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M1 DUNDALK WESTERN BYPASS

SITE 108: DONAGHMORE 1
CHAINAGE 19.585
NGR: 301968 / 307171

FINAL REPORT

ON BEHALF OF
LOUTH COUNTY COUNCIL and the
NATIONAL ROADS AUTHORITY

LICENSEE: BRIAN Ó DONNCHADHA
LICENCE NUMBER: 02E1330

JULY 2009

IAC Irish Archaeological
Consultancy

NON-TECHNICAL SUMMARY

Irish Archaeological Consultancy Ltd. (IAC) undertook an excavation in the townland of Donaghmore in advance of road construction associated with the Dundalk Western Bypass (DWB). The excavation was undertaken to ensure all subsoil archaeological remains were preserved by record in advance of groundwork.

Prior to archaeological excavation a detailed geophysical and test trenching programme was carried out to define the extent, character and condition of the archaeological resource in this general area. These investigations revealed areas of intense archaeological interest, namely Donaghmore 1 and Donaghmore 4, along with other areas worthy of investigation.

Archaeological excavation at Donaghmore 1 began on Monday the 9th of September with a team of one Supervisor and eight Assistant Archaeologists. It was completed by Thursday the 10th of October. This revealed that the area investigated was a site containing prehistoric activity.

Site 108, Donaghmore 1 consisted of over 111 stakeholes and several pits and postholes. A number of pits and stakeholes were filled with a charcoal-rich fill that contained burnt bone, a hazelnut shell and 20 sherds of a Middle Neolithic Impressed Ware Bipartite bowl (Appendix 2.3). A single worn sherd of Middle Neolithic Impressed Ware also came from one of the stakeholes [C222] (Appendix 2.2). Hazel and oak charcoal from another stakehole [C161] returned a calibrated date of Cal. 3810–3650 BC (Appendix 2.2).

Analysis of the flint assemblage from Site 108 returned a date of Late Neolithic/Early Bronze Age (Appendix 2.5) and a number of features contained Late Neolithic/Early Bronze Age Beaker pottery indicating that Donaghmore 1 was a multi-period site.

ACKNOWLEDGEMENTS

The archaeological excavation at Site 108, Donaghmore 1, Co. Louth was carried out on behalf of Louth County Council and the National Roads Authority in advance of the construction of the M1 Dundalk Western Bypass.

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1 INTRODUCTION

This report refers to an archaeological excavation carried out at Site 108, Donaghmore 1 (Figure 1), in the townland of Donaghmore c.3km south west of Dundalk, Co. Louth. It was carried out as part of an archaeological mitigation programme associated with the Dundalk Western Bypass (DWB). Archaeological fieldwork was directed by Brian Ó Donnchadha of Irish Archaeological Consultancy Ltd. (IAC Ltd.) and was funded by Louth County Council and the National Roads Authority.

1.1 Site location

The site (108) was located in the townland of Donaghmore, c.3km south west of Dundalk (Louth OS sheet number 007). The site is:

- Site 108, Donaghmore 1, Excavation Licence 02E0373, Ch16.000 - 23.870, NGR 301968/307171.

The site was identified as a result of the test trenching exercise undertaken by IAC in March 2002 (Licence Ref. 02E0373). The area comprised an undulating landscape with the site primarily focused on the top and west facing slope of a low ridge running EW across the landscape.

1.2 The scope of the project

General

Louth County Council proposed to construct a motorway called the 'Dundalk Western Bypass – Northern Link'. The scheme also included ancillary roads and other structures.

The Dundalk Western Bypass – Northern Link connects the existing Dunleer-Dundalk Motorway, which terminated in the area of the N52 Ardee Road, to the N1 Ballymascanlan Roundabout in an arc situated c.2.5km - 3km to the west and north of Dundalk.

The scheme was divided into two sections: Section 1 (7.8km main centre line chainage (Ch) ran from Ch16.000 to Ch23.870 (the Armagh Road, R177). Work on the southern end of Section 1 was previously commenced so that the main cutting and rough surfacing for the road had been completed to chainage point Ch17.100. The chainage zone Ch16.000 – 17.100 had therefore not been investigated archaeologically under the present contract. Section 2 (2.08km main centre line chainage) ran from the Armagh Road Ch23.870 to the Ballymascanlan Roundabout, Ch25.950.

Therefore the archaeological potential of the route represented a distance of 8.49km (Ch17.100 – 25.950). The route corridor varied between 60m and 200m (not including side roads) and was on average 100m wide. The archaeological site area was thus approximately 85 hectares.

Specific

Five excavations were undertaken in the Donaghmore townland, spread out over a distance of c.250m with on average a distance of 30m separating the sites (Figure 3). The excavation areas were mainly intervisible, with three sites being visible from each other, namely Donaghmore 4, 5, and 6.

Background historical research undertaken as part of the test trenching programme revealed Donaghmore townland to contain sites listed in the Record of Monuments and Places (RMP) including several souterrains, a ring-ditch and the local tradition of a church site. Records held by the National Museum of Ireland in the Topographical Files also record stray finds from the townland of Donaghmore including flint waste flakes, iron slag, iron fragments and undated pottery sherds.

Archaeological excavation revealed the Donaghmore area to be part of a prehistoric landscape with material being recovered from the excavations dating from the Neolithic (4000BC-2500BC) and continuing into the Early Medieval period (AD500-1169AD).

1.3 Circumstances and dates of fieldwork

The excavation was undertaken to offset the adverse impact of road construction on known and potential subsoil archaeological remains in order to preserve the site by record.

Topsoil stripping of Site 108, Donaghmore 1 commenced on Monday the 9th of September with a team of one Supervisor and eight Assistant Archaeologists and was completed on Thursday the 10th of October 2002.

After initial bulk stripping the areas of excavation were hand cleaned in order to identify potential archaeological remains. All features were subsequently fully excavated and recorded by hand, using the single context recording system with plans and sections being produced at a scale of 1:50 or 1:20 (sections were recorded generally at 1:10) and photographs where necessary. All works were carried out in agreement with the Project Archaeologist and the National Monuments Section of the Department of the Environment, Heritage and Local Government (formerly Dúchas-The Heritage Service). Samples were taken of charcoal for species identification and radio carbon dating analysis.

It was agreed in advance that adequate funds to cover excavation, post-excavation, conservation and dating analysis would be made available by Louth County Council. Dating of the site involved pottery analysis through typological study and radiocarbon analysis. The site archive, and any finds, samples *et cetera* were kept in safe storage by IAC Ltd. during the post-excavation stage.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The following archaeological and historical background refers to the wider archaeological landscape through which the DWB passes.

The town of Dundalk lies at the northern end of Dundalk Bay and is the administrative centre of County Louth, located in the north east of Leinster. The area spans two geographical areas. To the west, the rural landscape surrounding the urban district is one of undulating topography, with low drumlins rising to 30-40m from the coastal plain. As is the case with much of Louth, this covers thick strata of Ordovician and Silurian slates, with some rock outcrops (Gosling 1993, 237) notable. To the east of the urban district, the flat, low lying coastal plain is comprised of recent estuarine and alluvial clays and silts, shaped by the sea level changes following the end of the Ice Age in Ireland c.10000 years ago.

At the time of the earliest habitation in Ireland (Early Mesolithic period: c.7000BC), the sea submerged the area of the town to a depth of 4-5m, although it continued to retreat to its present level until the Late Neolithic/Early Bronze Age period (c. 2500BC), replacing the submerged area with salt marshes and tidal flats. At various stages from the 17th century onwards, these areas were improved by reclamation projects.

The proposed route for the Dundalk Western Bypass–Northern Link is located within an area that avoids the major recorded archaeological monuments in the vicinity. This is a particularly rich archaeological landscape but the great majority of known sites lie beyond the perimeter of the original study area. It is important to note, however, that a significant number of sites in this part of County Louth survive as crop marks, where the above ground indication of the monument has been destroyed. The recognition of such monuments has often been the result of chance discovery from ploughing and construction work, or by observation from the air where the distinctive traces of the buried features can sometimes be observed. The strong tradition of arable agriculture in the locality has been largely responsible for this occurrence.

2.1 Prehistoric Period (c.7000BC-c.AD500)

The archaeological record provides evidence that this area was occupied from the Late Mesolithic period (c.4200 BC), with the excavation of Mesolithic shell midden sites with flint material at Rockmarshall, c.5km north east of the town of Dundalk.

There are a number of RMP sites which are within the vicinity of Donaghmore 4 that can be dated to the prehistoric period. These sites, which are located in the townland of Tankardsrock, consist of the sites of two standing stones (LH007-032 and 031), located 1.5km north northwest, rock art (LH007-102) which is located 1km north northwest, and a Bronze Age burial cist (LH006-037), which is located 1.5km north northwest of the site. At Donaghmore 7, which is located 200m to the south of Donaghmore 4, the remains of a possible small ring barrow were discovered. Further prehistoric occupation was found at Donaghmore 1, which is located 140m to the south of Donaghmore 4.

2.1.1 The Neolithic (c.4000BC – c.2500BC)

Although we can say with confidence that significant Neolithic activity took place in Ireland from c.4000BC onwards, which had many similar features with contemporary sites in Britain and West Europe, uncertainty still remains concerning the

circumstances of the arrival of Neolithic customs and traditions in Ireland and how the new economy altered the environment.

The origins of the Neolithic in Ireland are disputed. Pollen records reveal forest clearances occurring before our earliest dated Neolithic sites or monuments; however this may be a reflection of some modern dating methods being too crude to discriminate between Early and Late Neolithic settlement rather than an indication of the true chronology (Mitchell & Ryan 1997). A debate continues over whether the culture evident in Ireland during the Neolithic was a product of a migrating people into Ireland or an indigenous development from Mesolithic populations. The introduction of certain flora and fauna species, landscape management techniques, cultural traits in architectural construction and domestic crafts bearing a striking resemblance to contemporary evidence in Britain has led some authors to suggest colonisation from outside Ireland (Mitchell & Ryan 1997). Recent studies (Cooney 2000, 13) have suggested that a combination of small scale movement across the Irish sea by migrating communities and developments within the existing Mesolithic populations within Ireland in the innovative beginnings of this era.

Those who suggest that the development of Neolithic customs and traditions in Ireland was a native evolution make the observation that the Irish Mesolithic period was a time of isolation rather than contact. If the Megalithic tombs were constructed by a migrating population, a prolonged period of consolidation would have been required in advance of their construction (Mitchell & Ryan 1997). Therefore, it is possible that the Mesolithic peoples gradually adopted new customs and practices through contact with Britain and mainland Europe, leading to the incremental growth of a distinctive economy before a consolidated Neolithic culture emerged.

The vast majority of the archaeological evidence for this period is to be found at the 4-5m (25ft) contour, which reflects the coastline during the maximum post-glacial marine transgression, and it has been suggested that this settlement location would have facilitated the exploitation of the higher ground for farming and the lower ground for summer grazing (Gosling 1993, 242). There is a concentration of Megalithic tombs in the Flurry Valley to the north-east of the site at Donaghmore 1 (with the nearest example located at Faughart Lower (LH004-062), c.5.3km to the northeast) and scattered throughout the Cooley peninsula. Archaeological discoveries elsewhere on the DWB scheme revealed Late Neolithic/Early Bronze Age habitation activity at Site 115, Newtownbalregan 5 (Bayley, D. forthcoming (c)), located c.1.6km north of Site 108 and the truncated remains of a Late Neolithic/Early Bronze Age House identified at Site 101, Littlemill 1 (Ó Donnachadha, B. forthcoming (d)), located c.2.1km to the southeast of the site. A collection of pits dating to the Late Neolithic/Early Bronze Age were identified at Site 103, Littlemill 4 & 5 (Ó Donnachadha, B. forthcoming (c)), c.1.8km south southeast of Site 108 (Donaghmore 4) and a number of Neolithic huts with associated pits were excavated at Site 124, Carn More 1 (Delaney, S. forthcoming (b)), located c.4.3km northeast of the site. Several pits containing Early Neolithic pottery were identified at Site 132, Faughart Lower 5 (Delaney, S. forthcoming (c)), located c.5.3 km north of the site. A group of pits and possible postholes at Site 109, Donaghmore 4 (Ó Donnachadha, B. forthcoming (h)) were located c.0.2km north of the Site 108 and were probably directly associated with each other.

However, during the Neolithic, Waddell (1998) points out that while it is believed that scattered self-sufficient farmsteads were typical for the majority of settlements (which may have included rectangular built houses), relatively temporary, replaceable dwellings may have been the norm for some sections of the society, and this may well be illustrated by the house site found at Donaghmore 4, which appears to be a

temporary structure. He draws on Thomas's (1996) proposal that social units may have had seasonal fluidity that would have also tied into the Megalithic landscape of the Neolithic. Transhumance (the practice of movement of livestock to summer hill pastures) and the exploitation of seasonal resources, such as fishing shellfish and salt collection, is thought to explain the numerous finds of flints and pottery in sand dunes along the north-east Irish coast and often found in association with hearth remains (Waddell 1998).

2.1.2 The Bronze Age (c.2500BC – c.500BC)

From the relatively scant prehistoric archaeological evidence, there are indications that the area was not densely settled until the beginning of the Bronze Age (2400 BC). The vast majority of the archaeological evidence for this period is to be found at the 4-5m (25ft) contour, which reflects the coastline during the maximum post-glacial marine transgression, and it has been suggested that this settlement location would have facilitated the exploitation of the higher ground for farming and the lower ground for summer grazing (Gosling 1993, 242). Bronze Age activity is distributed fairly evenly across the study area. These are indicated in the antiquarian drawings of Wright at the Castletown/Kilcurry confluence.

Bronze Age discoveries along the DWB consist of an Early Bronze Age Beaker (2400-2200BC) habitation at Site 112, Newtownbalregan 2 (Bayley, D. forthcoming (e)), located c.1km north of the site. A number of Bronze Age ring-barrows, a cist and a cairn were excavated at Site 127, Carn More 5 (Bayley, D. forthcoming (g)), located c.4.4km northeast of Site 109. A total of 3 Bronze Age burnt mounds/*fulachta fiadh* were excavated along the route of the DWB at Site 111, Newtownbalregan 1.1, Site 113, Newtownbalregan 5 and at Site 128, Faughart 1, 2 & 3. The burnt mound excavated at Site 102, Littlemill 2 dated to the medieval period (890-1250AD). A further 6 burnt mounds/*fulachta fiadh* were excavated by Archaeological Development Services Ltd (ADS Ltd.) as part of the archaeological resolution of the Dunleer/Dundalk Motorway.

2.1.3 The Iron Age (c.500BC – c.500AD)

There is a marked lack of known Iron Age (500BC-AD500) activity. The ring barrow identified at Site 131, Donaghmore 7 (Ó Donnachadha, B. forthcoming (g)) is the sole example of a definitive Iron Age site identified through the DWB archaeological investigations. The site consists of a small ring barrow and a single piece of unworked flint was found in the barrow with remains of three charred wooden planks found within the barrow ditch. These were taken for specialist analysis and were submitted for radiocarbon C14 dating. The dates returned confirmed that the ring barrow belongs to the Iron Age period, specifically the mid-Iron Age based on Cal. 120BC-60AD.

2.2 Early Medieval Period (AD500-1169)

The early medieval period is depicted in the surviving sources as entirely rural characterised by the basic territorial unit known as *túath*. Byrne (1973) estimates that there were probably at least one hundred and fifty kings in Ireland at any given time during this period, each ruling over his own *túath*. During this sometimes violent period, roughly circular defensive enclosures known as ringforts were constructed to protect farmsteads. Although most of the ringforts that have been excavated are shown to date to this period, some have earlier origins and may have been originally constructed during the Iron Age, or even earlier.

Site 114 at Newtownbalregan 6 (Bayley, D. forthcoming (d)) located c.1.5km north of Site 108; Donaghmore 1 consists of a ringfort and souterrain. The ringfort or rath is considered to be the most common indicator of settlement during the early medieval

period (c.400AD – c.1100 AD). The most recent study of the ringfort (Stout 2000) has suggested that there are a total of 45,119 potential ringforts or enclosure sites throughout Ireland. They are typically enclosed by an earthen bank and exterior ditch, and range from 25m to 50m in diameter. The smaller sized and single banked type (univallate) were more likely to be home to the lower ranks of society while larger examples with more than one bank (bivallate/trivallate) housed the more powerful kings and lords. At Site 124, Carn More 1 (Delaney, S. forthcoming (b)), (Area 1) a ringfort identified in the RMP as LH004-067 was excavated in advance of the motorway's construction, with the RMP originally listing the monument as a circular enclosure.

Souterrains are artificial underground structures, usually built of dry stone walling and comprising of passages and chambers with creeps connecting them. Souterrains are generally regarded as having had a defensive or protective function, as evidenced by the complex construction of many of the sites, with narrow winding passages, deliberate obstructions and small chambers. Raiding was endemic to Early Medieval society, and souterrains are thought to have served to house portable valuables and non-combatants during a raid. There is a previously recorded souterrain located 30m to the E of the CPO line at Ch17.640 (LH007-071). A further two enclosures with associated souterrains were also excavated by Archaeological Development Services Ltd (ADS Ltd) in advance of the construction of the Dunleer/Dundalk Motorway

The historical sources for the early medieval period indicate that the main population group in north Louth was the *Conaille Muirtheimne*. They controlled the areas of *Cuailgne* (Cooley) and *Mag Muirtheimne* (Plain of Muirtheimne) –corresponding to the area S of Dundalk, roughly equating with the modern baronies of Lower and Upper Dundalk. It has been suggested (Gosling 1993, 46) that the ancient boundaries of this kingdom may coincide with the dense concentration of souterrains in north Louth. Though nominally a branch of the *Ulaid*, who had their capital at *Eamain Mhaca* or Navan Fort, Armagh. The *Conaille Muirtheimne* appear to have been subject to the kingdom of *Brega*, which had its capital at *Cnógbha* or Knowth in Co. Meath at the time of its greatest political cohesion, during the first half of the 7th century AD. Their earliest appearance in the annals is in 688 AD, as allies of the Knowth branch of the *Síl nÁeda Sláine* at the battle of *Imblech Pich* (Emlagh, Co. Meath), which was a key event in the political fragmentation of the *Síl nÁeda Sláine* dynasty. They were subsumed by the *Airgialla* or Oriel in the early 12th century.

The *fulacht fiadh* identified at Site 102, Littlemill 2 (Ó Donnachadha, B. forthcoming (f)) was Carbon 14 dated to Cal. 890AD -1250AD (968 \pm 85BP). Site 102, Littlemill 2 was roughly circular in shape and it is suggested that these sites, which are identified as early medieval and medieval in date, tend to be circular or oval in shape with no evidence for pit lining (O'Neill, pers.comm, 2007). The example at Littlemill 2 however was wood-lined.

2.3 Medieval Period (AD1169-1700)

The motte and bailey at Castletown (LH007-11807) located c.2.5km northeast of Donaghmore 1, represents the initial phase of Anglo-Norman activity in the area. Although there are some suggestions that John de Courcy was responsible for this development, it is generally accepted that it represents the initial headquarters of the de Verdon family in their new territory. The Anglo-Normans were responsible for the construction of a network of towns throughout the Ireland with Louth being the most urbanised county.

The lands in and around Castletown and Dundalk were granted to the Anglo-Norman Bertram de Verdon following his arrival in 1185, and corresponds to the modern barony of Upper Dundalk (Gosling, 1993, 252). The de Verdon estate passed onto the Bellevs with many of the tower houses constructed at this time. The Bellevs constructed two large examples in 1472 and 1479, of which only the later one survives in the grounds of St. Louis convent (LH007-11801). The earlier tower house is believed to have stood at Castletown cross (LH007-11803) but no traces of it survive above ground. In 1429, Henry IV introduced a £10 subsidy to encourage the King's 'liege men' to build tower houses within the Pale, under the condition that they were built within ten years. This venture was so successful that twenty years later a limit was imposed on their construction. In Counties Louth, Kildare and Meath, the towers were mostly concentrated along the borders of the Pale (Davin 1982). The surviving tower house at Castletown (LH007-11801), most likely functioned as the centre of the Bellew manor of Dundalk during the 15th century. Garstin's map of 1655 shows it protected by a bawn wall, which also enclosed outhouses.

For information of the Anglo-Norman land ownership we are reliant on documentary sources, and in Co. Louth this information is recorded in the 'Dowdall deeds'. The lack of documentary sources and archaeological excavations in the area has led to large gaps in the record regarding the size of the Anglo-Norman settlement and how it was laid out. By the 13th century it seems that Castletown had its own church and burgesses. Garstin's map does point out the existence of burgage plots and streets in the vicinity of Mill road and Castletown cross. A watermill, most likely attached to the manor, is known from documentary sources although its precise location is not known.

At this time the new town of Dundalk, which lies c.2km to the east of the Castletown, developed as the major urban centre. This was due to its market centre and port in addition to its more strategic sitting on the major routeway linking Dublin with Ulster. It is probable that another factor influencing the move of the de Verdon's was the nature of the topography of the general area. The unsatisfactory nature of the river at the Castletown location must have made it inaccessible to shipping even in the late 12th century. The new town also had the advantage of considerable natural defences. The site of the new town, which was to grow into the modern town of Dundalk, was thus better situated than Castletown from a commercial and defensive perspective. As Dundalk developed and became the focus for Anglo-Norman settlement in the area, Castletown fell into decline and Dundalk became the economic heart of the Lordship. The precise date for the foundation of the "*newtown*" of Dundalk is unclear. However by the late 13th century surviving property deeds make the distinction between the late 12th century settlement at Castletown and the Newtown or '*nove ville de Dundalc*'. As a result of the low-lying nature of the surrounding landscape and the form of the gravel ridge on which the Newtown (Dundalk) was located, the town developed a markedly linear aspect, which is still apparent today.

2.4 Post-Medieval Period (1700-1900)

Post-medieval remains identified in the study area relate to industrial structures particularly mills and kilns surrounding the Castletown and Kilcurry River waters, with these structures usually being served by a mill race. Two mills and associated races occur near to the Castletown-Kilcurry confluence. A quarry for limestone is situated to the north of the corridor. Small scale extraction cuts are also known sunk into natural rock outcrops such as the one at Ch19.200.

Site 102 at Littlemill 2 (Ó Donnachadha, B. forthcoming (f)) located 2km south of Site 108, contained the remains of a post-medieval structure, which cartographic evidence demonstrates supports its existence at this location since the first edition

OS map dating to 1836. It is probable that this structure was a small vernacular style residence accompanied by a small farmyard as was typical of the area and indeed most of Ireland during the 19th century.

At Site 119, Balregan 3 & 4 (Delaney, S. forthcoming (d)), the subsurface remains of a north-south oriented masonry structure was recorded. The foundations measured 21m in length and 6.5m in width and consisted of two rooms. The building appears to have been of 19th century construction based on the artefactual evidence and identifiable construction methods, however, the structure is not depicted on the 1835 or the 1908-9 1:10, 560 scale Ordnance Survey editions. Anecdotal evidence from a local landowner notes that a structure formerly located at this site was demolished around the mid 20th century; it is likely the building dates from the later 19th century and fell out of use at the same time as the Scotch Green Mill.

Site 118, Balregan 5 & 6 (Delaney, S. forthcoming (e)), contained the remains of a post-medieval water mill, which even in its ruinous condition showed a complete example of this form. Millrace, millpond, main sluices, internal wheel race and a number of main rooms along with the access road and access road and yard for the mill buildings were present.

3 THE EXCAVATION

3.1 Introduction

Excavation of site 108, Donaghmore 1 was undertaken as part of the resolution excavations for the DWB. It began on Monday 9th September 2002 and was completed on Thursday 10th October 2002.

