-lying, with shingle beaches and low boulder clay cliffs, but at St Bees Head New Red Sandstone (Permian) outcrops overlie Carboniferous Limestones to form rocky cliffs. The central part of the study area is a tall spur of glacially derived sand and gravel, with low-lying wetlands to the east associated with the plain of the River Ehen, sandy beach deposits to the west and further wetland around Lantern Moss Tarn to the north-west. The West Cumbrian railway separates the study area from the shore on the west side, and there is a small beck draining from a spring within the study area down to the west.

1.3 ***Archaeological Background:*** the area is of considerable archaeological potential as a number of lithic artefacts of prehistoric date have been discovered in the vicinity (Hodgkinson *et al* 2000), and 1km to the north a major discovery of well-preserved Neolithic remains was made at Ehenside Tarn (Darbishire 1873). The site at Ehenside Tarn consisted of extensive settlement remains surviving in water-logged conditions around the edge of a tarn, associated with the polishing of stone axes (*ibid*). The development area at Braystones is in close proximity to Lantern Moss Tarn, to the west, and so there is the potential for the survival of similar remains to those at Ehenside Tarn.

2. WALK-OVER SURVEY

2.1 A walk-over survey of the study area, which extended over 0.18km², was undertaken. The development area and surrounding fields was examined in 20m wide transects and the identified sites were located using a Global Positioning System (GPS). Nine sites were

identified during the walk-over survey, all of which were unrecorded in the Cumbria Sites and Monuments Record. All of these appeared to be the result of relatively recent activity. Sites 2-5 were all shown as intact boundaries on the 1st edition Ordnance Survey (1860) maps and were therefore components of a post-medieval field system. Sites 6-8 were a series of extraction sand pits, which were also probably of post-medieval date, especially Site 7 which appeared to respect the field boundaries to the north and west. Their proximity to the railway embankment might suggest that they were used to provide materials for its construction in the mid-nineteenth century. Site 1 was a narrow hollow way, which predates the road leading into the caravan park, and was of either medieval or post-medieval origin. Site 9 is a large flood defence bank extending along the eastern side of the River Ehen, and is of post-medieval date.

3.2 The area was examined for finds, particularly lithics, looking particularly in areas of disturbed ground and mole hills but none were recovered in the course of the present survey. The only lithics identified were those recovered by Jim Cherry (Cherry and Cherry 1984, 6) (Site 10) and which was identified as part of the assessment (LUAU 2001). The character of the monuments suggest a predominantly post-medieval land-use of the site; and there are no surface indicators of earlier activity within the extent of the proposed development.

3. SHOVEL PIT SURVEY

3.1 The site was under pasture at the time of the survey, and therefore could not be examined for artefacts by conventional field walking. As a consequence it was necessary to undertake a shovel pit survey of the study area in order to investigate the potential for artefacts within the topsoil. The survey involved the excavation of small holes (*c*150mm x 150mm), using a shovel through the turf to expose the topsoil. A brief examination was made of the exposed turf before moving onto the next shovel pit hole. The holes were set out on an approximate 6m grid, derived from two parallel baselines which corresponded to the north and south field boundaries and these were then surveyed using GPS equipment. The artefacts recovered were individually bagged and allocated a unique record number.

3.2 Approximately 950 shovel test pits were dug and examined. Of these only four (0.4%) produced positive results of individual finds (Fig 3). All of the finds came from the topsoil and must be regarded as casual finds. The finds comprised two possible worked nodes of flint, one piece of chert and one fragment of slag; their distribution was scattered over the area and did not appear to reflect a significant concentration.

