CALL11/004

CALLIACHAR WIND FARM, PERTH & KINROSS

Excavation of Site 2

for Calliachar Wind Farm Ltd

07/02617/FUL

October 2012

HEADLAND ARCHAEOLOGY Ltd

REGISTERED ORGANISATION IfA

CALLIACHAR WIND FARM, PERTH & KINROSS

Excavation of Site 2

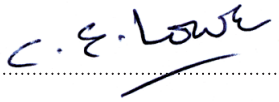
for Calliachar Wind Farm Ltd

07/02617/FUL

October 2012

HA Job no.: CALL11/004
NGR: NN 85448 43845
Parish: Dull
Local authority: Perth and Kinross
OASIS ref.: headland1-130771
Archive will be deposited with RCAHMS

Project Manager	Chris Lowe
Author	Magnar Dalland
Fieldwork	Magnar Dalland, Laura Scott & Richard Tuffin
Graphics	Caroline Norrman & Anna Sztromwasser
Specialists	Orla Power & Scott Timpany – Environmental
Approved by	Chris Lowe – Project Manager



Headland Archaeology (UK) Ltd
© Headland Archaeology (UK) Ltd 2012

North East

Headland Archaeology
13 Jane Street
Edinburgh EH6 5HE
0131 467 7705
office@headlandarchaeology.com