3.2 Methodology

The topsoil was removed by a machine equipped with a flat toothless bucket under strict archaeological supervision. After initial bulk stripping the area of excavation was hand cleaned in order to identify potential archaeological remains. All features were subsequently fully excavated and recorded by hand, using the single context recording system with plans and sections being produced at a scale of 1:50 and 1:20 (sections were recorded generally at 1:10) and photographs where necessary. All works were carried out in agreement with the Project Archaeologist and the National Monuments Section of the Department of the Environment, Heritage and Local Government (formerly *Dúchas*-The Heritage Service). All contexts are described in Appendix 1.

3.3 Legends and Brackets

In the following text, the authors have used three types of brackets:

- { } = These enclose Subgroup numbers.
- () = These enclose Deposit numbers.
- [] = These enclose both Cut and Masonry Structure numbers.

CONTEXT KEY;

- prof = profile
- NSEW = Compass points, Eg; 'N-S' = North-South oriented feature
- All dimensions are given in metres
- d/l/w = depth/width/length
- s/m/lg = small/medium/large
- ang/sub-ang/rou/sub-rou = refer to stones, Eg; 's sub-ang' = small sub-angular stone
- mixed = ang + sub-ang + rou + sub-rou
- Dk/Lt = dark/light
- mod = moderate/moderately
- freq/occ = frequent/occasional
- ch = charcoal
- Hb/Ht = Human bone/teeth
- Ab/At = Animal bone/teeth
- frags/fls = fragments/flecks
- vert = vertical
- constr = construction
- sk = skeleton
- t'd/unx/s'd = truncated/unexcavated/segmented
- w/- = with
- pres = preservation

PERIOD KEY:

- PH: Prehistoric
- EM: Early Medieval
- MD: Medieval
- PM: Post-medieval
- MOD: Modern

4 EXCAVATION RESULTS

STRATIGRAPHY

4.1 GROUP 1: Natural Drift Geology

4.1.1 SUBGROUP {1001}: Natural Drift Geology

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
1	Site	N/A	N/A	Natural subsoil	

Interpretation:

Natural subsoil cut by features.

GROUP 1 DISCUSSION: Natural Drift Geology

The sites at Donaghmore were all located on a low, rocky ridge that lay roughly on an east/west orientation. Site 108, Donaghmore 1 is situated in a sheltered location at c. 38m OD overlooked by a small rock outcrop (of 42.5m OD) to the south and 41.8m OD to the east. The site is well drained and sheltered with good views to all sides. A stream was located c.100m to the south (Ch19.460) on lower ground at 31m OD. In addition, to the north is a second stream (19.860) at 27m OD. This sheltered location would have served as an ideal location for the establishment of a settlement (temporary or permanent).

The glacial nature of the sand and stone-strewn natural sub-soil ensures the area is well drained. The top of the ridge was broad and while not quite flat it was somewhat plateau-like but with a slight north-west facing aspect, again maximising shelter from the prevailing south-westerly weather.

4.2 GROUP 2: Neolithic Activity

4.2.1 SUBGROUP {1002}: Two burnt spreads, two hearths and a pit

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
236	1A	N/A	N/A	Burnt spread	Black, ch-rich fill
237	1A	N/A	N/A	Burnt spread	Black, ch-rich fill
238	1A	C246	N/A	Hearth fill/ in situ burnt mat	Charcoal, burnt wood, burnt bone + pottery sherds
239	1A	C247	N/A	Possible cremation pit	Grey black friable, ch-rich soil, ch, burnt bone, pottery
240	1A	C246	N/A	Possible fire pit lining	Thin (0.20) layer of brown silty clay, sm-lg stones
241	1A	C247	N/A	Possible fire pit lining	Red brown clay, freq pottery sherds burnt on one side
246	1A	N/A	C238,C240	Probable hearth	Sub-oval in plan, 0.32d x 1.70l x 1.34w, E-W orientation, sides mod steep, base flat
247	1A	N/A	C239,C241	possible hearth	Oval in plan, 0.10d x 0.63l x 0.33w, N-S orientation, sides shallow + concave, base concave

Finds:

C	Find	Material	Period	Pottery Form	Artefact Type	Comments
0236	02E1330:0236:1	Flint				Flint
0236	02E1330:0236:2	Flint				Flint
0236	02E1330:0236:3	Flint				Flint
0236	02E1330:0236:4	Flint				Flint
0237	02E1330:0237:1	Pottery	Early Neolithic			Pottery
0237	02E1330:0237:2	Pottery	Early Neolithic			Pottery
0237	02E1330:0237:3	Flint				Flint
0237	02E1330:0237:4	Flint				Flint
0237	02E1330:0237:5	Flint			Scraper	Flint scraper
0237	02E1330:0237:6	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:7	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:8	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:9	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:10	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:11	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:12	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:13	Pottery	Early Neolithic			Pottery frags
0237	02E1330:0237:14	Pottery	Early Neolithic			Pottery frags
0240	02E1330:0240:1	Flint				Flint
0241	02E1330:0241:1	Pottery	Early Neolithic ?		Bodysherd	Pottery
0241	02E1330:0241:2	Pottery	Early Neolithic		Shouldersherd	Pottery
0241	02E1330:0241:3	Pottery	Early Neolithic		Rimsherd	Pottery
0241	02E1330:0241:4	Pottery	Early Neolithic		Shouldersherd	Pottery
0241	02E1330:0241:5	Pottery	Early Neolithic		Necksherd	Pottery
0241	02E1330:0241:6	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:7	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:8	Pottery	Early		Bodysherd	Pottery

			Neolithic			
0241	02E1330:0241:9	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:10	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:11	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:12	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:13	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:14	Pottery	Early Neolithic		Necksherd	Pottery
0241	02E1330:0241:15	Pottery	Early Neolithic		Necksherd	Pottery
0241	02E1330:0241:16	Pottery	Early Neolithic ?		Bodysherd	Pottery
0241	02E1330:0241:17	Pottery	Early Neolithic		Necksherd	Pottery
0241	02E1330:0241:18	Pottery	Early Neolithic		Bodysherd	Pottery
0241	02E1330:0241:19	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:20	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:21	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:22	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:23	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:24	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:25	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:26	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:27	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:28	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:29	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:30	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:31	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:32	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:33	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:34	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:35	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:36	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:37	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:38	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:39	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:40	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:41	Pottery	Early Neolithic		Fragment	

Interpretation:

The features in subgroup {1002} were located to the northeast of the main area of activity on the site.

The burnt spread [C237] contained 11 sherds of an Early Neolithic Carinated bowl, burnt bone and a flint scraper. Perhaps this is a dump for burnt material from the two possible hearths [C246], [C247] nearby. Pottery fragments were also found in [C246] and [C247]. (C241) the basal fill of [C247] contained 41 sherds and fragments of at least one Early Neolithic Carinated bowl (Appendix 2.3).

4.2.2 SUBGROUP {1003}: Pit with Stakeholes

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
4	D1	C112-125	N/A	In situ burning	Dark brown silty clay, mottled w/ burnt clay, ch, burnt stone, med-lge unburnt ang stone
112	D1	N/A	C4	Shallow pit	Sub-rect in plan, 0.17d x 1.78l x 1.96(at widest) w, NE-SW orientation, sides slope gently, irreg base, 13 stakeholes [114-125] dug into base
113	D1	N/A	C4	Stakehole	Oval in plan, 0.08d x 0.13l x 0.09w, N-S orientation
114	D1	N/A	C4	Stakehole	Circular in plan, 0.06d x ca 0.07 dia,
115	D1	N/A	C4	Stakehole	Circular in plan, 0.07d x 0.09 dia
116	D1	N/A	C4	Stakehole	Circular in plan, 0.06d x 0.09 dia
117	D1	N/A	C4	Stakehole	0.08d x 0.12w
118	D1	N/A	C4	Stakehole	0.09d x 0.10w
119	D1	N/A	C4	Stakehole	0.06d x 0.09w
120	D1	N/A	C4	Stakehole	0.03d x 0.06w
121	D1	N/A	C4	Stakehole	Circular in plan, 0.04d x 0.07dia
122	D1	N/A	C4	Stakehole	Circular in plan, 0.11d x ca 0.7dia
123	D1	N/A	C4	Stakehole	Circular in plan, 0.02d x ca0.08dia
124	D1	N/A	C4	Stakehole	Circular in plan, 0.04d x 0.10dia
125	D1	N/A	C4	Stakehole	Circular in plan, 0.05d x ca 0.07dia

Finds:

C	Find	Material	Period	Pottery form	Artefact type	Comments
4	02E1330:4:1	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:2	Pottery	Middle Neolithic	Bipartite bowl	Shouldersherd	
4	02E1330:4:3	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:4	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:5	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:6	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:7	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:8	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:9	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:10	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:11	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:12	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:13	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:14	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:15	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:16	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:17	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:18	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:19	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:20	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:21	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	

Interpretation:

The subgroup {1003} consists of a pit [C112] which was located at the southwestern end of the concentration of activity on the site. A total of 13 stakeholes [C113], [C114], [C115], [C116], [C117], [C118], [C119], [C120], [C121], [C122], [C123], [C124], [C125] were cut into the base of the pit. It is possible that this pit formed the base to an upstanding structure such as a temporary hut or a rack for hanging meat.

The concentrations of stones found in the backfill may indicate that there was some form of stone surface surrounding to the pit, which had collapsed into it.

The pit/hollow and stakeholes were filled with a charcoal-rich fill (**C4**) containing prehistoric pottery, burnt bone, and a hazelnut shell. The prehistoric pottery from the fill (**C4**) was identified (Appendix 2.3) as Middle Neolithic Impressed Ware and consists of a bipartite bowl.

4.2.3 SUBGROUP {1004}: Stakeholes

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
6	D1	C126, C127	N/A	Possible burnt stakes	Dark brown, friable gritty clay+burnt clay
7	D1	C128	N/A	Fill	Dark brown, friable gritty clay,
8	D1	C129, C130, C131, C132	N/A	Fill of stakeholes	Dark brown, friable gritty clay, occ ch fl
9	D1	C133, C134	N/A	Fill of stakeholes	Grey brown soft clay, occ ch fl,
14	D1	C219	N/A	Fill of stakehole	Dark grey silty clay, occ ch fl
22	D1	C140	N/A	Burnt stake	Dark brown black silt, ch
23	D1	C141	N/A	Stakehole fill	Dark brown loose silty clay, occ ch frags
24	D1	C142	N/A	Fill	Med dark brown loose sandy clay occ. charcoal flecks
25	D1	C143	N/A	Stakehole fill	Med-dark brown, loose sandy clay
26	D1	C144	N/A	Stakehole fill	Med-light brown, loose sandy clay, occ ch fl
27	D1	C145	N/A	Stakehole fill	Med-dark brown, loose clay, occ ch
29	D1	C156	N/A	Burnt stake+packing	Mid-dark brown, loose clayey sand ch frags at base, poss packing stones at edge in N
30	D1	C157	N/A	Possible stakehole fill	Dark brown, loose gritty clay
31	D1	C169	N/A	Stakehole fill	Med brown, friable clay
32	D1	C170	N/A	Stake packing	Dark brown, loose clay, occ ch fl
33	D1	C171	N/A	Stake packing	Dark brown, compact clay, occ ch fl
34	D1	C172	N/A	Stakehole fill	Med brown, friable clay, occ pebbles
35	D1	C146	N/A	Stakehole fill	Light brown silty clay, occ ch fl, occ sm pebbles
36	D1	C147	N/A	Stakehole fill	Med brown silty clay, rare ch fl, occ pebbles
37	D1	C148	N/A	Poss burnt stake	Dark brown silty clay, freq ch fl
39	D1	C149	N/A	Poss burnt stake	Grey brown, soft silty clay, freq ch fl, occ sm stones
40	D1	C150	N/A	Stakehole fill	Med brown, loose silty clay, occ ch fl, occ pebbles
41	D1	C151	N/A	Stakehole fill	Light brown silty clay, occ ch fl, occ sm pebbles
42	D1	C152	N/A	Stakehole fill	Med brown, loose clay sand, occ ch fl
43	D1	C153	N/A	Stakehole fill	Med brown, loose clay, occ pebbles
44	D1	C154	N/A	Stakehole fill	Med brown silty clay, occ ch fl
45	D1	C155	N/A	Stakehole fill	Light brown, loose silty clay, freq pebbles
46	D1	C158	N/A	Stakehole fill	Med brown silty clay, occ ch
47	D1	C159	N/A	Stakehole fill	Med brown silty clay, occ ch
48	D1	C160	N/A	Stakehole fill	Med brown silty clay, occ ch fl
49	D1	C161	N/A	Stakehole fill	Light brown silty clay, freq pebbles
50	D1	C166	N/A	Stakehole fill	Light brown silty clay, occ ch fl
51	D1	C163	N/A	Stakehole fill	Light brown silty clay, freq tiny pebbles
52	D1	C164	N/A	Stakehole fill	med brown silty clay, occ ch fl
53	D1	C165	N/A	Stakehole fill	Yellow brown silty clay, occ. charcoal fl, occ tiny pebbles
54	D1	C167	N/A	Stakehole fill	Med brown, compact clay, occ. ch fl
55	D1	C168	N/A	Stakehole fill	Med brown, friable clay, rare ch fl
56	D1	C173	N/A	Stakehole fill	Med brown, soft silty clay, occ ch fl, occ stone
57	D1	C174	N/A	Stakehole fill	Light brown, friable clay, occ ch fl

58	D1	C175	N/A	Burnt stake	Dark brown silty clay, freq. charcoal, freq pebbles+3 large stones
59	D1	C176	N/A	Stakehole fill	Med brown soft clay, freq small pebbles
60	D1	C177	N/A	Stakehole fill	Med brown, mod compact soft silty clay, freq pebbles
61	D1	C178	N/A	Stakehole fill	Med brown, soft clay, occ ch fl, occ sm pebbles
62	D1	C191	N/A	Stakehole fill	Light grey brown , soft clay, occ ch fl
63	D1	C190	N/A	Stakehole fill	Grey brown silty clay, occ ch fl
64	D1	C189	N/A	Stakehole fill	Dark brown silty clay, occ ch fl
66	D1	C185	N/A	Stakehole fill	Dark brown soft clay, rare ch fl
67	D1	C179	N/A	Stakehole fill	Med brown soft silty clay, freq pebbles
68	D1	C180	N/A	Stakehole fill	Med brown silty clay, pebbles
69	D1	C181	N/A	Fill	Dark brown friable clay
70	D1	C182	N/A	stake packing	Dark brown, compact clay, occ ch fl at top, 2 stones at S edge of cut-poss packing stones
71	D1	C183	N/A	Stakehole fill	Dark brown clay , pebbles
72	D1	C184	N/A	Stakehole fill	Dark brown clay, freq ch fl+frags
73	D1	C186	N/A	Stakehole fill	Med brown silty clay
74	D1	C187	N/A	Stakehole fill	Med brown silty clay, occ ch
75	D1	C188	N/A	Stakehole fill	med brown soft clay, occ ch fl
76	D1	C193	N/A	Stakehole fill	Light yellow brown silty clay, ch frags, 1 tiny burnt bone fleck
77	D1	C194	N/A	Stakehole fill	Light yellow brown soft sandy clay, occ ch fl
78	D1	C195	N/A	Stakehole fill	Light grey yellow silty clay, occ ch fl
80	D1	C198	N/A	Stakehole fill	Med grey brown soft clay, occ ch fl
81	D1	C199	N/A	Stakehole fill	Dark grey brown soft clay, occ ch fl
83	D1	C204	N/A	Stakehole fill	Dark brown, mod compact clay
86	D1	C206	N/A	stakehole fill	Med brown soft clay, ch fl, freq pebbles
87	D1	C208	N/A	Stakehole fill	Med brown soft silty clay
88	D1	C209	N/A	Stakehole fill	Dark brown silty clay, occ ch fl
90	D1	C210	N/A	Stakehole fill	Dark brown soft clay, ch, occ burnt bone
92	D1	C212	N/A	Stakehole fill	Dark brown, loose ch-rich clay, stones along edge-poss packing
93	D1	C215	N/A	Stakehole fill	Med brown, mod compact clay, occ ch fl
94	D1	C216	N/A	Stakehole upper fill	Dark brown, mod. compact charcoal rich clay
95	D1	C216	N/A	Stakehole lower fill	Grey brown soft clay, occ ch fl
96	D1	C217	N/A	Stakehole fill	Med brown clay, ch
97	D1	C218	N/A	Stakehole fill	Med brown silty clay, occ ch fl
98	D1	C220	N/A	Stakehole fill	Med brown silty clay
99	D1	C221	N/A	Stakehole fill	Med brown silty clay, occ ch fl
100	D1	C222	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
101	D1	C223	N/A	Stakehole fill	Med brown silty clay, occ ch fl
102	D1	C224	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
103	D1	C225	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
104	D1	C226	N/A	Stakehole fill	Med brown silty clay, freq ch fl
105	D1	C227	N/A	Stakehole fill	Med brown silty clay, occ ch fl
106	D1	C228	N/A	Stakehole fill	Med brown soft clay, occ ch fl
107	D1	C229	N/A	Stakehole fill	Med brown silty clay, occ ch fl
108	D1	C230	N/A	Stakehole fill	Light brown silty clay, v freq sm pebbles
109	D1	C135	N/A	Stakehole fill	Grey brown soft clay, occ ch fl
126	D1	N/A	C6	Stakehole	Subcircular in plan, 0.16d x 0.09l x 0.08w, NW-SE orientation, Sides near vert, base concave, top 0.10 T'D at NE by [127]
127	D1	N/A	C6	Stakehole	Sub-circular in plan, 0.10d x 0.10l x 0.9w, NW-SE orientation, Sides mod sloped, base

					flat,
128	D1	N/A	C7	Stakehole	Sub circular in plan, 0.08 x 0.11m
129	D1	N/A	C8	Poss stakehole	Circular in plan, 0.09d x 0.6dia, U-shaped in profile
130	D1	N/A	C8	Poss stakehole	Circular in plan, 0.12d x 0.7dia, U-shaped in profile, cut in SW by [131]
131	D1	N/A	C8	Poss stakehole	Oval in plan, 0.08d x 0.12l x 0.10w, NE-SW orientation, sides steep, base concave, cut in NE by 130+ in SE by 132
132	D1	N/A	C8	Poss stakehole	Circular in plan, 0.11d x 0.9dia, sides mod steep, base concave, cut in NW by 131
133	D1	N/A	C9	Stakehole	sub-circular in plan 0.06d x 0.12dia, SE side slightly undercut, others mod steep, base flat, cut in NE by [134]
134	D1	N/A	C9	Poss double stakehole	sub-oval in plan, 0.08d x 0.20l x 0.09w, NW-SE orientation, sides mod steep, base slopes down towards NW, cut in S by 133+in N by 211
135	D1	N/A	C109	Stakehole	Irreg in plan, 0.06d x 0.19l x 0.15w, NNE-SSW orientation, S side shallow+ irreg, others mod steep, base irreg.
140	D1	N/A	C22	Stakehole	circular in plan, 0.12d x 0.09dia, sides steep, base rounded
141	D1	N/A	C23	Stakehole	Oval in plan, 0.09d x 0.09l x 0.05w, N-S orientation, U-shaped in profile
142	D1	N/A	C24	Stakehole	Sub-square in plan, 0.06d x 0.09l x 0.07w, E-W orientation, sides mod steep, base concave
143	D1	N/A	C25	Stakehole	Circular in plan, 0.10d x 0.09dia, sides steep, base concave
144	D1	N/A	C26	Stakehole	Sub-circular in plan, 0.05d x 0.09l x 0.07w, NW-SE in orientation, sides steep, base flat
145	D1	N/A	C27	Stakehole	Oval in plan, 0.06d x 0.10l x 0.07w, NNE-SSW orientation, sides steep, base flat
146	D1	N/A	C35	Stakehole	Circular in plan, 0.06d x 0.08dia, sides mod steep, base concave
147	D1	N/A	C36	Stakehole	Circular in plan, 0.06d x 0.11dia, sides steep, base concave
148	D1	N/A	C37, C38	Stakehole	Sub-circular in plan, 0.04d x 0.12l x 0.10w, N-S orientation, sides near vert, base concave
149	D1	N/A	C39	Stakehole	Sub-circular in plan, 0.18d x 0.10dia, sides near vert, base concave
150	D1	N/A	C40	Stakehole	Circular in plan, 0.10d x 0.07dia, sides near vert, base concave
151	D1	N/A	C41	Stakehole	Circular in plan, 0.04d x 0.05dia, sides steep, base concave
152	D1	N/A	C42	Stakehole	Sub-circular in plan, 0.06d x 0.08l x 0.07w, NW-SE orientation, N side steep, S more gentle, base concave
153	D1	N/A	C43	Stakehole	Oval in plan, 0.09d x 0.10l x 0.08w, E-W orientation, sides near vert, base concave
154	D1	N/A	C44	Stakehole	Circular in plan, 0.08d x 0.07dia, sides steep, base concave
155	D1	N/A	C45	Stakehole	Circular in plan, 0.07d x 0.07dia, sides steep, base concave
156	D1	N/A	C29	Stakehole	Circular in plan, 0.07d x 0.08dia, sides mod steep, base rounded point
157	D1	N/A	C30	Stakehole	Sub-oval in plan, 0.05d x 0.07l x 0.05w, E-W orientation, sides v shallow, base concave
158	D1	N/A	C46	Stakehole	Circular in plan, 0.07d x 0.08dia, sides near vert base concave
159	D1	N/A	C47	Stakehole	teardrop-shaped in plan, 0.11d x 0.12l x 0.09w, N-S orientation, E side steep, W side irreg, base concave
160	D1	N/A	C48	Stakehole	Oval in plan, 0.02d x 0.08l x 0.05w, N-S orientation, SE side vert, NW side convex+ med steep, base concave
161	D1	N/A	C49	Stakehole	Kidney-shaped in plan, 0.07d x 0.08l, NE-SW orientation, sides steep, base flat generally
163	D1	N/A	C51	Stakehole	Sub-circular in plan, 0.06d x 0.07dia,
164	D1	N/A	C52	Stakehole	Oval in plan, 0.05d x 0.010l x 0.08w
165	D1	N/A	C53	Stakehole	Sub-circular in plan, 0.10d x 0.09dia