4. ARCHAEOLOGICAL EVALUATION

4.1 A programme of trial trenching was undertaken to examine the potential for sub-surface archaeological deposits or features. The exact number and position of the trenches was influenced by the findings of the shovel pit survey, with two trenches specifically targeting the location of recovered flints. The remaining five were positioned to evaluate areas of potentially significant topography. The initial survey work had identified only a low level of archaeological resource, and consequently only 3%, instead of the alternative 5%, of the development impact area were subject to trenching. The total area evaluated was 315m^2, consisting of seven trenches each measuring 25m by 1.8m. The principal aims of the trenching were to establish the presence or absence of any archaeological deposits and to identify evidence concerning the dating, nature, and quality of preservation of the archaeology. The trenches were excavated by a JCB mechanised excavator fitted with a

standard five foot (1.8m), toothless ditching bucket. Initially each trench was mechanically deturfed to a depth of 0.1m, the trench was briefly trowel cleaned and the inverted turves were examined for finds. Following on from this each trench was then mechanically excavated, starting with a sondage to establish the overall stratigraphy at one end of the trench, and then the rest of the trench taken down to the most significant level, in level spits of typically *c*0.1m depth.

4.2 Only two trenches produced positive results: Trenches 4 and 7. In Trench 4 were the remains of a low stone bank or wall aligned north-east/south-west and in Trench 7 was a single linear drainage feature aligned roughly east/west (feature ***122*** / ***123***). In addition in Trenches 1, 4 and 6 were the remains of what were initially thought to be burning episodes (***102***, ***114-119***, ***120*** and ***121***), but later close examination of the retrieved samples demonstrated that the deposits contained mostly coal fragments (*Section 5.5*). In Trench 1 was a small dense patch of probable burning associated with a more extensive horizon which sloped away to the north. In Trench 4 were three patches, one very small and ephemeral, and of the other two, one was somewhat larger and multi-layered. A similar area of black material was seen in the eastern end of Trench 6, although this was much more diffuse and amorphous. There was no artefactual dating evidence for any of the features and their ambiguous nature and the identification of the coal fragments would suggest that these were natural horizons.

5 PALAEOENVIRONMENTAL SAMPLING

5.1 A programme of coring was undertaken in order to assess the palaeoenvironmental potential of the development site and Lantern Tarn. In the event it was established that there were no organic soils from within the extent of the development area, and consequently it was not possible to take a palaeoenvironmental core. However, a core was taken from the eastern edge of Lantern Tarn to examine the potential for establishing a vegetational sequence for the locale.

5.2 ***Methodology:*** the sediments adjacent to Lantern Moss Tarn were cored with a Russian type peat corer (Jowsey 1966), in two overlapping cores. The stratigraphy of the sediments was recorded in the field and the results are given below (*Appendix 2*). The cores will be assessed in the laboratory as to their potential for pollen analysis. In addition five samples were taken from the putative burnt features in Trenches 1 and 4. These samples were floated manually and the flots collected on a 500µ mesh and air dried. A representative sample of each flot was assessed microscopically with a Lietz/Wild stereozoom for plant remains.

5.3 ***Pollen Analysis Results:*** pollen analysis of the sediments will record changes, both locally and regionally, in the vegetation through time and indicate whether these changes may have resulted from human interference. Because Lantern Moss Tarn (120m x 60m) is relatively small the pollen record is likely to contain a greater proportion of local rather than regional pollen (Jacobson and Bradshaw 1981); it will therefore represent the vegetation history in the immediate vicinity of the tarn, including that of the development area.

5.4 The stratigraphy of the cores contained two features, which are potentially very significant. The most interesting one is that of bands of silt, which when present in organic sediments suggests hillwash from the surrounding landscape. During periods of heavy rain hillwash can occur when the land has been cleared leaving unstable soil conditions. This instability may be brought about by the initial clearance of the trees or by the cultivation of the soil.

The presence of charcoal from the cores indicates burning, which may be the result of artificial or natural burning of the vegetation. The pollen analysis of these cores is potentially extremely interesting because of the silt and charcoal.

5.5 ***Macrofossil Analysis Results from Bulk Samples:*** all the flots and residues from both Trench 1 (***102***) and four (***114, 115, 117***, and ***118***) contained large quantities of coal. Occasional very small fragments of charcoal were recorded but these were insignificant. There was some modern contamination but no other plant remains were recorded. In conclusion the samples were small coal deposits and not a product of burning episodes.