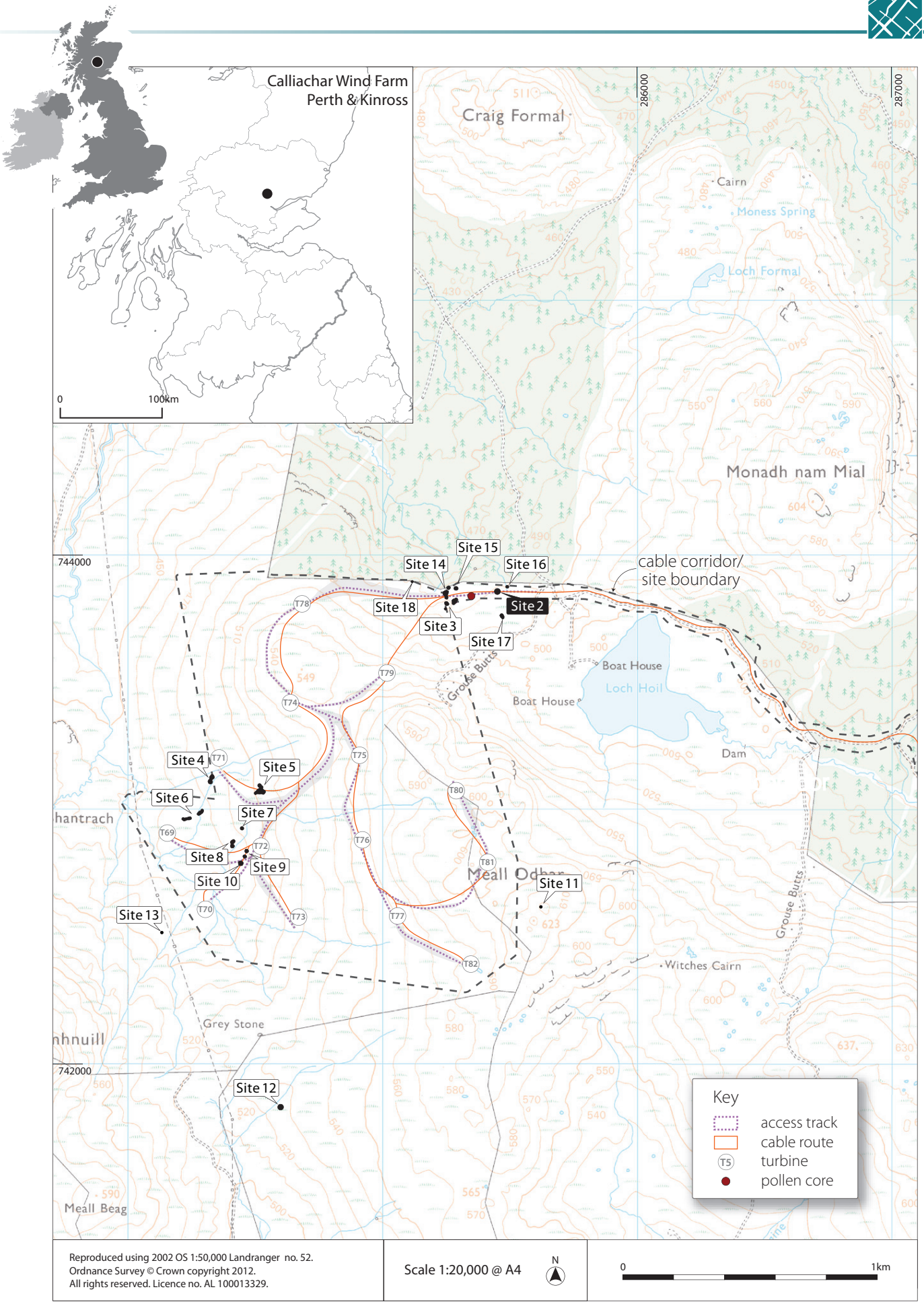
www.headlandarchaeology.com

CONTENTS

© Headland Archaeology (UK) Ltd 2012

LIST OF ILLUSTRATIONS

© Headland Archaeology (UK) Ltd 2012



Illus 1

Site location

CALLIACHAR WIND FARM, PERTH & KINROSS

Excavation of Site 2

Site 2 was one of 38 features recorded during a walkover survey at Calliachar Wind Farm. It was a man-made hollow cut into a natural ridge near the end of the access road corridor where it enters the north-east corner of the turbine area. It was situated at 487m OD at the foot of the north-facing slopes of Meall Odhar. The site would be directly impacted upon during the construction of the access track to the turbines and it was therefore necessary to excavate the site.

Fully excavated the pit was oval on plan, 4.4m by 3.7m. It was 2m deep and had irregular steep sides. There was a large post-pit cut into the base of the pit containing a post-pipe surrounded by large packing stones. A sequence of occupation deposits containing significant amounts of charcoal formed a 0.4m deep build up within the pit.

No finds or any significant macrofossils were retrieved from the pit, and the true nature of the site remains uncertain. However, the evidence suggests that it may have been a small dwelling with a conical roof supported by a central post. Large amounts of charcoal were retrieved from the deposits within the feature. Radiocarbon-dating of these deposits would provide a chronological framework for the structure.

1. INTRODUCTION

Calliachar Wind Farm is located 6km to the south of Aberfeldy in Perth and Kinross. The scheme comprises 14 turbines positioned within an area of some 1.8 km^2 to the north-west of Meall Odhar (Illus 1).

Planning permission was granted for the construction of the Calliachar Wind Farm subject to a number of archaeological conditions. In order to meet the terms of the archaeological conditions to the satisfaction of the planning authority, an Archaeological Mitigation Plan (Headland Archaeology 2011) was drawn up to mitigate the impacts of the wind farm development on the cultural heritage resource of the development area. As part of this mitigation strategy a walkover survey was carried out over the entire site. During this survey eighteen previously unrecorded sites were identified, some of which lay within the construction footprint of the development. The sites comprised 38 individual structures including 22 shieling huts, two possible hut-circles, two enclosures, three hollow features, one bank, three shooting butts, four clearance cairns and one possible funerary cairn (Dalland 2012).

Site 2 was one of ten features that would be directly impacted upon during the construction of the access track and it was therefore necessary to excavate the site. It had been identified during the survey as a rounded man-made hollow 3.2m in diameter and 0.8m deep.

The excavation of Site 2 was carried out between 28th February and 27th April 2012.

2. ARCHAEOLOGICAL BACKGROUND

The site was located near the end of the access road corridor where it enters the north-east corner of the turbine area. It was situated at 487m OD at the foot of the north-facing slopes of Meall Odhar and some 680m to the north-west of Loch Hoil (Illus 1). Several other sites had been recorded in this area during the walkover survey including a small hollow (Site 16), a possible prehistoric hut-circle (Site 15) as well as nine post-medieval shielings with two associated enclosures (Sites 3a–f, 14a–c, 17 and 18) (*Illus 2*).

Site 2 was cut into the top of a natural ridge aligned northeast to southwest (*Illus 3*). There was clear evidence of a low bank around the edge of the pit to the northeast. The pit and bank were covered in the same type of vegetation as their surroundings, indicating that this was not a recent feature.

This site has no obvious parallels amongst the known archaeological sites in this area. The two other hollows recorded during the walkover survey (Site 5f & Site 16) were significantly smaller and much shallower than Site 2. At the time of the survey it was tentatively interpreted to be a form of shooting butt, pre-dating the 20th century grouse butts arranged in a row up the hill some 180m to the south. However, the size of the pit seemed

© Headland Archaeology (UK) Ltd 2012

2

Illus 2

Sites 2, 3, 14–18 seen from the hill to the south

to be excessive for a shooting butt even if it was designed for hunting larger game. The nature of the feature, therefore, remained unknown.

3. METHODS

Initially the turf and topsoil was removed by hand from a northeast-facing quadrant. Due to the narrow base of the pit it became clear that maintaining a standing section across the hollow would severely obstruct its excavation. It was therefore decided to use temporary sections to clarify any complex stratigraphical issues and build up a full digital cross-section by successive surveys of context surfaces along the same section line. The entire interior was therefore de-turfed and the underlying deposits within the pit were excavated in stratigraphical order.

The part of the bank that lay within the original northeast-facing quadrant was de-turfed. Two narrow slots were cut through the bank along the sides of the quadrant and the north-facing section along the side of the quadrant was recorded by photography and on permatrace at scale 1:10.