166	D1	N/A	C50	Stakehole	Circular in plan, 0.06d x 0.08dia, S side steeply sloped, N more gentle, base concave
167	D1	N/A	C54	Stakehole	Sub-rect in plan, 0.06d x 0.07w, NE-SW orientation, N+S corners rounded, S side stepped, others steep, base flat
168	D1	N/A	C55	Stakehole	Sub-oval in plan, 0.10d x 0.12l x 0.09w, N-S orientation, sides steep, base flat, generally
169	D1	N/A	C31	Stakehole	Circular in plan, 0.03d x 0.05dia, sides steep, base rounded
170	D1	N/A	C32	Stakehole	Oval in plan, 0.04d x 0.05l x 0.04w, E-W orientation, W side steep, E side shallow, Base rounded
171	D1	N/A	C33	Stakehole	Sub-circular in plan, 0.14d x 0.11l x 0.09w, sides vert, base flat
172	D1	N/A	C34	Stakehole	Sub-circular in plan, 0.09d x 0.80l x 0.07w, sides near vert, base concave
173	D1	N/A	C56	Stakehole	Sub-circular in plan, 0.13d x 0.13dia, sides steep, base slightly concave
174	D1	N/A	C57	Stakehole	Sub-circular in plan, 0.07d x 0.075dia, sides steep, base flat generally
175	D1	N/A	C58	Stakehole	Sub-oval in plan, 0.12d x 0.30l, E-W orientation, widest in W,
176	D1	N/A	C59	Stakehole	Sub-circular in plan, 0.010d x 0.12dia, sides mod steep, base rounded point
177	D1	N/A	C60	Stakehole	Irreg sub-circular in plan, 0.08d x 0.08 diasides irreg, base concave
178	D1	N/A	C61	Stakehole	Irreg in plan, 0.15d x 0.16w sides steep, base flat generally
179	D1	N/A	C67	Stakehole	Sub-circular in plan, 0.07d x 0.08dia, sides+base concave
180	D1	N/A	C68	Stakehole	Oval in plan, 0.10d x 0.08l x 0.7w, N-S orientation U-shaped in profile
181	D1	N/A	C69	Stakehole	Irreg in plan, 0.10d x 0.08l x 0.06w, N-S orientation, sides vert, base concave
182	D1	N/A	C70	Stakehole	Subcircular in plan, 0.09d x 0.07l x 0.06w, NW-SE orientation, sides vert, base concave
183	D1	N/A	C71	Stakehole	Sub-circular in plan, 0.06d x 0.07l x 0.05w, sides mod sloped, base concave, T'd by [128] in S
184	D1	N/A	C72	Stakehole	Circular in plan, 0.19d x 0.09dia, sides vert, base flat
185	D1	N/A	C66	Stakehole	Sub circular in plan, 0.07d x 0.09w, sides vert, base flat
186	D1	N/A	C73	Stakehole	Circular in plan, 0.05d x 0.08dia, sides mod steep, base flat
187	D1	N/A	C74	Stakehole	Oval in plan, 0.08d x 0.09l x 0.08w, sides vert, base flat
188	D1	N/A	C75	Stakehole	Oval in plan, 0.09d x 0.12l x 0.10w, N-S orientation, sides+base concave
189	D1	N/A	C64	Stakehole	Sub-oval in plan, 0.09d x 0.15w, sides mod steep, base concave
190	D1	N/A	C63	Stakehole	Oval in plan, 0.07d x 0.18l, N-S orientation, SE side gently sloped, others steeper, base flat generally+ slopes down towards N
191	D1	N/A	C62	Stakehole	Circular in plan, 0.13d x 0.11dia, U-shaped in profile
193	D1	N/A	C76	Stakehole	Oval in plan, 0.05d x 0.14l x 0.10w, sides shallow, base flat generally
194	D1	N/A	C77	Stakehole	Subcircular in plan, 0.07d x 0.06dia, sdes mod steep, base rounded
195	D1	N/A	C78	Stakehole	Oval in plan, 0.11d x 0.10l x 0.07w, E-W orientation, sides near vert, base flat
198	D1	N/A	C80	Stakehole	Oval in plan, 0.09d x 0.12l x 0.08w, N-S orientation, sides near vert, base concave
199	D1	N/A	C81	Stakehole	Sub circular in plan, 0.16 x 0.09 x 0.08, N-S orientation
204	D1	N/A	C83	Stakehole	Sub-oval in plan, 0.12d x 0.08l x 0.06w, E-W orientation, sides steep, base flat generally
206	D1	N/A	C86	Stakehole	Circular in plan, 0.05d x 0.11dia, sides v shallow, base roundrd point
208	D1	N/A	C87	Stakehole	Subcircular in plan, 0.05d x 0.08dia, E side steep, W side gentler, base concave

209	D1	N/A	C88	Stakehole	Circular in plan, 0.16d x 0.09dia, E side steep, W side more gentle, base concave
210	D1	N/A	C90	Stakehole	Sub-circular in plan, 0.07d x 0.09dia, sides mod steep, base concave
211	D1	N/A	C9	Stakehole	Circular in plan, 0.11d x 0.10dia, sides near vert, base concave, cut by [134] in SE
212	D1	N/A	C92	stakehole	Sub-circular in plan, 0.09d x 0.010dia, sides+base irreg+shallow
215	D1	N/A	C93	Stakehole	Circular in plan, 0.10d x 0.09dia, sides near vert, base rounded
216	D1	N/A	C94, C95	Stakehole	Sub-oval in plan, 0.30d x 0.28l x 0.15w, NE-SW orientation, W side convex, E side concave, base concave+ slopes down towards E
217	D1	N/A	C96	Stakehole	Circular in plan, 0.09d x 0.11dia, v shallow, no sides, concave base, cut by [218] in NE
218	D1	N/A	C97	Stakehole	Circular in plan, 0.07d x 0.10, v shallow no sides, base concave, cut by [217] in SW
219	D1	N/A	C14	Stakehole	Circular in plan, 0.08d x 0.12dia, sides mod steep, base rounded point
220	D1	N/A	C98	Stakehole	Sub-circular in plan, 0.08d x 0.09diasides mod steep base concave
221	D1	N/A	C99	Stakehole	Sub-circular in plan, 0.07d x 0.07dia, W side near vert, E side concave+mod steep, base round
222	D1	N/A	C100	Stakehole	Circular in plan, 0.07d x 0.09dia, sides irreg, base round, Cut by [223] in NE
223	D1	N/A	C101	Stakehole	Circular in plan, 0.12d x 0.14dia, sides steep, base concave, Cut by [222] in SW
224	D1	N/A	C102	Stakehole	Sub-circular in plan, 0.09d x 0.08dia, U-shaped in profile
225	D1	N/A	C103	Stakehole	Circular in plan, 0.09d x 0.09dia, U-shaped in profile
226	D1	N/A	C104	Stakehole	Oval in plan, 0.09d x 0.09l x 0.06w, NW-SE orientation, sides steep, base concave
227	D1	N/A	C105	Stakehole	Circular in plan, 0.06d x 0.07dia, U-shaped in profile
228	D1	N/A	C106	Stakehole	Circular in plan, 0.08d x 0.07dia, sides steep, base concave
229	D1	N/A	C107	Stakehole	Circular in plan, 0.05d x 0.07dia, Sides steep, base concave
230	D1	N/A	C108	Stakehole	Circular in plan, 0.7d x 0.9dia, sides slightly concave+mod steep, base concave

Finds:

C	Find	Material	Period	Pottery form	Artefact type	Comments
100	02E1330:100:1	Pottery	Middle Neolithic	Unidentified vessel	Body sherd	

Interpretation:

This subgroup {1004} is composed of 111 'stakeholes'. In plan these cuts do not seem to represent an actual building but represent a mass of holes over an area which measured 5.20m x 3.70m on the eastern side of the site. As such, it would be reasonable to suggest that the 'stakeholes' represent the repetitive location of a wooden footed article (note that the 'stakeholes' do not have driven pointed bases). Such an item could have been a loom or a frame for drying animal skins etc. As such it is not known if this area of activity was internal to a building or not.

Unfortunately, all of these features were heavily truncated through ploughing in recent times. The single sherd of pottery from (C100) was Middle Neolithic in date (Appendix 2.3).

4.2.4 SUBGROUP {1005}: Two drainage gullies

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
11	D1	C203	N/A	Charcoal deposit	V dark brown, loose gritty clay, mod ch fl+frags
13	D1	C201	N/A	Poss nat silting	Dark brown, heavy clay, occ ch fl, occ pebbles, rock crystal frag
19	D1	N/A	N/A	Charcoal spread	Med brown fill, ch fl
21	D1	N/A	N/A	In situ burning	Small burnt patch filled w/ch mixed w/dark clay, covering an area of 0.56m l x 0.38m
201	D1	N/A	0013	Poss.drainage gully	Linear in plan, 0.05m d x 2.42m L x 0.42m w, NE-SW orientation, SE side steep, NW side more gentle, flat base, cut narrows at SW end
203	D1	N/A	0011	Poss gully into which charcoal has settled	Rectangular in plan, NE-SW orientation and very shallow. 0.64L x 0.34W, max 0.07d.

Finds:
None

Interpretation:

The two drainage gullies [C203] and [C201] in subgroup {1005} were located to the north of {1004}. The *in situ* burning (C21) was located to the east of the stakeholes {1004} and the charcoal spread (C19) was located on the west side. No finds were retrieved and the gullies may be naturally formed features.

4.2.5 SUBGROUP {1006}: Pits

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
5	D1	C200	N/A	Poss fire pit	Dark brown clay, ch layer concentrated at base
16	D1	C192	N/A	Fill of pit	Dark grey silt, freq ch, 3 tiny burnt bone frags, freq sm stones
18	D1	C231	N/A	Charcoal spread	Black, ch-rich soil+burnt clay, burnt bone, occ sm stones
28	D1	C162	N/A	In situ burning	Dark burnt clay+charcoal flecks
79	D1	C196	N/A	Small pit fill	Med brown, crumbly clay ch fl, 2 stones in centre
84	D1	C205	N/A	Fill of small pit	Med. Brown, friable clay, charcoal flecks, small pebbles
89	D1	C214	N/A	Oval pit fill	Light brown crumbly clay
111	D1	N/A	N/A	In situ burning	burnt orange clay + light brown clay within [231]
162	D1	N/A	C28	Shallow pit	Sub-circular in plan, 0.08d x 0.86l x 0.56w, E-W orientation, sides very shallow
192	D1	N/A	C16	Pit	Sub-oval in plan, 0.35d x 5.06l x 3.95w, N-S orientation, E side steep, others more gentle, Base flat+slopes slightly down towards N, 2 shallow pits cut into base
196	D1	N/A	C79	Shallow pit	Sub-oval in plan, 0.08d x 0.33l x 0.28w, E-W orientation, sides v shallow, base concave
200	D1	N/A	C5	Fire pit	Oval in plan, 0.23m d x 1.90m l x 0.75m w, E-W orientation, N+S sides steep, E+W sides less so, base flat
205	D1	N/A	C84	Small shallow pit	Oval in plan, 0.12d x 0.45l x 0.31w, E-W orientation, sides concave, S side steep others less so, base concave
214	D1	N/A	C89	Pit	Oval in plan, 0.12d x 0.54l x 0.40w, N-S orientation, SW side mod steep, others more gradual, base flat
231	D1	N/A	C18	Shallow depression/Pit	Very shallow pit/depression, circular in plan, 0.94dia, 0.01-03d

Finds:

C	Find	Material	Period	Pottery form	Artefact type	Comments
5	02E1330:5:1	Flint				
			Late Neolithic/Early Bronze Age	Unidentified vessel	Bodysherd	
16	02E1330:16:1	Decorated pottery	Beaker			

16	02E1330:16:2	Pottery	Late Neolithic/Early Bronze Age Beaker		Base sherd	
16	02E1330:16:3	Pottery	Late Neolithic/Early Bronze Age Beaker	Unidentified vessel	Neck sherd	
16	02E1330:16:4	Pottery	Early Bronze Age Beaker		Base angle sherd	
16	02E1330:16:5	Pottery	Early Bronze Age Beaker		Bodysherd	
18	02E1330:18:1	Pottery				
18	02E1330:18:2	Flint				
18	02E1330:18:3	Flint				
18	02E1330:18:4	Worked flint				
79	02E1330:79:1	Pottery frags	Early Bronze Age Beaker		Bodysherd	
79	02E1330:79:2	Pottery frags	Early Bronze Age Beaker		Bodysherd	
79	02E1330:79:3	Pottery frags	Early Bronze Age Beaker		Bodysherd	

Interpretation:

The probable fire pit [C200] in subgroup {1006} was located to the south of the stakeholes {1004}. This was probably used for cooking as the feature was located in a possible area domestic of domestic activity. The pit [C192] was one of the largest on the site and was filled with (C16) a charcoal-flecked context, from which tiny fragments of burnt bone and five sherds of pottery were recovered. However, this was located west of the main area of activity. The other pits [C162], [C196], [C205], [C214], and [C231] were distributed around the stakeholes. The pottery from (C16) was identified as two Late Neolithic/Early Bronze Age Beaker vessels and a number of other probable Beaker sherds (Appendix 2.3). A charcoal sample was also retrieved from the fill of the fire pit (C16) and according to O'Carroll (Appendix 2.2) the sample mainly comprised alder (*Alnus glutinosa*) with a small amount of blackthorn (*Prunus spinosa*). The charcoal from this sample was riddled with insect holes, which suggests that the wood was lying exposed for some time prior to its use. A radiocarbon date was retrieved from this sample and returned a date of 4971 \pm 44 BP (WK – 18551) (Appendix 2.1). The 2 Sigma calibrated results from this charcoal produced a date of Cal 3810-3650BC. The discrepancy between the dates of the pottery and the charcoal sample is considerable and it is likely that the sample may have been contaminated prior to dating.

4.2.2 SUBGROUP {1007}: Six Postholes

Contexts:

C	Area	Fill of	Filled with	Interpretation	Description
10	D1	C136	N/A	Possible burnt post	Dark brown, friable gritty sand, occ ch fl, lge flat stone lining W side of cut
12	D1	C137	N/A	Burnt post	Dark brown, loose gritty clay, ch fl+frags- more concentrated towards bottom of fill
17	D1	C202	N/A	Post packing	Dark brown, loose clay, lge sub-ang broken stones
20	D1	C138	N/A	Possible burnt post	Med dark ch-rich silty clay
82	D1	C213	N/A	Fill	Charcoal rich fill with small slate slabs
85	D1	C207	N/A	Posthole fill	Dark brown black, soft friable soil, stones lining cut
136	D1	N/A	C10	Probable posthole	Triangular in plan, 0.17d x 0.23N-S x 0.19E-W, W side near vert, E side concave+ steep, base concave
137	D1	N/A	C12	Probable posthole	Sub-square in plan, 0.28d x 0.33l x 0.28w, N-S orientation, sides mod steep, base flat
138	D1	N/A	C20	Posthole	Irreg in plan, 0.15m d x 0.41m l x 0.27m w, E-W orientation, E side gently sloped, others

					steeper, base rounded point, narrow, deep depression in W side
202	D1	N/A	C17	Large posthole	Sub-rectangular in plan, 0.32m d x 1.10m L x 1.00m w, N/S orientation, sides mod. deep, base flat
207	D1	N/A	C85	posthole	Oval in plan, 0.15d x 0.08l x 0.05w, NW-SE orientation, E side mod steep, W side undercut, base round, cut inclines slightly to the E
213	D1	N/A	C82	Posthole	Oval in plan, 0.54m long x 0.25m wide x 0.15m deep.
234	D1	C128	N/A	In situ burning	Fire reddened sand in base of cut

Finds:

None

Interpretation:

Subgroup {1007} consisted 6 postholes and their respective fills. No definite structure can be identified from these postholes in plan and no finds were retrieved from the fills. Four of the postholes ([C137], [C207], [C136], [C213]) were situated adjacent to each other and were located in the same area as the stakeholes. Three of these were in a line [C137], [C136], [C213] and were aligned north-south. The other two postholes ([C202] and [C138]) were located to the east of the main area of activity.

The implication is that these postholes formed at least part of a building: Building 1. Many of these posts appear to have been burnt *in situ* and this could reflect some deliberate or accidental destruction of the site.

GROUP 2 DISCUSSION: Prehistoric Activity

Group	Subgroup	Subgroup type	Period by finds/stratigraphy	Period by interpretation	Group Interpretation
2	1002	2 hearths, a pit and 2 burnt spreads	Early Neolithic	Early Neolithic	Early Neolithic
2	1003	Pit with 13 stakeholes	Middle Neolithic	Middle Neolithic	Middle Neolithic
2	1004	Stakeholes	Middle Neolithic	Middle Neolithic	Middle Neolithic
2	1005	2 drainage gullies	Prehistoric	Prehistoric	Prehistoric
2	1006	7 pits	Late Neolithic/Early Bronze Age Beaker	Late Neolithic/Early Bronze Age Beaker	Late Neolithic/Early Bronze Age Beaker
2	1007	Postholes	Prehistoric	Prehistoric	Prehistoric

Group 2 represents a probable multi-period occupation site.

The Early Neolithic is represented by the features in subgroup {1002} which were located to the northeast of the main area of activity on the site. The burnt spread [C237] contained 11 sherds of an Early Neolithic Carinated bowl, burnt bone and a flint scraper. Perhaps this was a dump for burnt material from the two possible hearths [C246], [C247] nearby. Pottery fragments were also found in [C246] and [C247]. (C241) the basal fill of [C247] contained 41 sherds and fragments of at least one Early Neolithic Carinated bowl (Appendix 2.3)

The Middle Neolithic is represented by features in the subgroups {1003} and {1004}. The subgroup {1003} consisted of a pit [C112] which was located at the southwestern end of the concentration of activity on the site. A total of 13 stakeholes [C113], [C114], [C115], [C116], [C117], [C118], [C119], [C120], [C121], [C122], [C123], [C124], [C125] were cut into the base of the pit. It is possible that this pit formed the base to an upstanding structure such as a temporary hut or a rack for hanging meat. The concentrations of stones found in the backfill may indicate that there was some

form of stone surface surrounding to the pit, which had collapsed into it. The pit/hollow and stakeholes were filled with a charcoal-rich fill (**C4**) containing prehistoric pottery, burnt bone, and a hazelnut shell. The prehistoric pottery from the fill (**C4**) was identified (Appendix 2.3) as Middle Neolithic Impressed Ware and consisted of a bipartite bowl.

The large group of stakeholes in subgroup {1004} probably represented the repetitive location of a wooden footed article (note that the 'stakeholes' do not have driven pointed bases). Such an item could have been a loom or a frame for drying animal skins etc. As such it is not known if this area of activity was internal to a building or not. Unfortunately, all of these features were heavily truncated through ploughing in recent times. The single sherd of pottery from (**C100**) was Middle Neolithic in date (Appendix 2.3).

The Late Neolithic/Early Bronze Age Beaker period is represented by a large number of pits in subgroup {1006}. The pit [**C192**] was one of the largest on the site and was filled with (**C16**) a charcoal-flecked context, from which tiny fragments of burnt bone and five sherds of pottery were recovered. The pottery from (**C16**) was identified as two Late Neolithic/Early Bronze Age Beaker vessels and a number of other probable Beaker sherds (Appendix 2.3). A charcoal sample was also retrieved from the fill of the fire pit (**C16**) and according to O'Carroll (Appendix 2.2) the sample mainly comprised alder (*Alnus glutinosa*) with a small amount of blackthorn (*Prunus spinosa*). The charcoal from this sample was riddled with insect holes, which suggests that the wood was lying exposed for some time prior to its use. A radiocarbon date was retrieved from this sample and returned a date of 4971 \pm 44 BP (WK – 18551) (Appendix 2.1). The 2 Sigma calibrated results from this charcoal produced a date of Cal 3810-3650BC. The discrepancy between the dates of the pottery and the charcoal sample is considerable and it is likely that the sample may have been contaminated prior to dating.

Undated probable prehistoric activity in Group 2 consisted of 2 drainage gullies in subgroup {1005} and a scatter of postholes in subgroup {1007}. Due to the close proximity of the gullies and the postholes to the large group of stakeholes in subgroup {1003}, it is possible that these features were also Middle Neolithic in date.

GROUP 3: Post Medieval Activity

3.1 SUBGROUP {1008}: Two Ditches

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
235	D1	242	N/A	Fill	Dark grey brown
242	D1	N/A	235	Ditch	Linear in plan, running NW-SE, perpendicular to [C11], cut by [C12]
243	D1	N/A	258	Ditch	Linear in plan, running NE-SW, perpendicular to [C10]
248	D1	243	N/A	Fill	Dark grey brown

Finds:

C	Find	Material	Period	Pottery Form	Artefact Type	Comments
242	02E1330:242:1	Pottery	Early Neolithic		Rimsherd	
242	02E1330:242:2	Pottery	Early Neolithic		Bodysherd	
242	02E1330:242:3	Pottery	Early Neolithic		Shouldersherd	
242	02E1330:242:4	Pottery	Early Neolithic		Bodysherd	
242	02E1330:242:5	Pottery	Early Neolithic		Bodysherd	
242	02E1330:242:6	Pottery	Early Neolithic			
242	02E1330:242:7	Pottery	Early Neolithic		Bodysherd	
242	02E1330:242:8	Pottery	Early Neolithic			
242	02E1330:242:9	Pottery	Early Neolithic			
242	02E1330:242:10	Pottery	Early Neolithic			

Interpretation:

The ditch features found flanking the site at the eastern end relate to a more recent, undated, period of activity where they served as field boundaries and sources for the modern field boundary bank. The ditch with the greatest length [C242] runs parallel with a current field boundary, which would provide further support to these features having a relatively recent agricultural origin. Pottery sherds recovered from [C242] were sent for specialist analysis and returned an Early Neolithic date (Appendix 2.3).

GROUP 3 DISCUSSION: Post Medieval Activity

Group	Subgroup	Subgroup type	Period by finds / stratigraphy	Period by interpretation	Group Interpretation
3	8	Two ditches			

The ditches are probably a later agricultural addition to the site; no diagnostic finds were recovered from them.

GROUP 4: Topsoil

4.4 SUBGROUP {1009}: Topsoil

Contexts:

C	Area	Fill of	Filled by	Interpretation	Description
1	Site	N/A	N/A	Topsoil	

Finds:

None

Interpretation:

Subgroup {1009} is the topsoil that covered the site.

GROUP 4 DISCUSSION: Topsoil

Group	Subgroup	Subgroup type	Period by finds / stratigraphy	Period by interpretation	Group Interpretation
4	9	Topsoil			

The topsoil contained a variety of finds, many of which are disturbed from the underlying prehistoric levels.

4.5 SYNTHESIS

Open Area 1: Geology and topography

The sites at Donaghmore were all located on a low, rocky ridge that lay roughly on an east/west orientation. Site 108, Donaghmore 1 is situated in a sheltered location at c. 38m OD overlooked by a small rock outcrop (of c. 42.5m OD) to the south and c. 41.8m OD to the east. The site is well drained and sheltered with good views to all sides. A stream was located c.100m to the south (Ch19.460) on lower ground at c. 31m OD. In addition, to the north is a second stream (19.860) at c. 27m OD. This sheltered location would have served as an ideal location for the establishment of a settlement (temporary or permanent).

The glacial nature of the sand and stone-strewn natural sub-soil ensures the area is well drained. The top of the ridge was broad and while not quite flat it was somewhat plateau-like but with a slight north-west facing aspect, again maximising shelter from the prevailing south-westerly weather.

Open Area 2: Prehistoric Activity

Group 2 represents a probable multi-period occupation site.

The Early Neolithic is represented by the features in subgroup {1002} which were located to the northeast of the main area of activity on the site. The burnt spread [C237] contained 11 sherds of an Early Neolithic Carinated bowl, burnt bone and a flint scraper. Perhaps this was a dump for burnt material from the two possible hearths [C246], [C247] nearby. Pottery fragments were also found in [C246] and [C247]. (C241) the basal fill of [C247] contained 41 sherds and fragments of at least one Early Neolithic Carinated bowl (Appendix 2.3)

The Middle Neolithic is represented by features in the subgroups {1003} and {1004}. The subgroup {1003} consisted of a pit [C112] which was located at the southwestern end of the concentration of activity on the site. A total of 13 stakeholes [C113], [C114], [C115], [C116], [C117], [C118], [C119], [C120], [C121], [C122], [C123], [C124], [C125] were cut into the base of the pit. It is possible that this pit formed the base to an upstanding structure such as a temporary hut or a rack for hanging meat. The concentrations of stones found in the backfill may indicate that there was some form of stone surface surrounding to the pit, which had collapsed into it. The pit/hollow and stakeholes were filled with a charcoal-rich fill (C4) containing prehistoric pottery, burnt bone, and a hazelnut shell. The prehistoric pottery from the fill (C4) was identified (Appendix 2.3) as Middle Neolithic Impressed Ware and consisted of a bipartite bowl.

The large group of stakeholes in subgroup {1004} probably represented the repetitive location of a wooden footed article (note that the 'stakeholes' do not have driven pointed bases). Such an item could have been a loom or a frame for drying animal skins etc. As such it is not known if this area of activity was internal to a building or not. Unfortunately, all of these features were heavily truncated through ploughing in recent times. The single sherd of pottery from (C100) was Middle Neolithic in date (Appendix 2.3).