6. CONCLUSIONS

6.1 The results of the walkover survey demonstrated only post-medieval land-use for he area, and as the present field system comprises large, rectangular fields, and is remote from the village of Braystones; it is probable that the area was enclosed only as a result of parliamentary enclosure. The assessment (LUAU 2001) recorded a Neolithic lithic scatter from Warborough Nook, to the south of the development area, and the shovel pit testing identified three scattered flakes, of flint and chert, from within the development area. Despite such a low recovery rate, their locations do tentatively indicate a correlation of finds with the eastern side of the brow of the hill, which runs approximately north/south through the field. In general, however, the distribution would appear to be consistent with a low background scatter.

6.2 Of the seven evaluation trenches only Trenches 4 and 7 produced evidence of human activity. In Trench 4 were the remains of a possible low stone bank or wall aligned north-east / south-west and in Trench 7 was a single linear drainage feature aligned roughly east/west; both are indicative of post-medieval activity.

7. IMPACT AND RECOMMENDATIONS

7.1 The results of the present study would suggest that the site has only limited archaeological potential. Topographically, it is within the environs of a coastal tarn (Lantern Moss Tarn) that is comparable in form, and is in the environs of, the important Neolithic site of Ehenside Tarn, and the palaeoenvironmental sample from Lantern Tarn would appear to indicate that the tarn is of comparable importance to Ehenside. However, the results from the investigation of the development area indicates an archaeological resource of only local significance.

7.2 While the proposed water treatment plant would appear to have an intensive, albeit localised impact, upon the terrain, this will not, on the present evidence, affect an important archaeological resource. On this basis no further archaeological work is recommended.

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Ordnance Survey, 1860 25": 1 mile map, *Sheet 77.3*, 1st edn

APPENDIX 1 - SITE GAZETTEER

Site number **01**
Site name Lantern Moss Track
NGR NY 0063 0554
Site type Trackway
Period Medieval / Post-medieval
Source Survey
Description
A single narrow track or hollow-way, slightly cut into the slope, which is up to 1.5m wide, 0.4m deep, and 30m long. The track is orientated roughly east/west. The track disappears at the top of the slope to the north-east and is cut by the access road to the caravan park to the west.

Site number **02**
Site name Lantern Moss Field Boundary
NGR NY 0082 0549
Site type Trackway and field boundary
Period Post-medieval
Source Survey
Description
This site consists of a trackway and broad relict field boundary, both orientated north/south. The track is 4m wide, cut into the slope on the west side to a depth of around 0.5m. A modern fence on the east side separates it from the original boundary bank. The boundary is between 3m and 5m wide, and up to 1.3m tall. It consists of round stones and earth, forming a revetment around the slope. The boundary is cut at the northern end by cow tracks. At the southern end the boundary turns towards the east

Site number **03**
Site name Borough Hill Bank
NGR NY 0073 0549
Site type Bank
Period Post-medieval
Source Survey
Description
A low bank and lynchet, which probably represent a former field boundary. The bank is up to 2m wide, 0.3m high, and orientated north/south. This feature is very indistinct in places and badly eroded but appears to butt Site 04.

Site number **04**
Site name Lantern Moss Bank
NGR NY 0072 0553
Site type Bank
Period Post-medieval
Source Survey
Description
A low irregular bank, around 2 to 5m wide, 0.3m high, and orientated east/west. This feature is very indistinct but appears to be butted by Site **03**.

Site number **05**
Site name Lantern Moss Wall
NGR NY 00742 05378
Site type Wall
Period Medieval/post-medieval
Source Survey
Description

A ruined field boundary of earth and cobble construction, up to 1.6m tall and 3m wide, forming a revetment to the field to the south. This site is badly eroded.

Site number **06**
Site name Braystones Sandpit
NGR NY 0072 0515
Site type Sand pit
Period Post-medieval
Source Survey
Description
A large pit orientated north-west to south-east. The pit is approximately 35m long, 6m wide, and up to 2m deep. There is a large bank on the western side of the pit, and further banks, possibly consisting of spoil, at the southern end, associated with shallow depressions. The pit is now filled with water. The pit may have been a sand extraction pit, possibly supplying materials to the nearby rail embankment to the west. It may be associated with Site 07 to the south, which also appears to be for sand extraction.

Site number **07**
Site name Tarnside Sand Pit
NGR NY 0074 0510
Site type Sandpit
Period Post-medieval
Source Survey
Description
A possible sand pit, forming a square depression around 20m long, 15m wide, and 1m deep. There is an apparent bank around the southern and eastern sides of the pit, which is around 1.2m wide, and 0.4m high. The railway is to the west of this feature. This bank appears the respect existing walls but may be earlier. This feature has the appearance of a sheepfold however without the stone walls.

Site number **08**
Site name Warborough Nook Sandpit
NGR NY 0080 0506
Site type Sandpit
Period Post-medieval
Source Survey
Description
A collection of small irregular pits, up to 8m long, 4m wide, and 0.8m deep, situated to the east of the railway. The pits are situated to the south of Site 07 and possibly associated with it. The pits are probable sandpits, perhaps to supply materials to the railway embankment.

Site number **09**
Site name Braystones Bank
NGR NY 0097 0518
Site type Flood Defence Bank
Period Post-medieval
Source Survey
Description
A sinuous bank running alongside the eastern bank of the River Ehen, and is visible on the modern Ordinance Survey map. The bank is approximately 0.8m high, and 1m wide and appears to be a flood defence bank.

Site number **10**
Site name Warborough Nook Findspot
NGR NY 0080 0520
Site type Find
Period Neolithic
Source Cherry and Cherry 1984, 6
Description

The site comprises more than 25 flints scattered on a rectangular area of bare ground, 9m x 4.5m, towards the top of Warborough Nook. The finds included three cores, long blades, and a small pointed flake which was possibly intended as a borer, and a fragment of *petit tranchet* arrowhead. Previous finds on the site include a stone axe.