The Late Neolithic/Early Bronze Age Beaker period is represented by a large number of pits in subgroup {1006}. The pit [C192] was one of the largest on the site and was filled with (C16) a charcoal-flecked context, from which tiny fragments of burnt bone and five sherds of pottery were recovered. The pottery from (C16) was identified as two Late Neolithic/Early Bronze Age Beaker vessels and a number of other probable

Beaker sherds (Appendix 2.3). A charcoal sample was also retrieved from the fill of the fire pit (C16) and according to O'Carroll (Appendix 2.2) the sample mainly comprised alder (*Alnus glutinosa*) with a small amount of blackthorn (*Prunus spinosa*). The charcoal from this sample was riddled with insect holes, which suggests that the wood was lying exposed for some time prior to its use. A radiocarbon date was retrieved from this sample and returned a date of 4971 \pm 44 BP (WK – 18551) (Appendix 2.1). The 2 Sigma calibrated results from this charcoal produced a date of Cal 3810-3650BC. The discrepancy between the dates of the pottery and the charcoal sample is considerable and it is likely that the sample may have been contaminated prior to dating.

Undated probable prehistoric activity in Group 2 consisted of 2 drainage gullies in subgroup {1005} and a scatter of postholes in subgroup {1007}. Due to the close proximity of the gullies and the postholes to the large group of stakeholes in subgroup {1003}, it is possible that these features were also Middle Neolithic in date.

Open Area 3: No discernable activity.

From site use during the Neolithic period through to activity in the post-medieval period there is no evidence for archaeological activity at Site 108. This is despite Site 108 being in an area of concentrated Early Medieval activity.

Open Area 4: Post-medieval and modern activity

The land was enclosed during the post-medieval period and boundaries {1008} were dug. Modern topsoil {1009} was particularly thin over the site and ploughing had truncated the underlying archaeological remains considerably.

Open Area 5: Topsoil

The topsoil contained a variety of finds, many of which are disturbed from the underlying prehistoric levels.

5 DISCUSSION

5.1 Realisation of the original research aims

This section examines the extent to which preliminary assessment of the results of the excavation reveal how the original research aims have been or can be answered.

Original Research Questions (ORQ) were prepared after the results of the test-trenching exercise were known and before the rescue excavations began. The following are the Original Research Questions relating to the excavation at Site 108 Donaghmore 1 and Responses (R) based on preliminary assessment of the site data.

ORQ 1: *How many buildings are present, what were the construction methods and are there different phases of construction and use?*

R: Evidence was recovered for one possible structure in the form of an alignment of three substantial postholes, as well as over 100 stakeholes. It is also possible that there was a small sunken shelter on the site.

ORQ 2: *What are the dates of occupation and how does the site change through time? Do any parts of the site relate to the two souterrains located nearby?*

R: All the pottery recovered would seem to indicate that the site was not in use over any great length of time as the pottery is identical in terms of construction and appearance. As a result there is little evidence for this site changing substantially from when it was first established to when it was eventually abandoned. The lack of finds from any period other than late Neolithic would indicate that this site is not in any way connected to either souterrain located nearby. However the ditch features found flanking the site may relate to the early Christian period where they served as field boundaries. Unfortunately as no finds of diagnostic value were recovered from either of these ditches this remains as speculation.

ORQ 3: *Are there areas where different activities were undertaken?*

R: The main centres of activity were the concentrations of stakeholes and pits and the two linear ditches. The ditches were cut into a layer lying on top of the prehistoric horizon so it is safe to say that neither phase was related to the other.

ORQ 4: *What is the nature of the finds and the environmental evidence? What type of evidence is present here and do they give indications for specific activities?*

R: The vast majority of finds from this area were pottery sherds; only a few flint artefacts were recovered.

ORQ: *Is there any evidence for burial or ritual activity?*

R: No.

5.2 Conclusions

Discussion of Neolithic and Early Bronze Age activity at Donaghmore 1 (Site 108), Co. Louth (by Neil Carlin M.A and Dr. Jessica Smyth M.A PhD)

Donaghmore 1 (Site 108) is located in Donaghmore townland, c.3km southwest of Dundalk, Co. Louth. The site was situated on a south-facing slope near the top of a low broad east-west ridge within a low-lying typically well-drained landscape that undulates between c. 20m – 40m O.D. It is overlooked by two small rock outcrops to the south and east and there are two streams located c.100m to the south and north,

respectively. Donaghmore 1 is less than 4km southwest of Dundalk Bay and 3km south of the Castletown River.

In the southwest quadrant of the site lay a cluster of over 100 stakeholes and several pits and postholes. At the southwest edge of this cluster lay a pit/hollow containing thirteen stakeholes. Both the pit/hollow and the stakeholes were filled with a charcoal-rich fill that contained burnt bone, a hazelnut shell and 20 sherds of a Middle Neolithic Impressed Ware Bipartite bowl (Appendix). A single worn sherd of Middle Neolithic Impressed Ware came from one of the stakeholes [C222] (Appendix). Hazel and oak charcoal from another stakehole [C161] was dated to 4971±44 BP (3940–3650 cal BC; WK-18551).

At the eastern edge of the site, northeast of the main area of activity, a burnt spread [C237] was excavated. It produced 11 sherds of an Early Neolithic carinated vessel, burnt bone and a flint scraper. Two possible hearths, [C246] and [C247], lay nearby. The basal fill of [C247] contained 41 sherds and fragments of at least one Early Neolithic Carinated vessel. Two ditches lay immediately to the east of these features. Four sherds of Early Neolithic Carinated pottery were recovered from one ditch, and six sherds from the second ditch. This latter ditch ran parallel with a current field boundary suggesting that both features had a relatively recent agricultural origin and that the Early Neolithic pottery was residual.

The increasing amount of evidence for timber, rectangular houses in Ireland in the Early Neolithic has been well documented (Armit et al. 2003; Cooney 1999; Grogan 1996; 2002, 2004). Less well documented however, are the many other forms of Neolithic activity spread across the landscape. Flint scatters, arcs of postholes and stakeholes, metalised surfaces, ditches, enclosures and pits continue to be uncovered, almost entirely within the fast-moving commercial archaeology sector. Indeed, a recent review of the Neolithic remains uncovered on Irish sites from 1970 to 2002 (Smyth 2007) has demonstrated that the 'characteristic' early timber houses represent only a fraction of early activity. Just as common are sites such as Lissenhall Little 2, Co. Dublin, where pits, a hearth and a number of stakeholes were uncovered (Reilly 2003); the Hill of Rath, Co. Meath, where a scatter of postholes, stakeholes and several pits were excavated (Duffy 2002); or Cherryville, Co. Kildare, where a number of burnt mounds and burnt layers were found to contain lithics, early Neolithic pottery & bone (Breen 2003a, 2003b; Thaddeus Breen, pers. comm.). The apparently isolated hearths and burnt spread at Donaghmore 1 would seem to represent short-term occupation of the area in the Early Neolithic, perhaps linked to the periodic exploitation of local resources. Early Neolithic Carinated pottery from several sites in the vicinity such as Faughart Lower 5, Littlemill 1 and Newtownbalregan 6, Co. Louth (Delaney 2006; Ó Donnchadha 2003; Bayley 2004; Grogan and Roche 2006a, 2006b, 2005) indicate that the area saw a high degree of activity in early prehistory. At Littlemill 1, the remains of a rectilinear post-built building were uncovered, suggesting that activity in the area ranged from intensive or relatively fixed to more sporadic and shorter-term.

The identification of Early Neolithic Carinated pottery at Donaghmore 1 (Appendix) is useful in looking in broad terms at early prehistoric activity in north Louth and across eastern Leinster. However, the relatively broad date range of Early Neolithic Carinated pottery – a couple of centuries at least – means that a date based solely on pottery identification is of little use in addressing questions of sequence and chronology in the early 4th millennium BC. Currently, emerging short-life dates for Early Neolithic timber houses are suggesting that this activity may have taken place over two centuries or less, from approximately 3800 BC to 3650/3600 BC (McSparron 2003; Smyth 2007b; Alex Bayliss, pers comm.). Such evidence poses

new questions about the nature of settlement at the very beginning of the Irish Neolithic, at c.4000 BC onwards, and in this respect charcoal from the hearths might be used to give a tighter indication of the date of activity at Donaghmore 1, information potentially not of only regional but national importance.

The wood charcoal date and pottery identification indicate that the stakehole cluster and at least some pits date to the Middle Neolithic. The author observed that the stakeholes did not form a regular building plan but seemed to represent the repeated siting of a wooden structure over an area approximately 5.20m x 3.70m. The fact that the stakeholes did not have “driven pointed bases” suggested that they represented the impressions of wooden-footed object such as a loom or drying frame rather than the frame of a building or buildings. We know very little about the nature of Middle Neolithic settlement in Ireland, even less about the building techniques employed, and to discount the remains at Donaghmore 1 is perhaps a little hasty. Relative to the number of Early Neolithic houses that have been uncovered, the number of identifiable Middle Neolithic structures is quite small. Indeed, a significant number of sites dated by pottery or charcoal samples to the mid-late fourth millennium BC often lack structural remains. On the Middle Neolithic sites that do yield structural evidence, there is often a lack of clearly defined building forms. At Townleyhall 1 & Townleyhall 2, Co. Louth, for example, the clusters of stakeholes uncovered lacked a coherent pattern and could only be interpreted as the remains of a series of temporary, perhaps light, structures erected on the same spot over a period of time (Liversage 1960; Eogan 1963; although see Leon 2005: 17). At Knowth, Co. Meath, a dark habitation layer overlay the early Neolithic remains but was partially covered by the main passage tomb. This layer contained several concentrations of stakeholes, some of which formed arcs that were interpreted as the partial remains of circular houses. At least ten Middle Neolithic dwellings were identified in this way. Many more stakeholes from across the area could not be tied into any logical plan but were thought to represent successive phases of house-building (Eogan & Roche 1997: 65).

The scatter of stakeholes and pits at Donaghmore 1 could be interpreted as the remains of a Middle Neolithic occupation site. While many of the features on site appeared heavily truncated through modern ploughing, the nature of the surviving evidence and the relatively small amount of lithics and pottery recovered suggest that the period of occupation was short-lived or periodic in nature. This activity appears to be contemporary with that at Littlemill 1, Co. Louth, which had pits containing sherds of Middle Neolithic Impressed Ware (Grogan and Roche 2006b). Like Donaghmore 1, Littlemill 1 also yielded evidence for Early Neolithic activity. Another parallel is the site excavated at Townleyhall 2, Co. Louth (Eogan 1963), approximately 35km to the south of Donaghmore 1. Here, underneath a passage tomb, lay an occupation layer measuring approximately 16m x 11m and containing 142 stakeholes. Nine hearths were also excavated, some showing traces of intense, prolonged burning. A relatively large amount of carbonised cereal grains, charred hazelnut fragments and lithics (including 46 hollow scrapers) were recovered, as well as a number of sherds of Middle Neolithic Impressed Ware (Grogan and Roche 2006b).

The scatters of Middle Neolithic material recovered across Louth and Meath do not give the impression of substantial and permanent dwellings at the centre of Neolithic social life. This observation is not new - Grogan has noted that the houses of the Middle and Later Neolithic “appear to be relatively simple domestic dwellings, lacking the status or symbolism of the large rectangular sites”. This change, he suggests, “reflects a primarily a change in the range of house-centred activities, as well as a possible reduction in the social role and status of the buildings themselves” (Grogan 2002: 524). Anthropological research has demonstrated that even highly mobile

groups, who establish a new settlement every few years, can ascribe a wealth of meaning to the house (e.g. Rivière 1995; Waterson 1995). Moreover, it has been shown that groups who place the house at the very heart of social organisation can still build very unexceptional structures, impermanent and mobile and lacking any elaborate symbolism (Carsten 1995: 107). However, the contrast between the evidence from the Early Neolithic to the Middle Neolithic evidence does suggest that a great deal of meaning and symbolism had shifted from the houses to other realms such as the human body or the sacred space enclosed within the kerbs of the great passage tombs. It is only with the appearance of Grooved Ware in Ireland, in the late Neolithic, that buildings begin once more to display some formal elements, such as an emphasis on the hearth and on the entrance.

Evidence for Beaker activity dating to the start of the Early Bronze Age was also discovered on a multi-period excavation at Donaghmore 1, Co. Louth. Other Beaker associated features were excavated (1km and 1.5km to the north, respectively) in Newtownbalregan townland by David Bayley (2005a; 2005b) with additional Beaker evidence also being noted to the north at Carn More (Bayley (2005c) as part of the same investigations. When combined with the previously known evidence, this suggests there was much Beaker and Early Bronze Age activity in the locale.

Beaker associated features were excavated on four sites along the route of the Dundalk Western Bypass: Donaghmore 1 (Bailey and Ryan 2006); Newtownbalregan 2, (Bayley 2005a), Newtownbalregan 5 (Bayley 2005b) and Carn More 5 (Bayley 2005c). Located within the north western extent of the central plain of Co. Louth, the route transects the Castletown River and traverses the low-lying landscape undulating between c.20 – 40m O.D to the west of Dundalk Bay and south of the Carlingford Mountains. The soils in the area are predominantly brown earths and brown podzolics, which are typically light well-drained soils that would have provided an attractive area for settlement and burial purposes (Cooney 1987a, 130; Aalen et al 1997, 16).

The Beaker associated features at Site 108, Donaghmore 1 consisted of two pits that occur as part of a spatially discrete cluster of pits, postholes and a stakehole concentration date to the Early and Middle Neolithic. A very large but shallow sub-oval pit [C192] in {1005} (5.06m x 3.95m x 0.35m) was filled with a dark coloured charcoal-rich soil and was located in the western extent of this complex. It contained a large quantity of small stones, tiny fragments of burnt bone (species currently unidentified) and five sherds from two Beaker vessels. The charcoal was identified by O'Carroll (Appendix 2.2) as Alder (*Alnus glutinosa*) and Blackthorn (*Prunus spinosa*) which was riddled with insect holes suggesting that the wood was lying on the ground for some time before its collection and that it was used for kindling. Another sub-oval pit (0.33m x 0.28m x 0.08m) was situated on the opposite side of the complex. It was filled with a single deposit of brown clay that contained three small sherds from a single Beaker pot.

The Beaker aspect of the ceramic assemblage from Donaghmore 1 is small and only consists of eight sherds of pottery representing three 'fine' Beaker vessels (Grogan and Roche, this report). The sherds are worn, highly fragmentary and can not be refitted. Thus, a detailed evaluation is not possible; however, the occurrence of "simple horizontally arranged zonal ornament suggests that that the pottery is part of the early Beaker tradition dated to c.2450-2300 BC" (Grogan and Roche, this report). One of the vessels is made from a very high quality fabric similar to the Beakers from the neighbouring sites of Newtownbalregan 2 and 5. Burnt accretions on one of the vessels from the large pit suggest that it was used for cooking.

The occurrence of Beaker pottery in two features indicates that at least some of the activities from this multi-period site date to the start of the Early Bronze Age. Beakers emerged in Ireland c.2500 BC and their use appears to have ceased c.1900 BC (Brindley 2005, 334; 2007, 321). Given that this pottery is not of a late Beaker style, it seems most likely that the Beaker activity here dates to the earlier part of this range: c.2400–2200 BC.

In the absence of radiocarbon dating of any of the Beaker features, it remains possible that some of this material may be in a residual context. It is significant to note that although no lithics were recovered from ostensibly Beaker contexts, Neilis (Appendix) observed that bipolar reduction technology dominated the assemblage and that chipped stone appears to be “more specifically related to activity in the Final Neolithic/Early Bronze Age”. Significantly, two thumbnail scrapers were found on site albeit in contextual association with the Early Neolithic pottery. This form of small convex end scraper (20–30mm) which has the same breadth and length, steep invasive pressure flaked retouch on all sides and a flat bulbar end, is chronologically diagnostic of Beaker activity (Lehane 1983, 131; Dillon 1997; Edmunds 1995, 141; also see Woodman *et al* 2006, 160–1). These are a common feature of many Irish Beaker sites (see Carlin 2005a; 2005b) and have been found in significant numbers on sites such as Newgrange (O’Kelly 1983), Knowth (Eogan and Roche 1997), Co. Meath; Ballynagilly, Co. Tyrone (Apsimon 1976, 22–7), Lough Gur, Co. Limerick (Grogan and Eogan 1987) and Roughan Hill, Co. Clare (Jones 1998). Thumbnail scrapers are most certainly not an Early Neolithic tool type and their occurrence with sherds of Carinated Bowls informs us that one of these artefacts is residual. It seems more probable that the earlier artefact is not in its original context and that the pit and the spread containing the scrapers date to the Beaker period.

The Beaker activity forms part of a long history of episodic activity at Donaghmore 1 stretching over a millennium at the very least (3700–2400 BC). Most of the features from this time span belong to a dense and tight cluster that appears to be concentrated on a particular location. It seems remarkable that none of the Beaker features cut into any of the earlier ones, despite their extreme proximity to each other.

The small assemblage of Beaker pottery and associated artefacts may suggest that the Early Bronze Age activity here was short term or very peripheral. The sheer size (5.06m x 3.95m) of the pit which produced five Beaker sherds suggests that this may have had a very particular function. Its fill may be unconnected with its use and may simply represent the use of readily available material to fill a very large hole. This hypothesis is supported by the presence of burnt bone and charcoal in a context that was dominated by unburnt stone.

The typical Beaker site in Ireland consists of occupational spreads and pits and postholes that often lack any recognisable pattern (see Carlin 2005b); however, Beaker pits are rarely longer than 1.5m and the large feature at Donaghmore is without comparison.

Two Beaker pits excavated at Donaghmore 1 represented the re-use of a site that was previously used for episodic activity in the Early and Middle Neolithic. One of these pits was extremely large and may have been associated with cooking. The ceramic assemblage from this site was very small and the Early Bronze Age activity appears to have been of a short duration. A larger Beaker assemblage was recovered from pits excavated at Newtownbalregan 2, less than 1km north of this, at what appears to be a short term occupation possibly associated with feasting. A rare form of Northern and Central European pottery: a polypod bowl was found to have

been deposited in an upright position within one of these pits. Less than 500m away, the investigations at Newtownbalregan 5 revealed a circular arrangement of Beaker pits and posts representing either a structure or a pit circle. An Early Bronze Age cemetery complex at Carn More 5, Co. Louth situated 4km to the north east included a Bowl-associated cremation pit that was sealed by a cairn and encircled by four cists containing Bowl burials. Beaker sherds and a Bowl decorated in a typical Beaker fashion occurred within this cairn (see Grogan and Roche 2005b).

The deliberate deposition of occupational debris derived from middens into pits was a consistent feature of the Beaker evidence and this was particularly the case at both Newtownbalregan sites. Another recurrent aspect of these Beaker sites is their occurrence of multi-period sites with evidence for previous Neolithic activity as discovered at Donaghmore 1, Newtownbalregan 5 and Carn More, successive Bronze Age activity was also noted on the latter two sites. The continual albeit episodic use and re-use of these places suggests that they were regarded as important in prehistory and that the cultural and/or physical aspects of their location remained attractive to them over a long duration.

All of these characteristics are typical of Beaker sites in Ireland, pit deposits containing large amounts of cultural material Ireland are being excavated with an ever-increasing frequency. Beaker activity forms part of the well known multi-period prehistoric complexes such as Newgrange (O'Kelly 1983) and Knowth (Eogan and Roche 1997), Co. Meath. The Dundalk sites were found in stereotypical locations that exploit as large a variety of biospheres as possible. Most Beaker sites are found on free draining fertile soils in slightly undulating topography on south and southeast facing slopes within 8km of the coast and within 1km of a river (see Carlin 2005a; 2005b). An unusual aspect of the Beaker sites from the scheme was the absence of evidence for cereal cultivation in the form of carbonised cereal grains and quernstones as these are a common aspect of contemporary sites in Ireland (Carlin 2005a; 2005b). Although this scenario could potentially be a result of the sampling strategies employed and/or the poor preservation of the original remains.

The Beaker pottery from the scheme was exceptionally fine and generally very well made in terms of finish, fabric and decoration. Almost all of these displayed the typical Beaker S-shaped profile and simple horizontally arranged zonal ornamentation. Pottery of this kind can be classified as belonging to Clarke's European Bell Beaker, or his Wessex/Middle Rhine types (1970) and to Case's (1995) Style 2 which is considered to date from c.2450–2200 BC. Vessels with burnished exteriors were found on both Newtownbalregan sites, as were plain undecorated pots. The former has been noted on only a small number of sites including Newgrange, Co. Meath (Cleary 1983); Knowth, Co. Meath (Eogan & Roche 1997); Mell, Co. Louth (Roche & Grogan 2005); Hill of Rath, Co. Louth (Duffy 2002). In general, the Dundalk assemblage is highly comparable to those from other Beaker sites such as Knowth, Co. Meath, (Eogan 1984), Dalkey Island Site 5, Co. Dublin, (Liversage 1968), Lough Gur Sites C, D (Ó Ríordáin 1954), L (Grogan & Eogan 1987) and 10, Co. Limerick, (ibid), and Kilgobbin, Co. Dublin (Hagen forthcoming 1; Grogan 2004a). However, Grogan and Roche (2005a) observed that 'the Newtownbalregan Beaker pottery is of an unusually fine quality that is only occasionally matched at other sites such as Knowth, Dalkey Island and possibly the Hill of Rath'. The exceptional quality of some of these Beakers is consistent with their association with the polypod bowl, the distribution of which appears to be concentrated around the Boyne Valley complex.

By placing the site into its local context, it may be possible to achieve a better understanding of the nature of the human interactions that occurred here at the start

of the Early Bronze Age. There is rich evidence for activity that was broadly contemporary with the Beaker sites discovered on the bypass within their immediate locale. A pit at Farrandreg, Co. Louth, 1.5km east of Newtownbalregan, was found to contain Beaker sherds and a possible collared urn (Bolger 2002). An un-contexted sherd of Beaker pottery was found in the townland of Faughart Lower which adjoins this cemetery complex (John Turrell, pers. comm.). Beaker pottery has been found in the court tombs immediately north of Carlingford Lough at Clontygora Large Co. Down and Ballyedmond, Co. Down (Herity 1987).

Irish Beakers date from c.2500–1900 BC (Brindley 2005, 334; 2007, 321) and at least some of the Beaker activity from the north Louth region such as that from Newtownbalregan 2 dates from c.2200–2100 BC and may be contemporary with some of the many Food Vessel sites in the surrounding area. It has long been argued that the emergence of the Food Vessel pottery tradition and especially the Bowl was strongly influenced by Beakers (Case 1995, 23; Waddell 1976, 286; Apsimon 1969, 37). The use of Bowls in Ireland date from c.2160 BC until 1930/20 BC (Brindley 2007, 250) and they seem to have appeared as part of a newly adopted funerary ritual involving crouched inhumations that is closely comparable to the British Beaker burial tradition. This distinctive form of burial dates from c.2150–1900 BC (Brindley 2007, 373). It seems likely that early Food Vessels were part of the same ceramic repertoire as Beaker pottery, thus there may be a strong relationship between the Bowl-associated sites and crouched inhumations located around Dundalk Bay and Beaker-associated activity.

Including Carn More 5, a number of Bowl burials occur in the immediate vicinity of this excavation – including the cist graves found 0.6km to the south at Newtownbalregan, Co. Louth (Manning 1987), 1km west at Tankardsrock, Co. Louth (Waddell 1990, 113; Cooney 1987b) and 7km to the north east at Aghanaskeagh, Co. Louth (Waddell 1990, 111). A Bowl-associated cremation and a crouched inhumation were found at Ramparks, Co. Louth slightly further to the northeast on the Carlingford peninsula (Campbell 2004). Crouched inhumations in cists have been excavated 5km to the southwest at Newtown, Co. Louth (Waddell 1990, 113) and 4km to the southeast at Crumlin, Co. Louth (Lynch 2002). Apparently non-funereal Bowl-associated activity has been recorded 5km to the southeast at Marshes Upper, Co. Louth (O'Hara 2004) and 5km to the north east at Navan, Co. Louth (Opie 1994).

Wedge tombs were built from 2400–2100 BC (Brindley and Lanting 1991/92, 25), Beaker sherds have been found in association with cremated and un-burnt human bone in apparently primary positions in up to nine wedge tombs and these monuments are almost certainly of Final Neolithic–Early Bronze Age construction. Two of these tombs occur within the fertile plain surrounding the Castletown River estuary – Lurgankeel is 3km to the north and Proleek is 6km to the north east (de Valera and Ó Nualláin 1982, 130).