APPENDIX 2 - PALAEOENVIRONMENTAL CORE STRATIGRAPHY

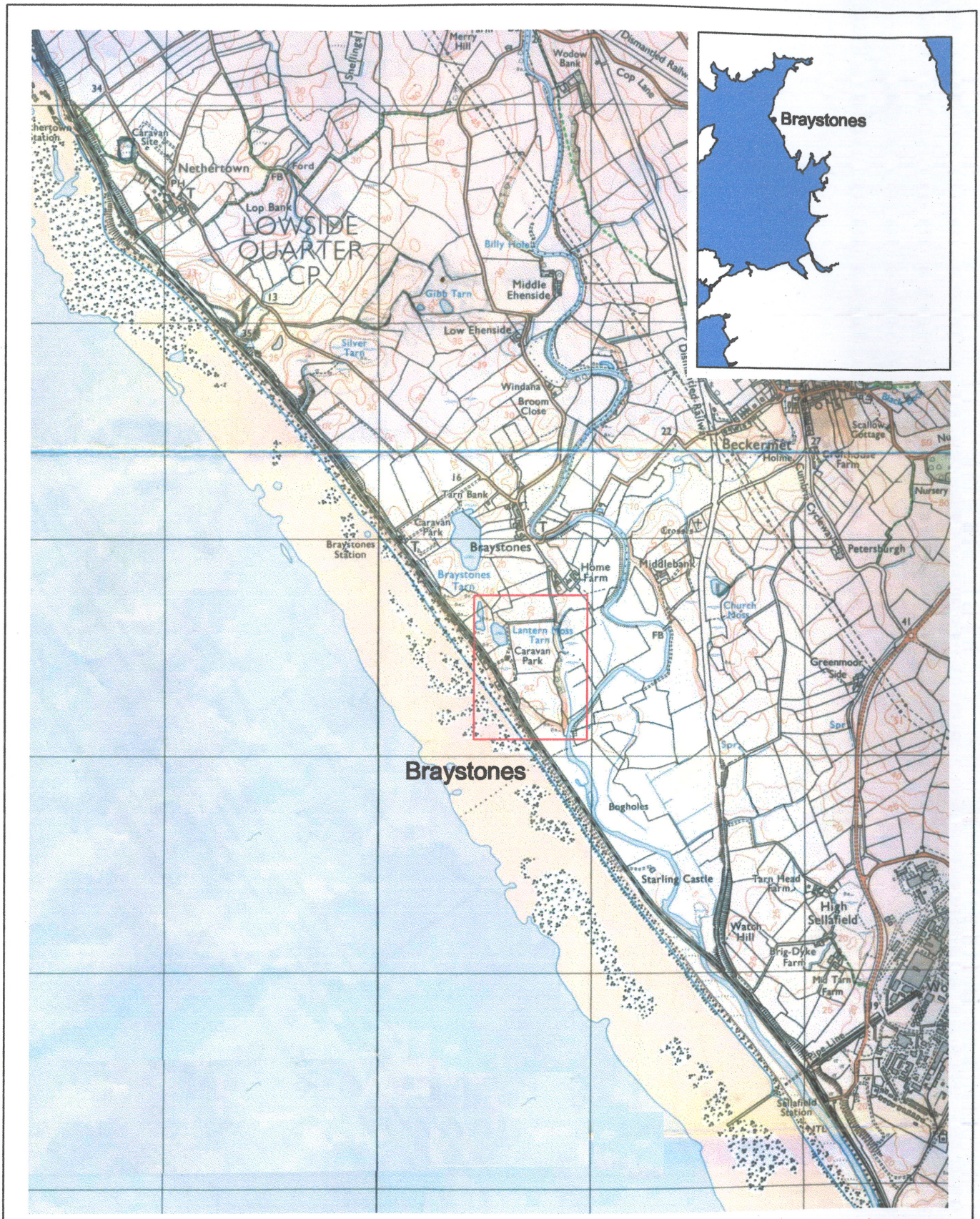
CORE A

Depth m	Sediment type
0-1.00	unsampled floating raft of reeds
1-1.25	fibrous organic mud + moss remains + modern rhizomes
1.25-1.695	organic mud + wood fragments + moss remains
1.695-1.70	charcoal band
1.70-2.08	organic mud (more compact) + wood fragments
2.08-2.085	silt
2.085-2.50	compact organic mud + wood fragments
2.50-3.30	compact organic mud with laminations + wood fragments
3.30	sand

CORE B

Depth m	Sediment type
0-1.25	unsampled floating raft of reeds
1.25-1.35	fibrous organic mud + moss remains
1.35-1.98	organic mud + wood fragments + moss remains
1.98	charcoal
1.98-2.05	organic mud (more compact) + wood fragments
2.05-2.06	silt
2.06-2.25	compact organic mud + wood fragments
2.25-2.30	silt
2.30-3.30	compact organic mud with laminations + wood fragments
3.30	sand

ILLUSTRATIONS



based upon the Ordnance Survey 1:25000
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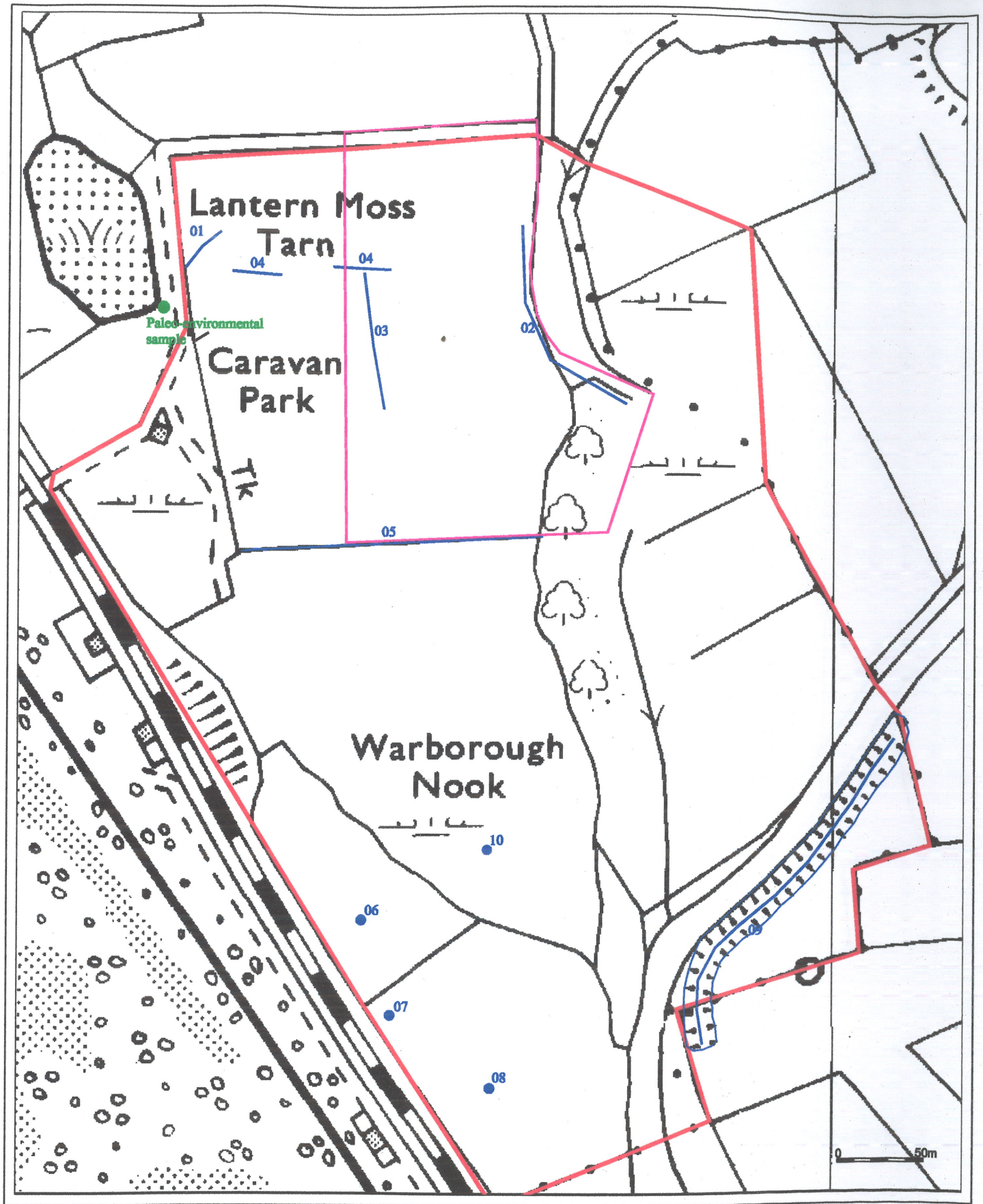
Figure 1: Location Map showing Braystones, Cumbria