A cluster of outcrop rock art panels occurs to the west of Dundalk Bay (Clarke 1981; 1982), which are decorated with cup-marks, a tradition dating from the Late Neolithic–Early Bronze Age (Bradley 1997; Burgess 1990). Sites in the vicinity of Newtownbalregan include Tankardsrock (0.8km west), Cortial (2km south west), Carrickallan (3km southwest), Drumsinnot and Carrickrobin (5 and 6km west, respectively).

The north western extent of the central plain of Co. Louth was clearly a focus of intense activity from 2400–2000 BC and it seems that the Beaker-associated sites formed a clear part of this node. A very strong spatial association exists between the Beaker activity at Newtownbalregan 2 and 5, Dongahmore 1, Farrandreg, Carn More,

and Faughart, the Bowl-associated activity at Carn More, Newtownbalregan, Tankardsrock, Aghanaskeagh, Ramparks, Marshes Upper, and Navan, the crouched inhumations at Crumlin and Newtown, the wedge tombs at Proleek and Lurgankeel, and the outcrop rock art at Tankards Rock, Cortial and Carrickallan. Cooney (1987a, 128) observed a degree of clustering in the location of Early Bronze Age burials in north Co. Louth and it is significant to note that the subsequently discovered Beaker sites add another dimension to this core. The funerary, ritual and settlement activities seem to be completely intertwined and in this regard, there are strong parallels between this and other Early Bronze Age landscapes such as The Burren, Co. Clare (Jones 1998), the Lough Gur complex, Co. Limerick (Grogan 2005) and the southern foothills of the Dublin Mountains (Carlin 2005b).

The Early Bronze Age evidence is only one aspect of a long tradition of human activity in this micro-region. Early Neolithic settlement is indicated by the dense grouping of court tombs, portal tombs on the slopes of the Carlingford Mountains, the rectangular houses at Haggardstown (Gill McLoughlin, pers. comm.) and Plaster (John Turrell, pers. comm.) and the various sites found on the route of the Dundalk Western Bypass – Littlemill 1, Donaghmore 1a, Faughart 5, and Newtownbalregan 5 (Ó Donnchadha 2003a; 2002; Bayley 2004; Grogan and Roche 2006a; 2006b; Grogan and Roche 2005a). Middle Neolithic activity is also richly represented by sites such as the passage tombs in the Carlingford Mountains at Ravensdale, Co. Down and Killin, Co. Louth, the collection of smaller sites at Newtownbalregan 5, Littlemill 1 and 4/5, and Donaghmore 1 (Bayley 2005; Ó Donnchadha 2003a; 2003c; 2002; Grogan and Roche 2005a; 2006a; 2006b; 2006d) and Balregan (Grogan and Roche 2006b). Evidence for Late Neolithic (Grooved Ware) activity in north Co. Louth is provided by the embanked enclosure at Balregan (Grogan and Roche 2006c) and possibly at Carn Beg, Co. Louth (Buckley and Sweetman 1991, 70). The longevity and density of past human activity in the north Louth region suggests that it was an important Neolithic core which was clearly abreast of wider regional and international developments. Perhaps this is the context within which the discovery of the polypod bowl at Newtownbalregan is best understood. The north Louth core continued to be major focus in the Early Bronze Age and although the monuments of the past would have continued to play a role in the cultural landscape, there seems to have been a greater diversity in the distribution of activity with settlement extending further into the lowland areas.

The discoveries from the Dundalk Western Bypass add considerably to the growing distribution of Irish Beakers in Ireland. New findings such as the concentrations of sites occurring in south Munster and south Leinster show that there is a much wider dispersal of Beaker pottery than was previously realised. Less than a decade ago, there were no such sites known from south Munster or south Leinster and the only known Beaker sites in the north Leinster region were those of Newgrange, Monknewtown and Knowth from the Boyne Valley (O'Kelly 1983; Sweetman 1976; Eogan 1984). Beaker sites in the vicinity of these have subsequently been discovered at Hill of Rath (Duffy 2002) and Mell (McQuade 2005) in Co. Louth and at Rathmullan 9, 10 and 12 (D. Neill 2002; Bolger 2001a; 2001b), Carranstown (O'Carroll 2004), and Oldbridge (Matt Seavers, pers. comm.) in Co. Meath. New Beaker sites found near the Hill of Tara include Ardsallagh 4, Johnstown 3, Berrilstown, Dunboyne 3, Screen 3, and Lismullin 1, Co. Meath (Grogan and Roche 2007). Beaker activity also occurred near Ashbourne, at Harlockstown and Cookstown, Co Meath (O'Connor 2004; Clutterbuck 2004) and at Kilmainham, Co. Meath, west of Kells (Fintan Walsh, pers. comm.). Further Beaker sites have been excavated in the north Dublin coastal area at Beaverstown, Balrothery, Broomfield, and Lusk (Hagen forthcoming 2; Grogan 2006; O'Brien 1988; Roche 2004b). The wedge tombs at Paddock on the slopes of the Rathkenny-Mount Oriel uplands in

south Co. Louth and at Edengora, Co. Meath to the north of Kells can be seen as further indicators of widespread Beaker activity in north Leinster. At present, there appears to be a gap in the distribution of Grooved Ware, Beakers and Food Vessels along the north Leinster coastline stretching from Dunleer to Dundalk which may suggest that the north Louth core was quite distinct from the Boyne Valley complex.

In conclusion, the discoveries of the new sites on the Dundalk Western Bypass demonstrates that Beaker activity in Ireland was more widespread than previously thought (e.g. Harbison 1979) and that the Neolithic core in north Co. Louth continued to be a major focus of activity in the Early Bronze Age.

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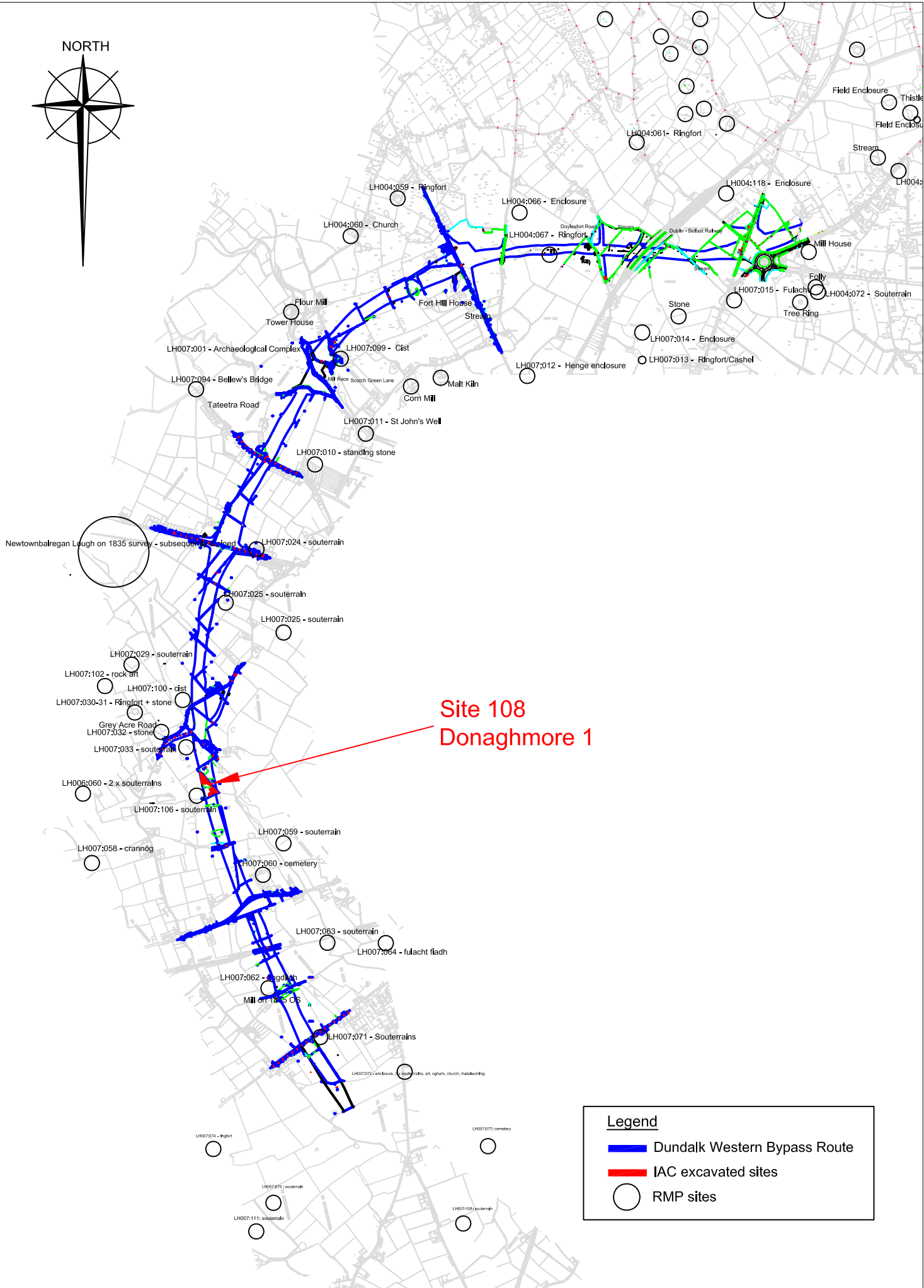
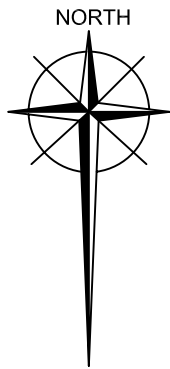
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Title: Site 108, Donaghmore 1 Site location
Project: M1 Dundalk Western Bypass
Client: Louth County Council

Scale: N.T.S.
Date: 16/11/07
Produced by: P Higgins
Job No: J2041
Figure No: 1



Site 108
Donaghmore 1

Legend

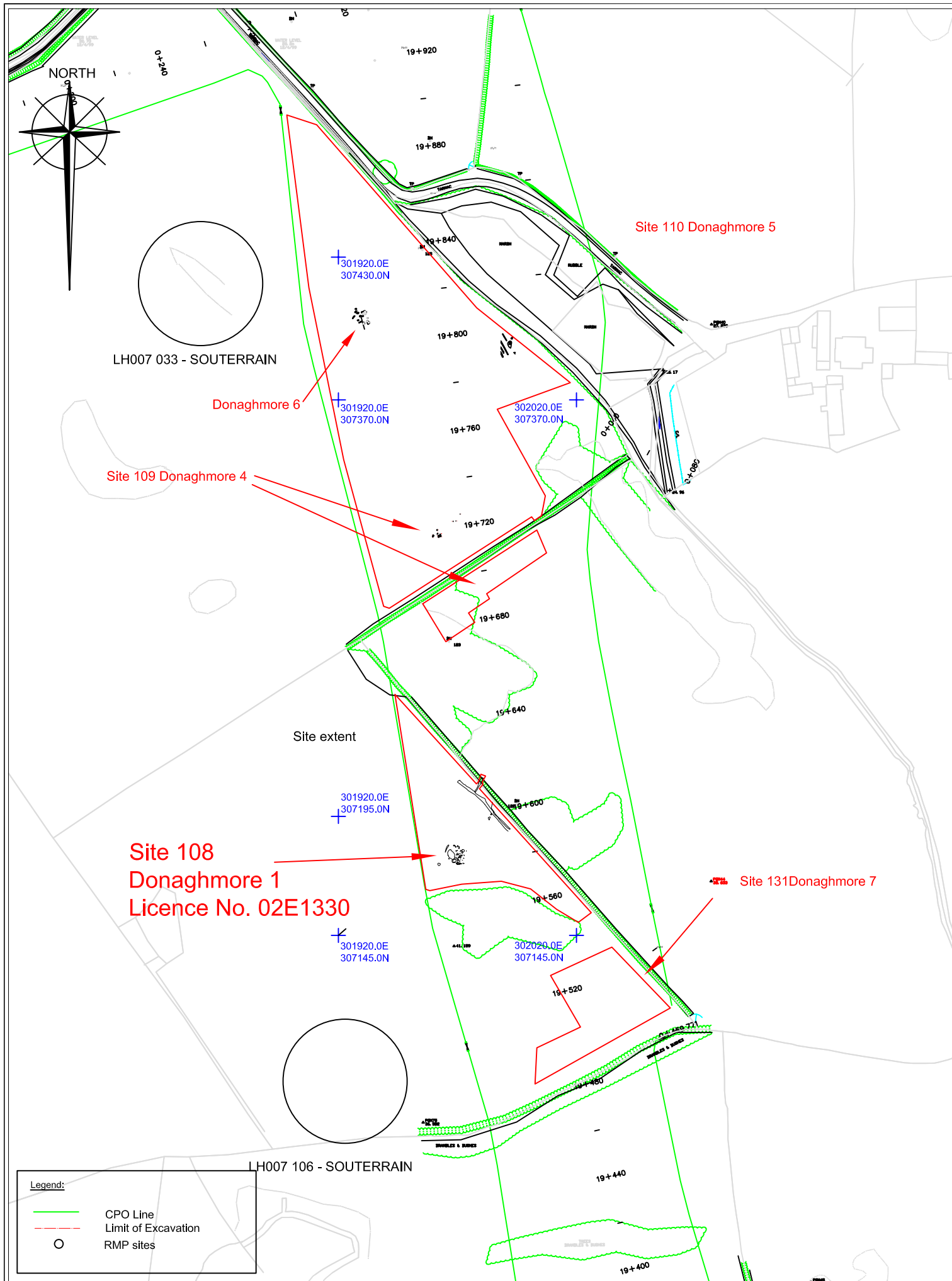
- Dundalk Western Bypass Route
- IAC excavated sites
- RMP sites

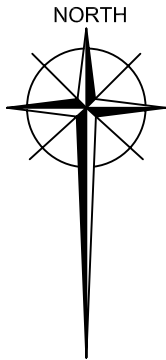


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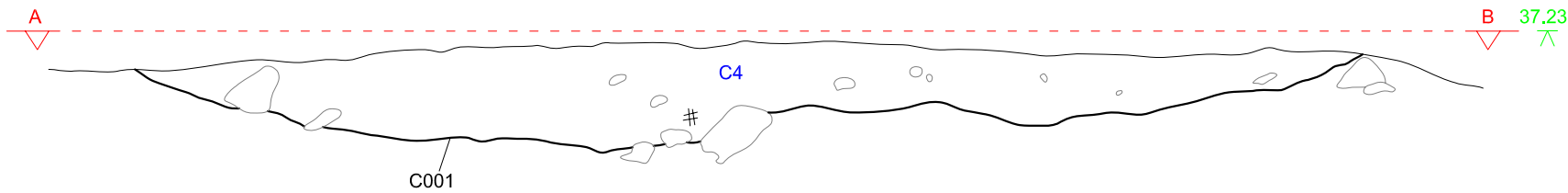
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Project: M1 Dundalk Western Bypass
Client: Louth County Council

Scale: 1:30000
Date: 16/11/07
Produced by: P Higgins
Job No: J2041
Figure No: 2

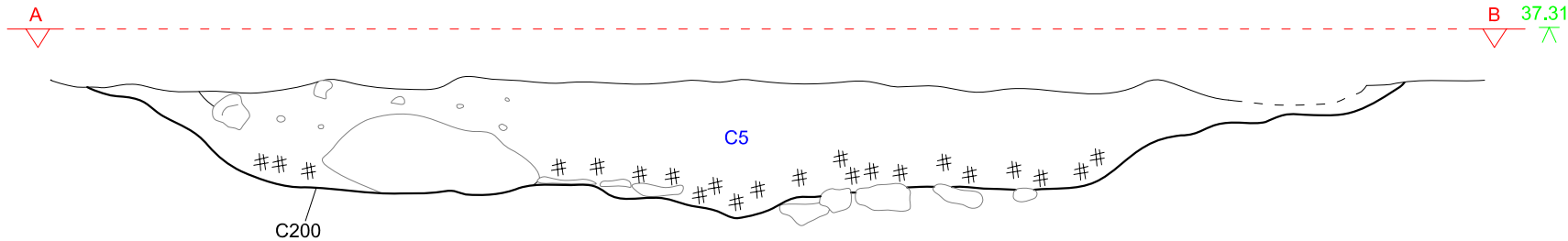




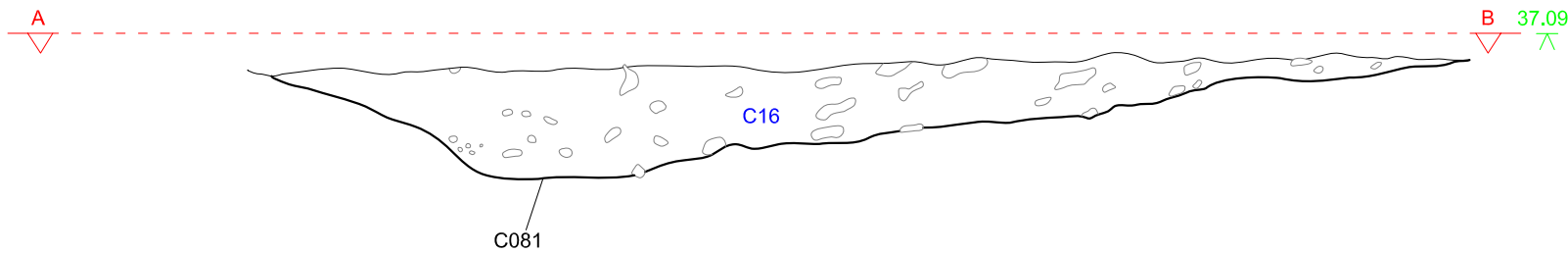
Donaghmore 1
South South West Facing of C001



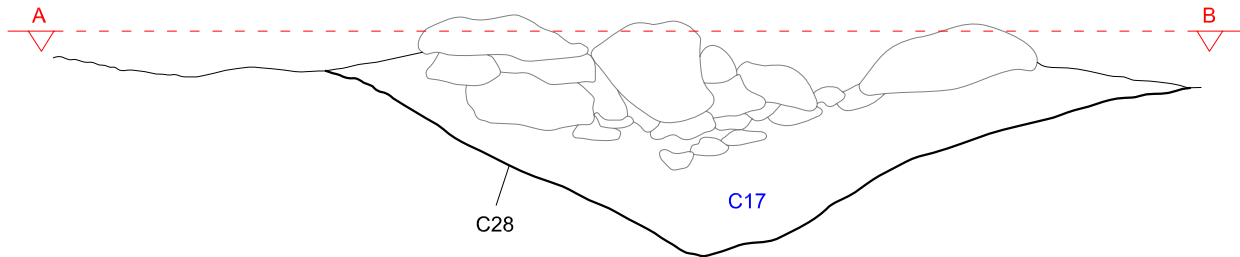
Donaghmore 1
South Facing Section of C200



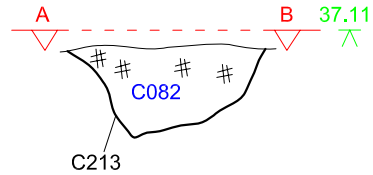
Donaghmore 1
South Facing Section of C081



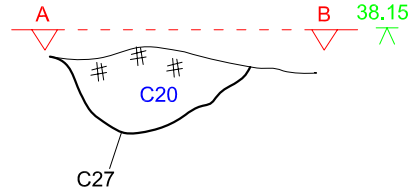
Donaghmore 1
South Facing section of C28



Donaghmore 1
North Facing Section of C213



Donaghmore 1
West Facing Section C27



Legend

- C## Fill numbers
- C## Cut number
- Stone
- OD Level
- Charcoal

Title: Sections of Group 2 (prehistoric activity)

Project: M1 Dundalk Western Bypass

Client: Louth County Council

Scale: 1:10

Job No: J2041

Date: 16/11/07

Figure No: 6

Produced by: P Higgins



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Plate 1: General overhead view of Site 108, Donaghmore 1

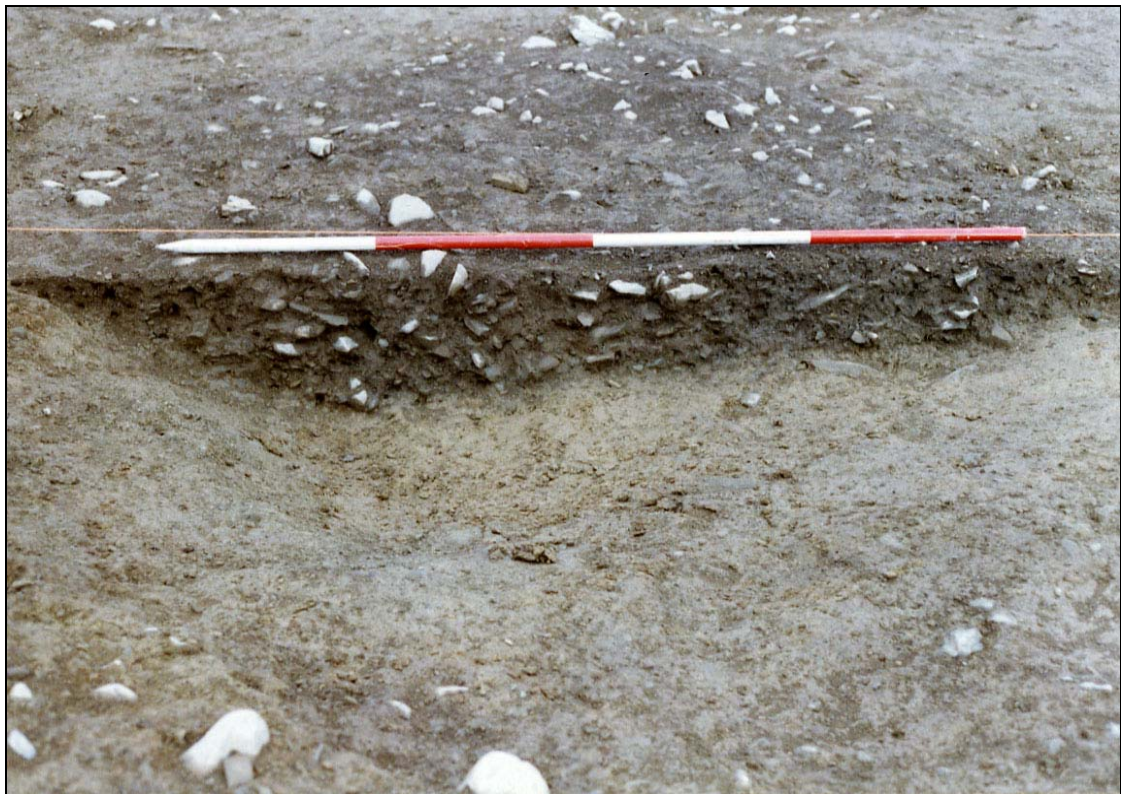


Plate 2: South facing section through stone filled pit [C192]



Plate 3: Post-excavation view of Site 108, Donaghmore 1.