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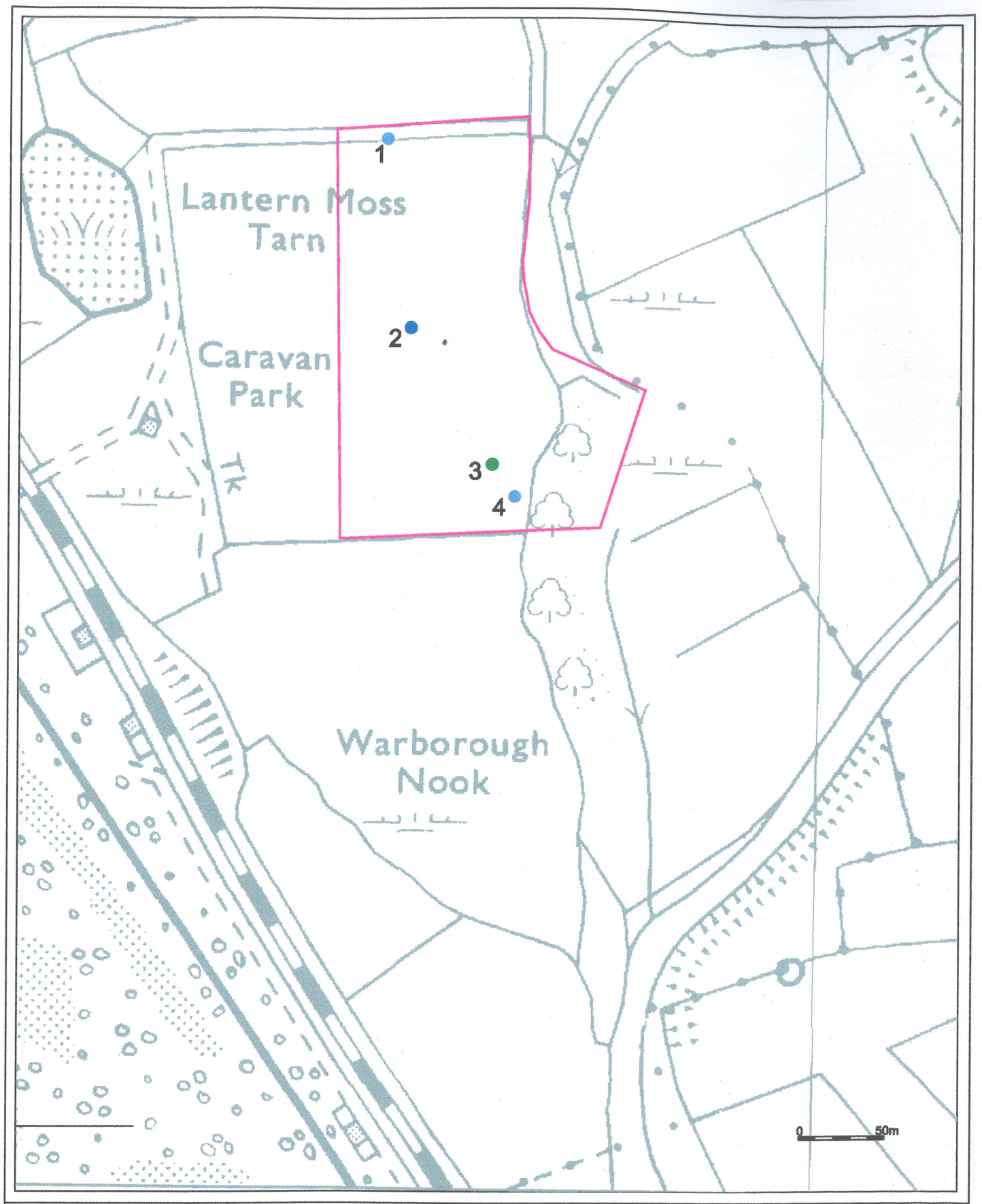
PROJECT:	Project title
DRAWING No:	2
SCALE:	1:3000
TITLE:	Gazetteer site from walkover survey and location of paleoenvironmental sampling
CLIENT	United Utilities
DRAWN BY:	AJP/CEH
DATE:	October 2002
LOCATION:	N
KEY	04 Walkover survey sites Survey area Area of evaluation Paleoenvironmental sampling site

Figure 2 : Gazetteer sites from walkover survey and location of paleoenvironmental sampling



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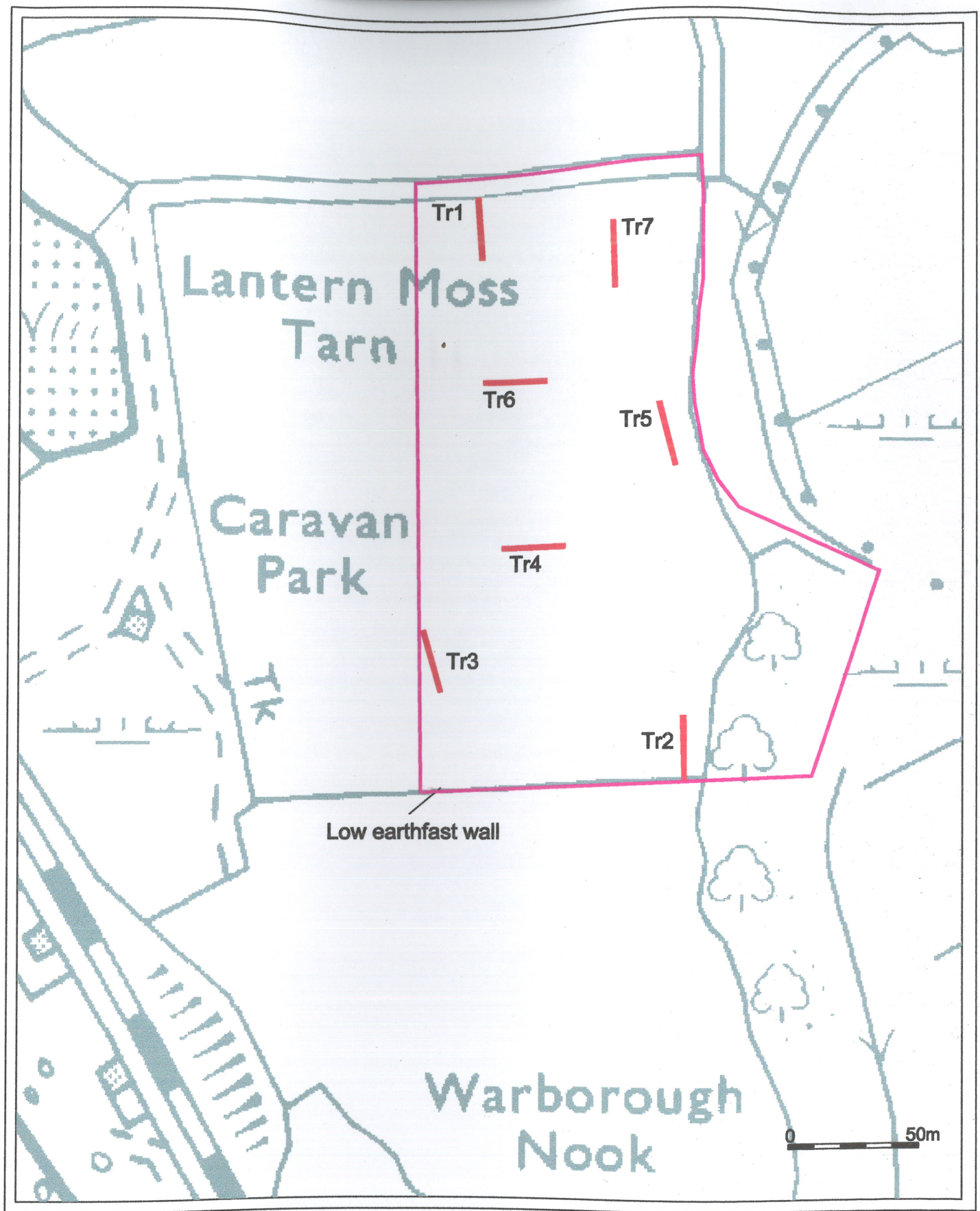
PROJECT:	Lantern Tarn Evaluation
DRAWING No:	3
SCALE:	1:3000
TITLE:	Location of shovel test pits
CLIENT	United Utilities
DRAWN BY:	AJP/CEH
DATE:	October 2002
LOCATION:	N
KEY	Flint Chert Slag Area of Evaluation

Figure 3 : Location of shovel test pits with positive results



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PROJECT:	Lantern Tarn Evaluation
DRAWING No:	4
SCALE:	1:2000
TITLE:	Location of evaluation trenches
CLIENT	United Utilities
DRAWN BY:	AJP/CEH
DATE:	October 2002

LOCATION:

N

KEY

Trench

Area of evaluation

Figure 4 : Location of evaluation trenches 1-7