APPENDIX 1: CATALOGUE OF PRIMARY DATA

Context Index:

C	Area	Fill of	Filled by	Interpretation	Description
1	Site	N/A	N/A	Natural subsoil	
2	Site	N/A	N/A	Topsoil	
3				Number not used	
4	D1	112-125	N/A	In situ burning	Dark brown silty clay, mottled w/ burnt clay, ch, burnt stone, med-lge unburnt ang stone
5	D1	200	N/A	Poss fire pit	Dark brown clay, ch layer concentrated at base
6	D1	126, 127	N/A	Poss burnt stakes	Dark brown, friable gritty clay+burnt clay
7	D1	128	N/A	Fill	Dark brown, friable gritty clay,
8	D1	129, 130, 131, 132	N/A	Fill of stakeholes	Dark brown, friable gritty clay, occ ch fl
9	D1	133, 134	N/A	Fill of stakeholes	Grey brown soft clay, occ ch fl,
10	D1	136	N/A	Poss burnt post	Dark brown, friable gritty sand, occ ch fl, lge flat stone lining W side of cut
11	D1	203	N/A	Charcoal deposit	V dark brown, loose gritty clay, mod ch fl+frags
12	D1	137	N/A	Burnt post	Dark brown, loose gritty clay, ch fl+frags-more concentrated towards bottom of fill
13	D1	201	N/A	Poss nat silting	Dark brown, heavy clay, occ ch fl, occ pebbles, rock crystal frag
14	D1	219	N/A	Fill of stakehole	Dark grey silty clay, occ ch fl
15				Number not used	
16	D1	192	N/A	Fill of pit	Dark grey silt, freq ch, 3 tiny burnt bone frags, freq sm stones
17	D1	202	N/A	Fill	Dark brown loose clay with large sub angular stones
18	D1	231	N/A	Charcoal spread	Black, ch-rich soil+burnt clay, burnt bone, occ sm stones
19	D1	N/A	N/A	Charcoal spread	Med brown fill, ch fl
20	D1	138	N/A	Poss burnt post	Med dark ch-rich silty clay
21	D1	N/A	N/A	In situ burning	Small burnt patch filled w/ch mixed w/dark clay, covering an area of 0.56m l x 0.38m
22	D1	140	N/A	Burnt stake	Dark brown black silt, ch
23	D1	141	N/A	Stakehole fill	Dark brown loose silty clay, occ ch frags
24	D1	142	N/A	Fill	Med dark brown loose sandy clay occ. charcoal flecks
25	D1	143	N/A	Stakehole fill	Med-dark brown, loose sandy clay

26	D1	144	N/A	Stakehole fill	Med-light brown, loose sandy clay, occ ch fl
27	D1	145	N/A	Stakehole fill	Med-dark brown, loose clay, occ ch
28	D1	162	N/A	In situ burning	Dark burnt clay+charcaol flecks
29	D1	156	N/A	Burnt stake+packing	Mid-dark brown, loose clayey sand ch frags at base, poss packing stones at edge in N
30	D1	157	N/A	Poss stakehole fill	Dark brown, loose gritty clay
31	D1	169	N/A	Stakehole fill	Med brown, friable clay
32	D1	170	N/A	Stake packing	Dark brown, loose clay, occ ch fl
33	D1	171	N/A	Stake packing	Dark brown, compact clay, occ ch fl
34	D1	172	N/A	Stakehole fill	Med brown, friable clay, occ pebbles
35	D1	146	N/A	Stakehole fill	Light brown silty clay, occ ch fl, occ sm pebbles
36	D1	147	N/A	Stakehole fill	Med brown silty clay, rare ch fl, occ pebbles
37	D1	148	N/A	Poss burnt stake	Dark brown silty clay, freq ch fl
38				Number not used	
39	D1	149	N/A	Poss burnt stake	Grey brown, soft silty clay, freq ch fl, occ sm stones
40	D1	150	N/A	Stakehole fill	Med brown, loose silty clay, occ ch fl, occ pebbles
41	D1	151	N/A	Stakehole fill	Light brown silty clay, occ ch fl, occ sm pebbles
42	D1	152	N/A	Stakehole fill	Med brown, loose clay sand, occ ch fl
43	D1	153	N/A	Stakehole fill	Med brown, loose clay, occ pebbles
44	D1	154	N/A	Stakehole fill	Med brown silty clay, occ ch fl
45	D1	155	N/A	Stakehole fill	Light brown, loose silty clay, freq pebbles
46	D1	158	N/A	Stakehole fill	Med brown silty clay, occ ch
47	D1	159	N/A	Stakehole fill	Med brown silty clay, occ ch
48	D1	160	N/A	Stakehole fill	Med brown silty clay, occ ch fl
49	D1	161	N/A	Stakehole fill	Light brown silty clay, freq pebbles
50	D1	166	N/A	Stakehole fill	Light brown silty clay, occ ch fl
51	D1	163	N/A	Stakehole fill	Light brown silty clay, freq tiny pebbles
52	D1	164	N/A	Stakehole fill	med brown silty clay, occ ch fl
53	D1	165	N/A	Stakehole fill	Yellow brown silty clay, occ. charcoal fl, occ tiny pebbles
54	D1	167	N/A	Stakehole fill	Med brown, compact clay, occ. ch fl
55	D1	168	N/A	Stakehole fill	Med brown, friable clay, rare ch fl
56	D1	173	N/A	Stakehole fill	Med brown, soft silty clay, occ ch fl, occ stone
57	D1	174	N/A	Stakehole fill	Light brown, friable clay, occ ch fl
58	D1	175	N/A	Burnt stake	Dark brown silty clay, freq. charcoal, freq pebbles+3 large stones
59	D1	176	N/A	Stakehole fill	Med brown soft clay, freq small pebbles
60	D1	177	N/A	Stakehole fill	Med brown, mod compact soft silty clay, freq pebbles
61	D1	178	N/A	Stakehole fill	Med brown, soft clay, occ ch fl, occ sm pebbles
62	D1	191	N/A	Stakehole fill	Light grey brown , soft clay, occ ch fl
63	D1	190	N/A	Stakehole fill	Grey brown silty clay, occ ch fl
64	D1	189	N/A	Stakehole fill	Dark brown silty clay, occ ch fl
65					
66	D1	185	N/A	Stakehole fill	Dark brown soft clay, rare ch fl
67	D1	179	N/A	Stakehole fill	Med brown soft silty clay, freq pebbles
68	D1	180	N/A	Stakehole fill	Med brown silty clay, pebbles
69	D1	181	N/A	Fill	Dark brown friable clay
70	D1	182	N/A	stake packing	Dark brown, compact clay, occ ch fl at top, 2 stones at S edge of cut-poss packing stones
71	D1	183	N/A	Stakehole fill	Dark brown clay , pebbles

72	D1	184	N/A	Stakehole fill	Dark brown clay, freq ch fl+frags
73	D1	186	N/A	Stakehole fill	Med brown silty clay
74	D1	187	N/A	Stakehole fill	Med brown silty clay, occ ch
75	D1	188	N/A	Stakehole fill	med brown soft clay, occ ch fl
76	D1	193	N/A	Stakehole fill	Light yellow brown silty clay, ch frags, 1 tiny burnt bone fleck
77	D1	194	N/A	Stakehole fill	Light yellow brown soft sandy clay, occ ch fl
78	D1	195	N/A	Stakehole fill	Light grey yellow silty clay, occ ch fl
79	D1	196	N/A	Small pit fill	Med brown, crumbly clay ch fl, 2 stones in centre
80	D1	198	N/A	Stakehole fill	Med grey brown soft clay, occ ch fl
81	D1	199	N/A	Stakehole fill	Dark grey brown soft clay, occ ch fl
82	D1	213	N/A	Fill	Charcoal rich fill with small slate slabs
83	D1	204	N/A	Stakehole fill	Dark brown, mod compact clay
84	D1	205	N/A	Fill of small pit	Med. Brown, friable clay, charcoal flecks, small pebbles
85	D1	207	N/A	Posthole fill	Dark brown black, soft friable soil, stones lining cut
86	D1	206	N/A	stakehole fill	Med brown soft clay, ch fl, freq pebbles
87	D1	208	N/A	Stakehole fill	Med brown soft silty clay
88	D1	209	N/A	Stakehole fill	Dark brown silty clay, occ ch fl
89	D1	214	N/A	Oval pit fill	Light brown crumbly clay
90	D1	210	N/A	Stakehole fill	Dark brown soft clay, ch, occ burnt bone
91				Number not used	
92	D1	212	N/A	Stakehole fill	Dark brown, loose ch-rich clay, stones along edge-poss packing
93	D1	215	N/A	Stakehole fill	Med brown, mod compact clay, occ ch fl
94	D1	216	N/A	Posthole upper fill	Dark brown, mod. compact charcoal rich clay
95	D1	216	N/A	Posthole lower fill	Grey brown soft clay, occ ch fl
96	D1	217	N/A	Stakehole fill	Med brown clay, ch
97	D1	218	N/A	Stakehole fill	Med brown silty clay, occ ch fl
98	D1	220	N/A	Stakehole fill	Med brown silty clay
99	D1	221	N/A	Stakehole fill	Med brown silty clay, occ ch fl
100	D1	222	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
101	D1	223	N/A	Stakehole fill	Med brown silty clay, occ ch fl
102	D1	224	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
103	D1	225	N/A	Stakehole fill	Dark brown silty clay, freq ch fl
104	D1	226	N/A	Stakehole fill	Med brown silty clay, freq ch fl
105	D1	227	N/A	Stakehole fill	Med brown silty clay, occ ch fl
106	D1	228	N/A	Stakehole fill	Med brown soft clay, occ ch fl
107	D1	229	N/A	Stakehole fill	Med brown silty clay, occ ch fl
108	D1	230	N/A	Stakehole fill	Light brown silty clay, v freq sm pebbles
109	D1	135	N/A	Stakehole fill	Grey brown soft clay, occ ch fl
110				Number not used	
111	D1	197	N/A	In situ burning	burnt orange clay+light brown clay under [C18]
112	D1	N/A	4	Shallow pit	Sub-rect in plan, 0.17d x 1.78l x 1.96(at widest) w, NE-SW orientation, sides slope gently, irreg base, 13 stakeholes [114-125] dug into base
113	D1	N/A	4	Stakehole	Oval in plan, 0.08d x 0.13l x 0.09w, N-S orientation
114	D1	N/A	4	Stakehole	Circular in plan, 0.06d x ca 0.07 dia,
115	D1	N/A	4	Stakehole	Circular in plan, 0.07d x 0.09 dia
116	D1	N/A	4	Stakehole	Circular in plan, 0.06d x 0.09 dia
117	D1	N/A	4	Stakehole	0.08d x 0.12w
118	D1	N/A	4	Stakehole	0.09d x 0.10w
119	D1	N/A	4	Stakehole	0.06d x 0.09w
120	D1	N/A	4	Stakehole	0.03d x 0.06w
121	D1	N/A	4	Stakehole	Circular in plan, 0.04d x 0.07dia
122	D1	N/A	4	Stakehole	Circular in plan, 0.11d x ca 0.7dia
123	D1	N/A	4	Stakehole	Circular in plan, 0.02d x ca 0.08dia
124	D1	N/A	4	Stakehole	Circular in plan, 0.04d x 0.10dia
125	D1	N/A	4	Stakehole	Circular in plan, 0.05d x ca 0.07dia
126	D1	N/A	6	Stakehole	Subcircular in plan, 0.16d x 0.09l x 0.08w, NW-SE orientation, Sides near vert, base concave, top 0.10 T'D at NE by [127]
127	D1	N/A	6	Stakehole	Sub-circular in plan, 0.10d x 0.10l x 0.9w, NW-SE orientation, Sides mod sloped, base flat,
128	D1	N/A	7, 234	Prob posthole	Sub-circular in plan, 0.08d x ca 0.11dia, sides slope gently, base concave, T'd by [183] in N

129	D1	N/A	8	Poss stakehole	Circular in plan, 0.09d x 0.6dia, U-shaped in profile
130	D1	N/A	8	Poss stakehole	Circular in plan, 0.12d x 0.7dia, U-shaped in profile, cut in SW by [131]
131	D1	N/A	8	Poss stakehole	Oval in plan, 0.08d x 0.12l x 0.10w, NE-SW orientation, sides steep, base concave, cut in NE by 130+ in SE by 132
132	D1	N/A	8	Poss stakehole	Circular in plan, 0.11d x 0.9dia, sides mod steep, base concave, cut in NW by 131
133	D1	N/A	9	Stakehole	sub-circular in plan 0.06d x 0.12dia, SE side slightly undercut, others mod steep, base flat, cut in NE by [134]
134	D1	N/A	9	Poss double stakehole	sub-oval in plan, 0.08d x 0.20l x 0.09w, NW-SE orientation, sides mod steep, base slopes down towards NW, cut in S by 133+in N by 211
135	D1	N/A	109	Stakehole	Irreg in plan, 0.06d x 0.19l x 0.15w, NNE-SSW orientation, S side shallow+ irreg, others mod steep, base irreg.
136	D1	N/A	10	Prob posthole	Triangular in plan, 0.17d x 0.23N-S x 0.19E-W, W side near vert, E side concave+ steep, base concave
137	D1	N/A	12	Prob posthole	Sub-square in plan, 0.28d x 0.33l x 0.28w, N-S orientation, sides mod steep, base flat
138	D1	N/A	20	Posthole	Irreg in plan, 0.15m d x 0.41m l x 0.27m w, E-W orientation, E side gently sloped, others steeper, base rounded point, narrow, deep depression in W side
139				Number not used	
140	D1	N/A	22	Stakehole	circular in plan, 0.12d x 0.09dia, sides steep, base rounded
141	D1	N/A	23	Stakehole	Oval in plan, 0.09d x 0.09l x 0.05w, N-S orientation, U-shaped in profile
142	D1	N/A	24	Stakehole	Sub-square in plan, 0.06d x 0.09l x 0.07w, E-W orientation, sides mod steep, base concave
143	D1	N/A	25	Stakehole	Circular in plan, 0.10d x 0.09dia, sides steep, base concave
144	D1	N/A	26	Stakehole	Subcircular in plan, 0.05d x 0.09l x 0.07w, NW-SE in orientation, sides steep, base flat
145	D1	N/A	27	Stakehole	Oval in plan, 0.06d x 0.10l x 0.07w, NNE-SSW orientation, sides steep, base flat
146	D1	N/A	35	Stakehole	Circular in plan, 0.06d x 0.08dia, sides mod steep, base concave
147	D1	N/A	36	Stakehole	Circular in plan, 0.06d x 0.11dia, sides steep, base concave
148	D1	N/A	37, 38	Stakehole	Sub-circular in plan, 0.04d x 0.12l x 0.10w, N-S orientation, sides near vert, base concave
149	D1	N/A	39	Stakehole	Sub-circular in plan, 0.18d x 0.10dia, sides near vert, base concave
150	D1	N/A	40	Stakehole	Circular in plan, 0.10d x 0.07dia, sides near vert, base concave
151	D1	N/A	41	Stakehole	Circular in plan, 0.04d x 0.05dia, sides steep, base concave
152	D1	N/A	42	Stakehole	Sub-circular in plan, 0.06d x 0.08l x 0.07w, NW-SE orientation, N side steep, S more gentle, base concave
153	D1	N/A	43	Stakehole	Oval in plan, 0.09d x 0.10l x 0.08w, E-W orientation, sides near vert, base concave
154	D1	N/A	44	Stakehole	Circular in plan, 0.08d x 0.07dia, sides steep, base concave
155	D1	N/A	45	Stakehole	Circular in plan, 0.07d x 0.07dia, sides steep, base concave
156	D1	N/A	29	Stakehole	Circular in plan, 0.07d x 0.08dia, sides mod steep, base rounded point
157	D1	N/A	30	Stakehole	Sub-oval in plan, 0.05d x 0.07l x 0.05w, E-W orientation, sides v shallow, base concave
158	D1	N/A	46	Stakehole	Circular in plan, 0.07d x 0.08dia, sides near vert base concave
159	D1	N/A	47	Stakehole	teardrop-shaped in plan, 0.11d x 0.12l x 0.09w, N-S orientation, E side steep, W side irreg, base concave
160	D1	N/A	48	Stakehole	Oval in plan, 0.02d x 0.08l x 0.05w, N-S orientation, SE side vert, NW side convex+

					med steep, base concave
161	D1	N/A	49	Stakehole	Kidney-shaped in plan, 0.07d x 0.08l, NE-SW orientation, sides steep, base flat generally
162	D1	N/A	28	Shallow pit	Sub-circular in plan, 0.08d x 0.86l x 0.56w, E-W orientation, sides very shallow
163	D1	N/A	51	Stakehole	Sub-circular in plan, 0.06d x 0.07dia,
164	D1	N/A	52	Stakehole	Oval in plan, 0.05d x 0.010l x 0.08w
165	D1	N/A	53	Stakehole	sub-circular in plan, 0.10d x 0.09dia
166	D1	N/A	50	Stakehole	Circular in plan, 0.06d x 0.08dia, S side steeply sloped, N more gentle, base concave
167	D1	N/A	54	Stakehole	Sub-rect in plan, 0.06d x 0.07w, NE-SW orientation, N+S corners rounded, S side stepped, others steep, base flat
168	D1	N/A	55	Stakehole	Sub-oval in plan, 0.10d x 0.12l x 0.09w, N-S orientation, sides steep, base flat, generally
169	D1	N/A	31	Stakehole	Circular in plan, 0.03d x 0.05dia, sides steep, base rounded
170	D1	N/A	32	Stakehole	Oval in plan, 0.04d x 0.05l x 0.04w, E-W orientation, W side steep, E side shallow, Base rounded
171	D1	N/A	33	Stakehole	Sub-circular in plan, 0.14d x 0.11l x 0.09w, sides vert, base flat
172	D1	N/A	34	Stakehole	Sub-circular in plan, 0.09d x 0.80l x 0.07w, sides near vert, base concave
173	D1	N/A	56	Stakehole	Sub-circular in plan, 0.13d x 0.13dia, sides steep, base slightly concave
174	D1	N/A	57	Stakehole	Sub-circular in plan, 0.07d x 0.075dia, sides steep, base flat generally
175	D1	N/A	58	Stakehole	Sub-oval in plan, 0.12d x 0.30l, E-W orientation, widest in W,
176	D1	N/A	59	Stakehole	Sub-circular in plan, 0.010d x 0.12dia, sides mod steep, base rounded point
177	D1	N/A	60	Stakehole	Irreg sub-circular in plan, 0.08d x 0.08 diasides irreg, base concave
178	D1	N/A	61	Stakehole	Irreg in plan, 0.15d x 0.16w sides steep, base flat generally
179	D1	N/A	67	Stakehole	Sub-circular in plan, 0.07d x 0.08dia, sides+base concave
180	D1	N/A	68	Stakehole	Oval in plan, 0.10d x 0.08l x 0.7w, N-S orientation U-shaped in profile
181	D1	N/A	69	Stakehole	Irreg in plan, 0.10d x 0.08l x 0.06w, N-S orientation, sides vert, base concave
182	D1	N/A	70	Stakehole	Subcircular in plan, 0.09d x 0.07l x 0.06w, NW-SE orientation, sides vert, base concave
183	D1	N/A	71	Stakehole	Sub-circular in plan, 0.06d x 0.07l x 0.05w, sides mod sloped, base concave, T'd by [128] in S
184	D1	N/A	72	Stakehole	Circular in plan, 0.19d x 0.09dia, sides vert, base flat
185	D1	N/A	66	Stakehole	Sub circular in plan, 0.07d x 0.09w, sides vert, base flat
186	D1	N/A	73	Stakehole	Circular in plan, 0.05d x 0.08dia, sides mod steep, base flat
187	D1	N/A	74	Stakehole	Oval in plan, 0.08d x 0.09l x 0.08w, sides vert, base flat
188	D1	N/A	75	Stakehole	Oval in plan, 0.09d x 0.12l x 0.10w, N-S orientation, sides+base concave
189	D1	N/A	64	Stakehole	Sub-oval in plan, 0.09d x 0.15w, sides mod steep, base concave
190	D1	N/A	63	Stakehole	Oval in plan, 0.07d x 0.18l, N-S orientation, SE side gently sloped, others steeper, base flat generally+ slopes down towards N
191	D1	N/A	62	Stakehole	Circular in plan, 0.13d x 0.11dia, U-shaped in profile
192	D1	N/A	16	Pit	Sub-oval in plan, 0.35d x 5.06l x 3.95w, N-S orientation, E side steep, others more gentle, Base flat+slopes slightly down towards N, 2 shallow pits cut into base
193	D1	N/A	76	Stakehole	Oval in plan, 0.05d x 0.14l x 0.10w, sides shallow, base flat generally
194	D1	N/A	77	Stakehole	Subcircular in plan, 0.07d x 0.06dia, sdes mod steep, base rounded
195	D1	N/A	78	Stakehole	Oval in plan, 0.11d x 0.10l x 0.07w, E-W

					orientation, sides near vert, base flat
196	D1	N/A	79	Shallow pit	Sub-oval in plan, 0.08d x 0.33l x 0.28w, E-W orientation, sides v shallow, base concave
197				Number not used	
198	D1	N/A	80	Stakehole	Oval in plan, 0.09d x 0.12l x 0.08w, N-S orientation, sides near vert, base concave
199	D1	N/A	0081	Stakehole	Sub circular in plan, 0.16 x 0.09 x 0.08, N-S orientation
200	D1	N/A	5	Fire pit	Oval in plan, 0.23m d x 1.90m l x 0.75m w, E-W orientation, N+S sides steep, E+W sides less so, base flat
201	D1	N/A	0013	Poss.drainage gully	Linear in plan, 0.05m d x 2.42m L x 0.42m w, NE-SW orientation, SE side steep, NW side more gentle, flat base, cut narrows at SW end
202	D1	N/A	0017	Large posthole	Sub-rectangular in plan, 0.32m d x 1.10m L x 1.00m w, N/S orientation, sides mod. deep, base flat
203	D1	N/A	0011	Poss gully into which charcoal has settled	Rectangular in plan, NE-SW orientation and very shallow. 0.64L x 0.34W, max 0.07d.
204	D1	N/A	83	Stakehole	Sub-oval in plan, 0.12d x 0.08l x 0.06w, E-W orientation, sides steep, base flat generally
205	D1	N/A	84	Small shallow pit	Oval in plan, 0.12d x 0.45l x 0.31w, E-W orientation, sides concave, S side steep others less so, base concave
206	D1	N/A	86	Stakehole	Circular in plan, 0.05d x 0.11dia, sides v shallow, base roundrd point
207	D1	N/A	85	posthole	Oval in plan, 0.15d x 0.08l x 0.05w, NW-SE orientation, E side mod steep, W side undercut, base round, cut inclines slightly to the E
208	D1	N/A	87	Stakehole	Subcircular in plan, 0.05d x 0.08dia, E side steep, W side gentler, base concave
209	D1	N/A	88	Stakehole	Circular in plan, 0.16d x 0.09dia, E side steep, W side more gentle, base concave
210	D1	N/A	90	Stakehole	Sub-circular in plan, 0.07d x 0.09dia, sides mod steep, base concave
211	D1	N/A	9	Stakehole	Circular in plan, 0.11d x 0.10dia, sides near vert, base concave, cut by [134] in SE
212	D1	N/A	92	stakehole	Sub-circular in plan, 0.09d x 0.010dia, sides+base irreg+shallow
213	D1	N/A	82	Posthole	Oval in plan, 0.54m long x 0.25m wide x 0.15m deep.
214	D1	N/A	89	Pit	Oval in plan, 0.12d x 0.54l x 0.40w, N-S orientation, SW side mod steep, others more gradual, base flat
215	D1	N/A	93	Stakehole	Circular in plan, 0.10d x 0.09dia, sides near vert, base rounded
216	D1	N/A	94, 95	Posthole, or 2 stakeholes	Sub-oval in plan, 0.30d x 0.28l x 0.15w, NE-SW orientation, W side convex, E side concave, base concave+ slopes down towards E
217	D1	N/A	96	Stakehole	Circular in plan, 0.09d x 0.11dia, v shallow, no sides, concave base, cut by [218] in NE
218	D1	N/A	97	Stakehole	Circular in plan, 0.07d x 0.10, v shallow no sides, base concave, cut by [217] in SW
219	D1	N/A	14	Stakehole	Circular in plan, 0.08d x 0.12dia, sides mod steep, base rounded point
220	D1	N/A	98	Stakehole	Sub-circular in plan, 0.08d x 0.09diasides mod steep base concave
221	D1	N/A	99	Stakehole	Sub-circular in plan, 0.07d x 0.07dia, W side near vert, E side concave+mod steep, base round
222	D1	N/A	100	Stakehole	Circular in plan, 0.07d x 0.09dia, sides irreg, base round, Cut by [223] in NE
223	D1	N/A	101	Stakehole	Circular in plan, 0.12d x 0.14dia, sides steep, base concave, Cut by [222] in SW
224	D1	N/A	102	Stakehole	Sub-circular in plan, 0.09d x 0.08dia, U-shaped in profile
225	D1	N/A	103	Stakehole	Circular in plan, 0.09d x 0.09dia, U-shaped in profile
226	D1	N/A	104	Stakehole	Oval in plan, 0.09d x 0.09l x 0.06w, NW-SE orientation, sides steep, base concave
227	D1	N/A	105	Stakehole	Circular in plan, 0.06d x 0.07dia, U-shaped in profile

228	D1	N/A	106	Stakehole	Circular in plan, 0.08d x 0.07dia, sides steep, base concave
229	D1	N/A	107	Stakehole	Circular in plan, 0.05d x 0.07dia, Sides steep, base concave
230	D1	N/A	108	Stakehole	Circular in plan, 0.7d x 0.9dia, sides slightly concave+mod steep, base concave
231	D1	N/A	18	Shallow depression/pit	Very shallow pit/depression, circular in plan, 0.94dia, 0.01-03d
232				Number not used	
233				Number not used	
234	D1	128	N/A	In situ burning	Burnt fine sand in base of cut
235		242	N/A	Fill	Dark grey brown
236	D1	N/A	N/A	Burnt spread	Black, ch-rich fill
237	D1	N/A	N/A	Burnt spread	Black, ch-rich fill
238	D1	246	N/A	Hearth fill/ in situ burnt mat	Charcoal, burnt wood, burnt bone+pottery sherds, top fill of 246
239	D1	247	N/A	Poss hearth	Grey black friable, ch-rich soil, ch, burnt bone, pottery, top fill of 247
240	D1	246	N/A	Poss fire pit lining	Thin (0.20)layer of brown silty clay, sm-lg stones
241	D1	247	N/A	Poss fire pit lining	Red brown clay, freq pottery sherds burnt on one side
242	D1	N/A	235	Ditch (field boundary)	Linear in plan, running NW-SE, perpendicular to 243
243	D1	N/A	248	Ditch (field boundary)	Linear in plan, running NE-SW, perpendicular to 242
244				Number not used	
245				Number not used	
246	D1	N/A	238,240	Prob hearth	Sub-oval in plan, 0.32d x 1.70l x 1.34w, E-W orientation, sides mod steep, base flat
247	D1	N/A	239,241	Poss hearth	Oval in plan, 0.10d x 0.63l x 0.33w, N-S orientation, sides shallow+concave, base concave
248	D1	243	N/A	Fill	Dark grey brown

Finds Register:

Context	Find	Material	Period	Pottery form	Artefact type	Comments
4	02E1330:4:1	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:2	Pottery	Middle Neolithic	Bipartite bowl	Shoulder sherd	
4	02E1330:4:3	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:4	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:5	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:6	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:7	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:8	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:9	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:10	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:11	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:12	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:13	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:14	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:15	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:16	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	

4	02E1330:4:17	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:18	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:19	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:20	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
4	02E1330:4:21	Pottery	Middle Neolithic	Bipartite bowl	Bodysherd	
5	02E1330:5:1	Flint				
16	02E1330:16:1	Decorated pottery	Late Neolithic/Early Bronze Age Beaker	Unidentified vessel	Bodysherd	
16	02E1330:16:2	Pottery	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
16	02E1330:16:3	Pottery	Late Neolithic/Early Bronze Age Beaker	Unidentified vessel	Necksherd	
16	02E1330:16:4	Pottery	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
16	02E1330:16:5	Pottery	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
18	02E1330:18:1	Pottery				
18	02E1330:18:2	Flint				
18	02E1330:18:3	Flint				
18	02E1330:18:4	Worked flint				
79	02E1330:79:1	Pottery frag	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
79	02E1330:79:2	Pottery frag	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
79	02E1330:79:3	Pottery frag	Late Neolithic/Early Bronze Age Beaker		Bodysherd	
100	02E1330:100:1	Pottery	Middle Neolithic	Unidentified vessel	Bodysherd	
0236	02E1330:0236:1	Flint				
0236	02E1330:0236:2	Flint				
0236	02E1330:0236:3	Flint				
0236	02E1330:0236:4	Flint				
0237	02E1330:0237:1	Pottery				
0237	02E1330:0237:2	Pottery				
0237	02E1330:0237:3	Flint				
0237	02E1330:0237:4	Flint				
0237	02E1330:0237:5	Flint scraper				
0237	02E1330:0237:6	Pottery				
0237	02E1330:0237:7	Pottery frags				
0237	02E1330:0237:8	Pottery frags				
0237	02E1330:0237:9	Pottery frags				
0237	02E1330:0237:10	Pottery frags				
0237	02E1330:0237:11	Pottery frags				
0237	02E1330:0237:12	Pottery frags				
0237	02E1330:0237:13	Pottery frags				

0237	02E1330:0237:14	Pottery frags				
0240	02E1330:0240:1	Flint				
0241	02E1330:0241:1	Pottery	Early Neolithic	Carinated bowl	Rimsherd	
0241	02E1330:0241:2	Pottery	Early Neolithic	Carinated bowl	Bodysherd	
0241	02E1330:0241:3	Pottery	Early Neolithic	Carinated bowl	Shouldersherd	
0241	02E1330:0241:4	Pottery	Early Neolithic	Carinated bowl	Bodysherd	
0241	02E1330:0241:5	Pottery	Early Neolithic	Carinated bowl	Bodysherd	
0241	02E1330:0241:6	Pottery	Early Neolithic	Carinated bowl	Bodysherd	
0241	02E1330:0241:7	Pottery	Early Neolithic	Carinated bowl	Bodysherd	
0241	02E1330:0241:8	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:9	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:10	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:11	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:12	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:13	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:14	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:15	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:16	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:17	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:18	Pottery	Early Neolithic	Carinated bowl	Fragment	
0241	02E1330:0241:19	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:20	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:21	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:22	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:23	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:24	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:25	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:26	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:27	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:28	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:29	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:30	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:31	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:32	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:33	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:34	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:35	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:36	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:37	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:38	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:39	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:40	Pottery	Early Neolithic		Fragment	
0241	02E1330:0241:41	Pottery	Early Neolithic		Fragment	
0242	02E1330:0242:1	Pottery	Early Neolithic	Unidentified vessel	Rimsherd	
0242	02E1330:0242:2	Pottery	Early Neolithic	Unidentified vessel	Bodysherd	
0242	02E1330:0242:3	Pottery	Early Neolithic	Unidentified vessel	Shouldersherd	
0242	02E1330:0242:4	Pottery	Early Neolithic	Unidentified vessel	Bodysherd	
0242	02E1330:0242:5	Pottery	Early Neolithic	Unidentified vessel	Bodysherd	
0242	02E1330:0242:6	Pottery	Early Neolithic	Unidentified vessel	Bodysherd	
0242	02E1330:0242:7	Pottery	Early Neolithic	Unidentified vessel	Bodysherd	
0242	02E1330:0242:8	Pottery	Early Neolithic	Unidentified vessel	Fragment	

0242	02E1330:0242:9	Pottery	Early Neolithic	Unidentified vessel	Fragment	
0242	02E1330:0242:10	Pottery	Early Neolithic	Unidentified vessel	Fragment	

APPENDIX 2: SPECIALIST REPORTS

APPENDIX 2.1: SPECIES IDENTIFICATION OF CHARCOAL SAMPLES

SPECIES IDENTIFICATION
OF CHARCOAL SAMPLES
FROM
DONAGHMORE 1 (02E1330),
CO. LOUTH

ELLEN OCARROLL

January 2006

1. INTRODUCTION

Two charcoal samples were submitted for analysis from Donaghmore 1, Dundalk by-pass. The first charcoal sample was retrieved from a fire pit, which was located on the north east side of a series of stakeholes. The pit [C192] was the largest on the site and is filled with [C16] a charcoal flecked context, from which tiny fragments of burnt bone and one sherd of pottery were recovered. The excavator has interpreted the pit as a cooking feature, as the area appeared to be domestic in nature. The second sample was excavated from a series of stakeholes possibly associated with a 'wooden footed article'. The fill of the stakehole (C6) comprised dark brown, friable and gritty burnt clay. The excavated features at Donaghmore 1 had been heavily truncated through ploughing in recent times. A few flint artefacts were recovered and over 26 sherds of a coarse black prehistoric pottery were retrieved from these excavations. The pottery appears to date from the Late Neolithic or Early Bronze Age.

The charcoal was sent for species identification prior to ^{14}C dating and also to give an indication of the range of tree species, which grew in the vicinity. Charcoal and wood analyses may also provide information on the utilization of certain species for various functions. Wood used for fuel at pre-historic sites would generally have grown at locations close to the site. Therefore species identifications may, but do not necessarily, reflect the composition of the local woodlands.

2. METHODS

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). The identification of charcoal material involves breaking the charcoal piece so that a clean section of the wood can be obtained. This charcoal is then identified to species under an Olympus SZ3060 zoom stereomicroscope. By close examination of the microanatomical features of the samples the species was determined. The diagnostic features used for the identification of charcoal are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates.

3. QUANTIFICATION/RESULTS

Table 1: Results from charcoal identifications

Site no.		Sample No	Identification	Weight and comment
Donaghmore 1 02E1330	C16, Charcoal from central pit	4	Alder (<i>Alnus glutinosa</i>) and Blackthorn (<i>Prunus spinosa</i>)	Alder (3g), Blackthorn (1.2g). Many insect holes apparent
Donaghmore 1 02E1330	C6, Charcoal from stakehole	1	Oak (<i>Quercus</i> sp) and Hazel (<i>Corylus avellana</i>)	Oak (20g) and Hazel (4g)

4. PROVENANCE

Two charcoal samples from two separate features were analysed from Donaghmore 1, Dundalk by-pass. One of the samples was retrieved from the fill of a fire pit (C16) possibly used for cooking as it was domestic in nature. This sample mainly comprised of alder (*Alnus glutinosa*) with a small amount of blackthorn (*Prunus spinosa*) present in the sample. The charcoal from this sample was riddled with insect holes, which suggests that the wood was lying on the ground for some time prior to its use.

The second sample which was excavated from a stakehole (**C6**) comprised mainly of oak (*Quercus* sp.) but there was also some hazel (*Corylus avellana*) present in the sample. This charcoal may be representative of the burnt remains of the oak or hazel stakes which lay in the stake hole prior to their burning.

Alder (*Alnus glutinosa*) was the pre dominant species identified from the fire pit (**C16**). It is a widespread native tree and occurs in wet habitats along streams and riverbanks. Alder also grows frequently on fen peat. It is an easily worked and split timber and does not tear when worked. Alder is commonly identified from wood remains associated with wet/boggy areas.

Blackthorn was also identified from the fire pit (**C16**). Blackthorn is a very durable wood and is as strong as oak. It is a thorny shrub found in woods and scrub on all soil types. In a woodland situation it is more likely to occur in clearings and at the woodland edges. The collection of blackthorn was probably the selection of scrub from near to the site. The blackthorn identified from this pit may have simply been used as kindling material/ fuel associated with the activity carried out in this pit

A large amount of oak was identified from the possible stake hole. Throughout all periods of prehistory and history oak has been used for structural timbers. The oak identified suggests that there was a supply of oak in the surrounding environment. Oak also has unique properties of great durability and strength. Sessile oak (*Quercus petraea*) and pedunculate oak (*Quercus robur*) are both native and common to Ireland. The wood of these species cannot be differentiated based on its microstructure. Pendunculate oak is found on heavy clays and loams particularly where the soil is of alkaline pH. Sessile oak is found on acid soils often in pure stands and although it thrives on well-drained soils it is also tolerant of flooding (Beckett 1979, 40-41). Both species of oak grow to be very large trees (30-40m) and can live to an age of about 400 years. The oak could have been selected from mixed woodlands nearby.

A smaller amount of hazel was identified from the stake hole. The hazel charcoal may be extraneous material, which fell into the stake hole during or after use. Hazel was very common up to the end of the 17th century and would have been used for the manufacture of many wooden structures such as wattle walls, posts, trackways and baskets. McCracken (1971, 19) points out that "it was once widespread to a degree that is hard to imagine today". With the introduction of brick, steel and slate the crafts associated with hazel became obsolete, and today the woods that supplied hazel have diminished rapidly. Hazel is normally only about 3-5m in height and is often found as an understory in deciduous woods dominated by oak. It also occurs as pure copses on shallow soils over limestone as in The Burren in Co. Clare and survives for 30 to 50 years. Its main advantage is seen in the production of long flexible straight rods through the process known as coppicing.

5. CONSERVATION

Sample no. 4 is suitable for dating as the species identified are from shorter-living trees. The best material to send for dating is shorter-lived species such as alder, blackthorn and hazel therefore the oak has been extracted from sample no 1 and should not be sent for ¹⁴C dating purposes.

6. COMPARATIVE MATERIAL

Wood was a vital and widely used raw material from prehistoric to medieval times although its importance is rarely reflected in the analysis of archaeological assemblages mainly due to its perishable nature. It is important to note that people in prehistoric, Early Christian and medieval communities were mainly dependant on woodland resources for the construction of buildings and for the manufacture of most implements. The woods in a surrounding catchment area were exploited and often managed to provide an essential raw material for the community. The economic importance of wood cannot be overestimated.

A study of the range of species on an archaeological site offers an indication of the composition of a local woodland in its period of use. When some trees are felled the stool left in the ground will produce several new stems, which will grow rapidly. This type of management is known as coppicing. In many woodland areas a number of species of wood are suitable for the production of crops of long narrow stems used for fences, brushwood, hurdle trackways and wattle walls.

From the preliminary studies mentioned above it is clear that oak was the most common species used for wall-posts and planks, hazel was preferred for wattle structures and species such as ash, willow, alder, birch and holly were utilised for a variety of other structural requirements. The work carried out on species selection suggests that availability around a given catchment area was probably the main factor, which influenced choice of timber.

The charcoal assemblages from Donaghmore 1 although as yet undated, are probably associated with the late Neolithic or Early Bronze Age Period and represent the remains a cooking pit and possible stakehole. The range of species and condition of the charcoal identified from the cooking pit suggests that blackthorn and alder was being collected as kindling for use in the pit. It is clear from analysis completed elsewhere (Beaverstown 03E1364) that species not generally associated with structural requirements would be used as material for kindling in pits and hearths.

The material identified from the possible stakehole (**C6**) was oak and hazel. As the majority of the material identified from this stakehole was oak it may represent the burnt remains of an oak stake. The hazel, which was also identified from the sample, may have been supporting the stake or may simple have been extraneous material which fell into the post hole during or after use. Oak has been identified from stakes and posts excavated at various sites throughout Ireland as it is an excellent wood for structural requirements.

7. DISCUSSION

Four species were identified from the features investigated. The species identified above are indicative of a mixed environment. The hazel and oak would have grown in drier conditions preferring free-draining soils and nutrient rich clays, although oak can grow on wetter areas during dry periods. Alder is suggestive of a more wetland terrain. The blackthorn identified at Donaghmore 1 is indicative of a species, which may have grown locally in hedgerows, ditches or as scrub nearby to the sites.

The insect holes noted on the samples retrieved from the fire pit (**C16**) indicates that this material was kindling rather than structural as wood and branches left around on the ground for a period of time would be open to insect infestation.

Oak may have been deliberately selected for the stake that once stood in the stake hole (**C6**). The oak identified from the stake hole indicates a supply of such material in the area and the use of it for certain structural requirements.

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APPENDIX 2.2: RADIOCARBON DATING REPORT

The University of Waikato Radiocarbon Dating Laboratory
One C 14 date was established for the site at Site 108, Donaghmore 1.

The un-calibrated result is as follows:

Wk18551 Donaghmore 1; 02E1330: (**C49**), hazel (*Corylus avellana*) and oak (*Quercus* sp) (1.2g)

d 14 C	-461.3+/-2.9
d 13 C	-24.9+/-0.2
D 14 C	-461.4+/-2.9
% modern	53.9+/-0.3
Result	4971+/-44 BP

The calibrated results were processed using the Intcal 04 calibration curve. The result (95.4% probability) was as follows:

Wk18551 Donaghmore 1; 02E1330: (**C49**), hazel (*Corylus avellana*) and oak (*Quercus* sp) (1.2g)
Cal BC 3810-3650BC (95.4% probability)

Intcal 04 reference: Reimer, P. J., Baillie, M. G. L., Bard, E., Bayliss, A., Beck, J. W., Bertrand, C. J. H., Blackwell, P. G., Buck, C. E., Burr, G. S., Cutler, K. B., Damon, P.E., Edwards, R. L., Fairbanks, R. G., Friedrich, M., Guilderson, T. P., Hogg, A. G., Hughen, K. A., Kromer, B., McCormac, G., Manning, S., Bronk Ramsey, C., Reimer, R. W., Remmele, S., Southon, J. R., Stuiver, M., Talamo, S., Taylor, F. W., van der Plicht, J., Weyhenmeyer, C. E., IntCal04 Terrestrial Radiocarbon Age Calibration, 0 - 26 ka cal BP, *Radiocarbon* 46 (nr 3, 2004).

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Head: Dr Alan Hogg

Report on Radiocarbon Age Determination for Wk-

18551

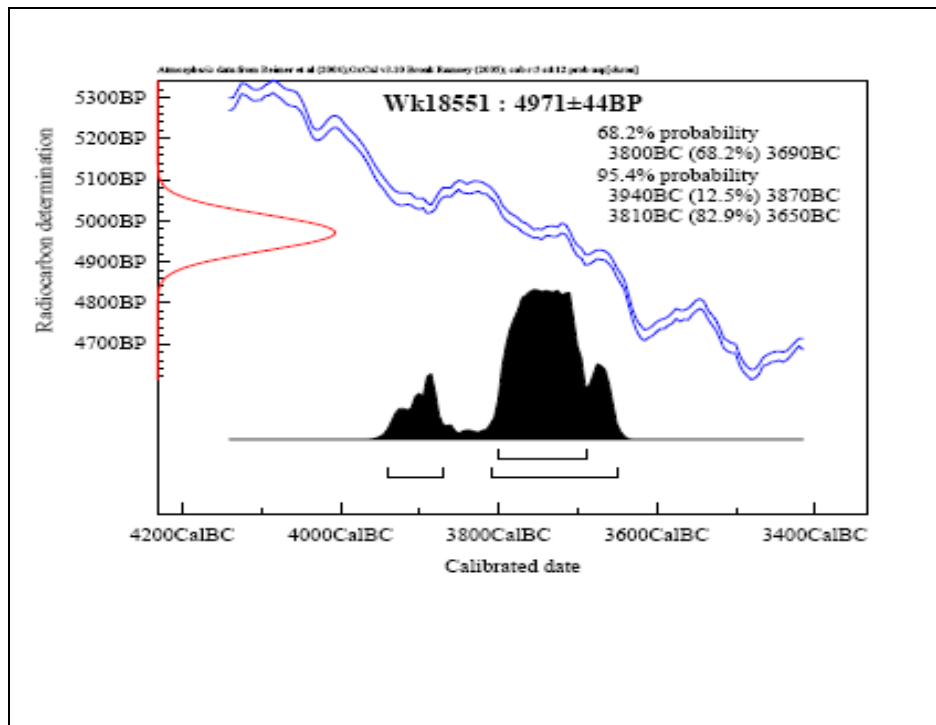
Submitter	Ii Johnston
Submitter's Code	Donaghmore 1/6/1
Site & Location	Dundalk Western Bypass, Ireland
Sample Material	Oak and Hazel ??
Physical Pretreatment	Possible contaminants were removed. Washed in ultrasonic bath.
Chemical Pretreatment	Sample washed in hot 10% HCl, rinsed and treated with hot 0.5% NaOH. The NaOH insoluble fraction was treated with hot 10% HCl, filtered, rinsed and dried.

$\delta^{14}\text{C}$	-461.3 ± 2.9	‰
$\delta^{13}\text{C}$	-24.9 ± 0.2	‰
D^{14}C	-461.4 ± 2.9	‰
% Modern	53.9 ± 0.3	%
Result	4971 \pm 44 BP	

Comments


3/5/06

- Result is *Conventional Age* or % Modern as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier of 1.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- Results are reported as % Modern when the conventional age is younger than 200 yr BP.



APPENDIX 2.3: PREHISTORIC POTTERY REPORT

THE PREHISTORIC POTTERY
FROM
DONAGHMORE 1, CO. LOUTH
(02E1330)

EOIN GROGAN AND HELEN ROCHE

Summary

The Donaghmore site produced an assemblage of 28 sherds – from two middle Neolithic Impressed Ware vessels, and at least two final Neolithic/early Bronze Age Beakers. This material represents small scale domestic activity.

The middle Neolithic

The site produced at least two vessels of the Middle Neolithic Impressed Ware tradition. No. 1 is a bipartite bowl with a markedly closed profile and a sharp angular shoulder and short neck. This vessel had been used for cooking as is indicated by the heavy burnt accretion on the inner surface of the body. Within this general type (Case 1961: 'Ballyalton bowls'; Herity 1982: 'Necked Vessels'; Sheridan 1995: 'decorated bipartite bowls') those associated with so-called 'single burials'¹, especially those in Linkardstown tombs (Brindley and Lanting 1989/90: 'Drimnagh Style bowls') provide the particular background for the Balregan vessel. The main period for these is firmly dated to c. 3525-3350 cal. BC (Brindley and Lanting 1989/90, 4-5, figs 1-2) but wider associations indicate that similar pottery forms may have continued later. Similar vessels occur within the region on a possible ritual site at Balregan (Ó'Donnchadha 2003a) and at Newtownbalregan 6, Co. Louth (Bayley 2004), in court tombs at Ballyedmond (Evans 1938), Co. Down, and Annaghmare, Co. Armagh (Waterman 1965), and the portal tomb at Ballykeel, Co. Armagh (Collins 1965)(see Herity 1982, figs 47.3, 49.2, 31-3). Insufficient of No. 2 survived to identify the precise type.

Final Neolithic/Early Bronze Age Beaker

At least two fine vessels (Nos 3-4) are represented. Vessel 3 is of very good quality fabric similar to that from Newtownbalregan 2 and 6, Co. Louth (Bayley 2004; Grogan and Roche 2005a; 2005b). What appears to be simple horizontally arranged zonal ornament further indicates that the Donaghmore pottery is part of the early Beaker tradition dated to c. 2450-2300 BC. The quantity of pottery present precludes any more extensive evaluation but this site is an important addition to the growing number of sites in the region with Beaker. These include major assemblages at Knowth, Newgrange and Rathmullan, Co. Meath (Eogan 1984; Cleary 1983; Bolger 2002), Mell and the Hill of Rath, Co. Louth (McQuade 2005; Roche and Grogan 2005; Duffy 2002).

Conclusions

All the Donaghmore pottery, as indicated specifically by the burnt accretions on Vessels 1 and 4, the absence of re-fitting sherds, and by the generally fragmentary, and sometimes worn, condition of the material, appears to have derived from domestic activity. The re-use of an earlier site, reflecting an episodic pattern of occupation, is a feature of many prehistoric sites in the region and occurs, for example, at Knowth, Newgrange, Balregan 1, Newtownbalregan 6 and Rathmullan. This suggests that Donaghmore was an area of intensive settlement during the early prehistoric period as is further indicated by other nearby sites at Donaghmore 1a and 4, and Littlemill 1 (Ó'Donnchadha 2002; 2003b).

CATALOGUE

The excavation number 02E1330 is omitted throughout; only the context number followed by the find number is included.

¹ These are not exclusively the burials of single individuals.

Where the pottery is listed in the catalogue the context numbers are in bold: e.g.: **4.2**. The thickness refers to an average dimension; where relevant a thickness range is indicated.

Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (e.g. rims, shoulders) or the fabric, indicate separate vessels.

Middle Neolithic Impressed Ware: context [4]

Vessel 1. This is represented by 20 sherds (1 shouldersherds: **4.2**; 19 bodysherds: **4.3-21**). It has a heavy right-angle, slightly guttered, shoulder, and a short, slightly curved, neck. The fabric is compact and has a grey-buff to buff exterior, and a grey to grey-buff core and inner surface. Dark grey burnishing survives on the neck and shoulder. It has a medium content of crushed coarse dolerite inclusions ($\leq 3 \times 2\text{mm}$, up to $10 \times 6\text{mm}$). The body has a slightly 'lumpy' appearance due to the marked variation in the wall thickness (7.9-10.2mm). There is a slight, shallow, scored line on **4.15**. A burnt accretion on the inner face of some of the sherds (**4.4-7**, **12**, **17**, **19**) indicate that the vessel had been used for cooking.

Context [100]

Vessel 2. This is represented by a single worn bodysherd (**100.1**) of buff fabric with a grey core and smooth inner surface. It has a medium content of crushed coarse-grained dolerite ($\leq 4\text{mm}$). Thickness: 10.6mm.

Final Neolithic/Early Bronze Age Beaker: context [16]

Vessel 3. This is represented by a single bodysherd (**16.1**) of very fine fabric with a smooth (possibly burnished) brown-buff exterior. It has a low content of crushed coarse dolerite and uncrushed quartzite inclusions ($\leq 2\text{mm}$, up to $4 \times 3\text{mm}$). Thickness: 8.2mm.

Decoration This consists of three sharply defined narrow scored horizontal lines.

Vessel 4. This is represented by a single plain worn necksherd (**16.3**) of fine smooth red-buff fabric with a dark-grey core and inner surface. It has a low content of crushed coarse dolerite and uncrushed quartzite inclusions ($\leq 2\text{mm}$, up to $9 \times 6\text{mm}$). A burnt accretion occurs on the inner surface. Thickness: 8.5mm.

Other sherds

16.2, **4** are base/base angle sherds from a fine Beaker, possibly No. 4 (above). Both sherds have been burnt and have a low-medium content of crushed shale and dolerite and uncrushed quartzite.

16.5 is a very worn bodysherd of buff to grey-buff fabric.

Context [79]

There are three small worn bodysherds (**79.1-3**) from a fine vessel.

THE PREHISTORIC POTTERY FROM DONAGHMORE 1A, CO.
LOUTH
(02E1330)
EOIN GROGAN AND HELEN ROCHE

Summary

The Donaghmore 1a site produced an assemblage of 31 sherds and 37 fragments representing at least four early Neolithic Carinated Bowls.

The Early Neolithic

The simple forms represented at the site are the earliest type of Neolithic pottery (Case 1961: 'Dunmurry-Ballymarlagh styles'; Sheridan 1995: 'classic' carinated bowls). These have simple, often everted, rims, gently curved necks and simple or slightly stepped shoulders. The Donaghmore pottery, although worn and fragmentary, represents good quality vessels with traces of burnished finish. Nos 1 and 2 are medium sized vessels with rim diameters of c. 25cm.

Pottery of this type has come from several sites in the vicinity such as Littlemill 1 and Newtownbalregan 6, Co. Louth (Bayley 2004; Grogan and Roche 2006; Grogan and Roche 2005). Larger assemblages occur on the major settlement with two early Neolithic phases at Knowth, Co. Meath (Eogan 1984; Eogan and Roche 1997), as well as at Newgrange (O'Kelly *et al.* 1978) and Feltrim Hill, Co. Dublin (Hartnett and Eogan 1964). A small quantity of this pottery comes from Sites 2 and 5, as well as the 'trial cuttings' at Dalkey Island, Co. Dublin (Liversage 1968). New facets of this distribution include several new rectangular house sites in Meath, Kildare and Louth (Grogan 2004; O'Donovan 2003-2004), as well as pottery from other domestic activity at the Hill of Rath, Co. Louth (Duffy 2002), and Oldbridge, Co. Meath (Campbell 2002).

CATALOGUE

The excavation number 02E1330 is omitted throughout; only the context number followed by the find number is included. Where the pottery is listed in the catalogue the context numbers are in bold: e.g.: **241.3**. The thickness refers to an average dimension; where relevant a thickness range is indicated.

Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (e.g. rims, shoulders) or the fabric, indicate separate vessels.

Early Neolithic Carinated Bowls, context [241]

Vessel 1. This is represented by 20 sherds (1 rimsherd: **241.3**; 2 shouldersherds: **241.2**, 4; 4 necksherds: **241.5**, 14-5, 17; 13 bodysherds: **241.6-13**; 23 fragments: **241.19-41**) from a fine medium sized vessel. There is a slightly flat-topped rim with an outward projection, a gently curved neck, a simple angle shoulder and a deep rounded body. It is of compact dark red-brown fabric burnished externally. There is a medium content of crushed dolerite inclusions ($\leq 2\text{mm}$, up to $3 \times 2\text{mm}$). Neck thickness: 7-9.4mm; body: 5-6.2mm. Maximum external diameter of rim: c. 25cm Height of neck: c. 4.9cm Weight of sherds: 180g

Other sherds

241.1 is a very worn bodysherd of pale red-buff fabric with a grey core. It has a low content of crushed quartzite and dolerite inclusions ($\leq 1.5\text{mm}$). There is a black sooty accretion on the inner face. Body thickness: 6.3mm. Deep horizontal scores on the outer surface occurred during or after excavation and do not represent decoration.

241.16 is a bodysherd of red-buff fabric with a grey core. It has a low content of crushed and uncrushed quartzite inclusions ($\leq 2\text{mm}$, up to 4 x 2mm). Body thickness: 7.5mm.

Context [242]

Vessel 2. This is represented by 6 sherds (1 rimsherd: **242.1**; 1 shouldersherd: **242.3**; 4 bodysherds: **242.2**, 4-5, 7; 3 fragments: **242.8-10**) from a fine medium sized vessel. There is a rounded and everted rim with a distinct thumbnail smoothing groove immediately beneath the rim where the top has been folded over and smoothed into the neck. There is a curved neck and a simple angle shoulder. It is of compact grey to buff burnished fabric. There is a medium content of crushed and uncrushed quartzite inclusions ($\leq 2\text{mm}$, up to 5 x 4mm). Neck thickness: 6.5mm; body (upper): 7.9mm, (lower): 5.5mm. Maximum external diameter of rim: c. 25cm Height of neck: c. 4cm Weight of sherds: 20g

Context [243]

Vessel 3. This is represented by 3 bodysherds (**243.1**, 3-4; 11 fragments: **243.5-16**) from a vessel of compact fabric with a smooth buff exterior and a dark grey core and inner surface. There is a low-medium content of crushed and uncrushed quartzite inclusions ($\leq 2\text{mm}$). Thickness: 11.5mm.

Vessel 4. This is represented by a single bodysherd (**243.2**) from a vessel of compact brown-buff fabric with a grey core. There is a medium content of crushed and uncrushed quartzite inclusions ($\leq 2\text{mm}$). Thickness: 10mm.

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APPENDIX 2.4: OSTEOLOGICAL REPORT

OSTEOARCHAEOLOGICAL REPORT OF CREMATED BONE FROM

**DUNDALK WESTERN BYPASS,
DONAGHMORE 1
COUNTY LOUTH**

Moore Group
Animal Bone Report Prepared for IAC Ltd
Licence No: 02E1330
Author: Camilla Lofqvist,
Osteoarchaeological Services Section
Date: November 2007

NON TECHNICAL SUMMARY

This report describes the results of the osteoarchaeological analysis of bones retrieved during excavation carried out at Donaghmore 1, Co. Louth. The author undertook the bone analysis for the Osteological Service Section of Moore Archaeological & Environmental Services Ltd (Moore Group) on behalf of the client, IAC Ltd.

The bone analysis was commissioned in order to provide an osteoarchaeological aspect of the development site and to see if the bone material could provide additional information on the interpretation of the site. The bone analysis only entailed a total of three small burnt fragments. The bones were in a very poor condition with a total weight of only 0.1g. None of the three fragments from the bone sample could be identified.

1. INTRODUCTION

The Osteoarchaeological Services Section of Moore Group was commissioned to undertake an osteoarchaeological analysis of disarticulated burnt bones retrieved during an excavation at Donaghmore 1, Co. Louth. The excavation was carried out by IAC Ltd under licence no. 02E1330 and was part of the archaeological work along the Dundalk Western Bypass. The osteoarchaeological analysis was carried out on behalf of IAC Ltd and this report details the result of this analysis.

2. METHODOLOGY

During analysis of the material, all fragments were counted and weighed. Quantification was based on two methods:

NISP: Number of Identified Specimens. Indicates the total number of fragments found. The NISP is decided by different factors like the age of the animal, the size of the animal and how well the preservation was at the place where the bones were deposited.

MNE: Minimum Numbers of Elements. Indicates the minimum number of anatomical units that are present and what side they are from. MNE is used to calculate MNI and is used in the Fusion data tables. To allow for a young individual to grow the bones from a juvenile at birth are made up of several different parts. When the individual gets older the different parts grow together and form one bone. The parts of the bone grow together at different age-stages and this makes it possible to estimate the age of an animal. This means that three bone fragments can be part of the same bone element. For example: Proximal and distal epiphyses fused with the diaphysis. To avoid getting a higher MNE all loose epiphyses have to be paired with all unfused diaphysis.

The bones were searched for traces of gnawing, cut marks and pathology. The gnaw marks give information about how exposed the bones were after being discarded. A high percentage of bones with traces of gnawing indicates that the bones were left exposed so animals like dogs, rats and other scavengers had access to the bones. Pathology is the study (logos) of suffering (pathos) or better defined as "the study of disease processes".

Animal bone

The cut marks can give valuable information about how animal carcasses were butchered. These marks can also give information about if the animals were kept for their milk, as a source of meat, or if they played an important part in industrial production of for example hide or bone objects.

Human bone

Human skeletal remains can provide a wide range of information, e.g. demography, sex and age profile, stature and diseases. Furthermore the analysis can provide details of diet, occupation, general state of health and traumas caused to individuals.

Paleopathology is the study of disease in *ancient* populations as revealed by skeletal remains. The skeletal remains of an individual can record events in this person's life, events like diseases, trauma, metabolic disorders, circulatory disturbances, tumours and mechanical stress and so on. Trauma is the second most common pathology and can be defined as any bodily injury or wound. An analysis of skeletal trauma in a population can reveal a lot of information about the society in which the individuals have lived, such as lifestyle, economy, occupation, violence and healing of injuries indicating the level of medical ability, treatments and so on.

3. RESULT

The total weight of the bone sample from Donaghmore 1 was only 0.1g. There were a total of three fragments (NISP) from three bone elements (MNE). The bone was white in colour and very fragmented. One fragment from bone sample 2 (context 16) was smaller than 5mm while the remaining two fragments were between 5-10mm (Table 1, Plate 1).

Sample No.	No. of fragment	Fragment size	Weight
16:2	1	<5mm	- g
16:2	2	5-10mm	0.1g

Table 1. Fragment size and weight of the burnt bone.

Table 1. Fragment size and weight of the burnt bone

None of the burnt bones could be identified due to the high degree of fragmentation. Bones change their structure and composition through heating. Moisture is driven off and the organic component (chiefly collagen) combusted, leaving only the mineral portion. The result is fragmented and distorted bone which is usually reduced in size. The temperature during the firing also affects the colour of the bone, where red/orange coloured bones indicate a low temperature while white coloured bone indicates a high temperature. The white colour and the high fragmentation of the Donaghmore 1 bones indicated a high heat during burning, with temperatures reaching at least 6450C or higher. Cremated bone tends to survive better and longer than unburnt bone. However, just after cremation the bone is very brittle and prone to breaking. The high fragmentation of the bone sample from Donaghmore 1 suggests the bones were disturbed while still hot and/or that they might have been exposed to weathering and trampling. (Plate 2)



Plate 1. Bone sample from Donaghmore 1.



Plate 2. Close up of burnt bone sample from Donaghmore 1.

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Bone Database

Bag	Sample No	Context	Animal	Element	Part of element	NISP	MN E	Side	Pr epi	P 1/3	M 1/3	D 1/3	Di epi	J	M/F	C	G	P	Burnt	Descry C/P/G	Meas	Comment	Weight
1	2	16	Unid	Unid	Burnt frag	3	3	-	-	-	-	-	-	-	-	-	-	-	3	-	-	Small, white	0.1g

APPENDIX 2.5: LITHIC REPORT

CHIPPED STONE AND WORKED STONE ASSEMBLAGE ANALYSIS REPORTS AND CATALOGUES

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SECTION 4: DONAGHMORE 1 AND 1A: (02E1330)

CHIPPED FLINT AND NON-FLINT ASSEMBLAGE

Introduction

In total, 18 flint artefacts were recovered during excavations at Site 108, Donaghmore 1 and 1A (02E1330) (Ó Donnchadha 2006a); just over half of these were found in Area 1 (10/18 pieces), with the remainder being recovered from Area 1A (8/18 pieces). The full assemblage is catalogued below (Table 4.1).

Unique No	Area	Context	Basic Character	Classification	Condition	Cortex	Fragment size (mm)	Length (mm)	Breadth (mm)	Thickness (mm)	Mass (g)
02E1330:2:1	1	2	Modified	Scraper	Patinated	Tertiary	30	-	28	9	8.50
02E1330:2:2	1	2	Modified	Scraper bipolar	Fresh	Secondary	-	25	18	7	2.86
02E1330:3:1	1	3	Unworked	Abraded lump	Abraded	Secondary	-	35	28	23	32.88
02E1330:3:2	1	3	Flake	Bipolar shatter proximal	Fresh	Tertiary	20	-	18	3	1.56
02E1330:3:3	1	3	Unworked	Abraded lump	Abraded	Secondary	-	25	18	13	5.50
02E1330:3:4	1	3	Flake	Bipolar complete	Abraded	Secondary	-	25	15	14	5.22
02E1330:5:1	1	5	Unworked	Abraded lump	Abraded	Tertiary	-	15	12	11	2.37
02E1330:18:2	1	18	Flake	Bipolar complete	Abraded	Tertiary	-	35	12	11	4.55
02E1330:18:3	1	18	Unworked	Abraded lump	Abraded	Tertiary	-	13	12	6	1.81
02E1330:18:4	1	18	Modified	Edge retouched	Fresh	Secondary	-	31	25	4	2.47
02E1330:236:1	1A	236	Angular shatter	Angular shatter	Burnt	Tertiary	-	10	7	6	.62
02E1330:236:2	1A	236	Unworked	Thermally split pebble	Patinated	Primary	-	30	21	16	9.98
02E1330:236:3	1A	236	Unworked	Thermal flake	Abraded	Secondary	-	32	20	10	7.48
02E1330:236:4	1A	236	Unworked	Abraded lump	Abraded	Secondary	-	25	20	18	10.37
02E1330:237:3	1A	237	Flake	Bipolar shatter proximal	Patinated	Secondary	22	-	21	5	3.23
02E1330:237:4	1A	237	Flake	Platform shatter distal	Fresh	Tertiary	18	-	31	4	2.71
02E1330:237:5	1A	237	Modified	Scraper	Fresh	Secondary	-	17	25	3	2.28
02E1330:240:1	1A	240	Modified	Scraper	Fresh	Primary	-	28	19	6	5.09

Table 4.1: Dundalk Western Bypass: Donaghmore 1 and 1A (02E1330): showing basic composition of the flint assemblage.

A substantial proportion of the assemblage is unworked (7/18 pieces), and these are comprised of abraded lumps (5 pieces), as well as thermally damaged material (1 pebble, 1 thermal flake). In addition to these, a quantity of primary knapping debitage was recovered (5 flake debitage, 1 angular shatter: 6/18 pieces), but these did not include any cores. The remainder, constituting a significant element of the total assemblage, were modified tools (5/18 pieces), the majority of which were scrapers (4/5 pieces); the remaining modified tool was an edge retouched cutting tool.

General provenance of assemblage

All of the flint assemblage was recovered from Group 2 remains, associated with prehistoric activity (Ó Donnchadha 2006a). Of the material recovered from Area 1 (10 pieces: Table 4.1), a small quantity of modified tools were found in topsoil (2 pieces: both of which were scrapers: 02E1330:2:1-2: Plates 4.1-4.2). In addition, a small number of unworked pieces (2 pieces) and flake debitage (2 pieces) were found in [C3] (unspecified context in Ó Donnchadha 2006a). [C5], the fill of a possible firepit, yielded one piece of unworked flint, which had not been burnt, despite its context of deposition. From [C18], a charcoal spread, a small number of artefacts were recovered, including unworked material (1 piece), flake debitage (1 piece) and a modified tool (1 edge retouched piece) (Table 4.2).

Context No	Description	Unworked	Core	Flake Debitage	Angular shatter	Modified	TOTAL
Area 1							
2	Topsoil	-	-	-	-	2	2
3	Not specified	2	-	2	-	-	4
5	Group 2: Subgroup 1005: Fill of possible fire pit C200	1	-	-	-	-	1
18	Group 2: Subgroup 1005: Charcoal spread	1	-	1	-	1	3
Area 1A							
236	Group 2: Subgroup 1007: Burnt spread	3	-	-	1	-	4
237	Group 2: Subgroup 1007: Burnt spread	-	-	2	-	1	3
240	Group 2: Subgroup 1007: Possible firepit lining	-	-	-	-	1	1
	TOTAL	7	-	5	1	5	18

Table 4.2: Dundalk Western Bypass: Donaghmore 1 and 1A (02E1330): showing distribution and basic composition of the flint assemblage.

From Area 1A, flint artefacts were found in [C236], [C237] and [C240] (8 pieces: Table 4.1-4.2). A quantity of unworked material and a piece of angular shatter were found in [C236], a burnt spread. Another burnt spread, [C237], yielded flake debitage (2 pieces) and a modified tool (1 scraper); a scraper was also recovered from [C240], the lining of a possible firepit, from which no other flint artefacts were found. For the majority of the assemblage, the source of the raw material remains indeterminate, but when it could be ascertained, it was apparent that water-rolled pebbles were exploited (3 pieces); these included one of the scrapers (02E1330:2:2), a complete bipolar flake (02E1330:3:4), and the thermally split pebble (02E1330:236:2) (Table 4.1). No refit groups were discernable within the assemblage, and therefore it is apparent that the worked assemblage is the result of numerous knapping events. With regard to the condition of the assemblage, most artefacts survived in either a fresh (6/18 pieces) or slightly abraded condition (8/18 pieces). A few pieces were patinated (3/18 pieces), but only one piece was in a burnt condition: this was a piece of angular shatter (02E1330:236:1) recovered from the burnt spread [C236].

Assemblage summary: DONAGHMORE 1 AND 1A: (02E1330)

Of the assemblage, little further can be said of the unworked material, which was found as diminutive, abraded lumps (ranging in maximum length from 13-35mm). The unworked material was mainly found within burnt deposits, but had not been subject to burning. It is possible, then, that this material is part of the background geology of the site, occurring naturally in the surrounding deposits and soils, rather than signifying the curation of raw material; in this case, they seem to have found their way into the burnt deposits after any burning had been extinguished. Only one artefact within the full assemblage seems to have suffered burning associated with its context of deposition (02E1330:236:1), and consequently was damaged beyond further classification; whether this piece had been worked prior to burning cannot now be determined.

While no cores were recovered from Donaghmore 1 and 1A, a small assemblage of flake debitage was found (5 pieces), which were found in [C3] (unspecified), [C18] and [C237] (burnt spreads). Both pieces found in [C3] exhibited bipolar reduction techniques, one piece being complete (02E1330:3:4) and one being a proximal fragment (02E1330:3:2), but it was not possible to refit these pieces and they did not seem to be derived from the same knapping episode. A complete bipolar flake was also recovered from C18, a charcoal spread. Two flake shatter fragments were found

in [C237], one of which was a bipolar proximal fragment (02E1330:237:3); the remaining piece was a distal fragment, and while its reduction technique cannot be conclusively established, it may derive from platform based reduction. Of the modified tools found at Donaghmore 1 and 1A, the majority were small scrapers (4 pieces). Two of these were found in topsoil: one was formed on a distal blade fragment (possibly platform reduced: 02E1330:2:1: Plate 1), with the other piece being formed on a bipolar flake (02E1330:2:2: Plate 2). While both pieces appear to be scrapers, they are slightly irregular and minimally retouched, and could also have been used as cutting tools. A further scraper was recovered from [C237] (02E1330:237:5); this was a thumbnail scraper formed on the distal fragment of a flake (possibly platform reduced), with the scraping edge being located along the right lateral edge of the fragment. The scraper found in [C240] (02E1330:240:1) was a minimally retouched thumbnail scraper, formed on a platform reduced core trimming flake. The remaining modified tool, a minimally retouched cutting tool, was found in [C18] (02E1330:18:4); this was a small, irregular platform reduced flake, with minimal edge retouch along the right lateral edge on the ventral face.

Discussion: DONAGHMORE 1 AND 1A: (02E1330)

The body of chipped stone artefacts recovered from Donaghmore 1 and 1A is few in quantity and diminutive in scale, and points to limited availability of useful flint for the production of tools. As such, it is not surprising that the majority of the reduction techniques in evidence are bipolar based. Bipolar technology (ie bashing or splintering, on a hard surface/anvil) tends to be found where raw material is limited to small scale material, and while the technique necessarily leads to less control in the knapping process than may occur in platform reduction, the small scale of the raw material rules out the feasibility of using the latter method, which requires greater planning, and can consequently result in greater wastage. Where platform technology was apparent, reduction techniques were simplistic, making use of large unmodified planar platforms, and exhibiting little evidence for preparation prior to flaking.

With such a small quantity of artefacts, it is surprising to find such a high concentration of modified tools, accounting for almost one-third of the entire assemblage. Such high proportions of tools suggests that while resources were limited, there was a concerted effort to produce functional tools, and wastage was kept to a minimum; this is further emphasized by the high proportion of tools produced on fragmentary flakes, which may have been broken prior to tool production (2/5 tools).

While the assemblage includes few tools which are clearly chronologically diagnostic, very small scrapers (or thumbnail scrapers) are not found in Ireland until later in the Irish Neolithic, possibly the Final Neolithic (coinciding with the introduction of Grooved ware) and continue in use into the Early Bronze Age (Nelis 2003). Further afield, in continental Europe, the development of thumbnail scrapers has been seen as a functional response to the arrival of horses into the economy (Bruce Bradley pers comm); such an imperative behind the phenomenon of thumbnail scrapers in Ireland has yet to be fully explored, but it remains a possibility given that horses are thought to arrive in Ireland at a similar time (Eileen Murphy pers comm).

While thumbnail scrapers are therefore thought to be a late development in the Irish Neolithic, and there is a perception that scrapers generally decrease in size during the course of the Irish Neolithic, in fact it seems that small scrapers can be found in small quantities throughout the Irish Neolithic where there is limited availability of large scale raw material; beyond purely functional and aesthetic imperatives,

therefore, scraper size can be dictated by the dimensions available in the raw material. In such circumstances, then, it is not clear that the small size of the scrapers would be directly linked to functionally driven developments, but rather will have been driven by necessity. Such factors may be particularly relevant at sites such as Donaghmore 1 and 1A, where small-scale raw material was available in small quantities, and scrapers were occasionally formed on broken flakes. The particularism of the Donaghmore 1 and 1A assemblage, combined with the limited quantity of artefacts within the assemblage, therefore leaves only limited potential for conclusive comment on the dating of the assemblage. In broad terms, it is likely that the assemblage is the result of Neolithic or Bronze Age activity, and, in particular, may be more specifically related to activity in the Final Neolithic/Early Bronze Age.



Plate 1: Donaghmore 1 and 1A (02E1330): Scraper (02E1330:2:1).



Plate 2: Donaghmore 1 and 1A (02E1330): Scraper (02E1330:2:2).

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