Apart from the section (at 1:10) and plan (at 1:20) of a post-pit with packing stones at the base of the feature which were recorded on permatrace, the composite section and all other deposits within the pit were recorded using a tablet computer running CAD software linked to a total station and related to the National Grid.

All recording was in accordance with the Institute for Archaeologists standards and guidance. All contexts, small finds and environmental samples were given unique numbers and the recording was undertaken on *pro forma* record cards that conform to accepted archaeological norms. All stratigraphic relationships were recorded (Appendix 1.1).

Digital photographs and black and white prints were taken to record archaeological contexts and to illustrate the general nature of the work. A graduated metric scale was clearly visible in record photographs of contexts. All photographs were recorded by individual print number alongside information on the context and direction of view (Appendix 1.2).

The original shape of the pit was quite irregular partly due to a number of large boulders embedded in the natural sub-soil. The shape was therefore recorded through two methods:

a. Conventionally by recording the plan of perceived top and bottom of slopes and outline of embedded boulders

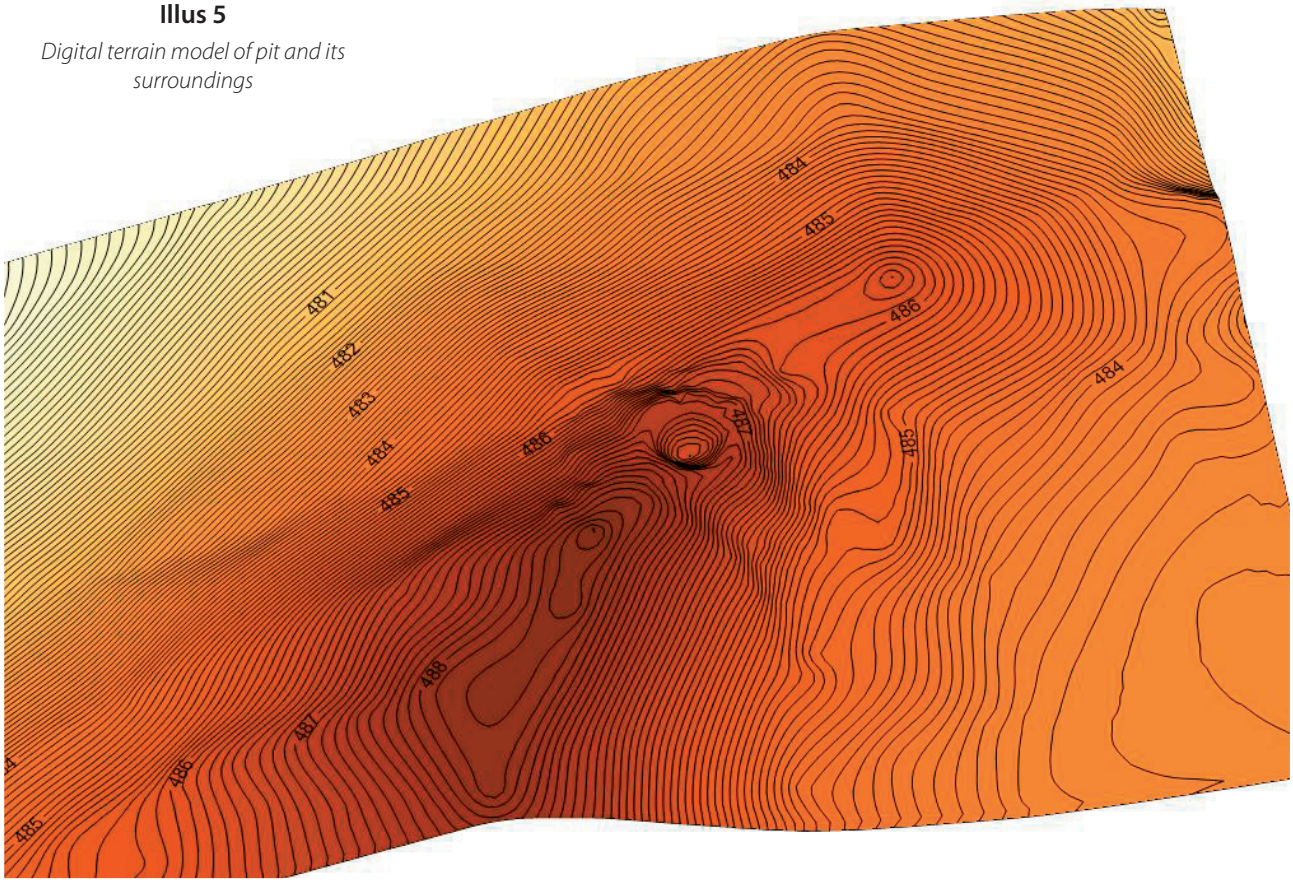
Illus 3
Site 2 shown on aerial photograph 2009

Illus 4
3-dimensional model of pit created from digital photographs

© Headland Archaeology (UK) Ltd 2012

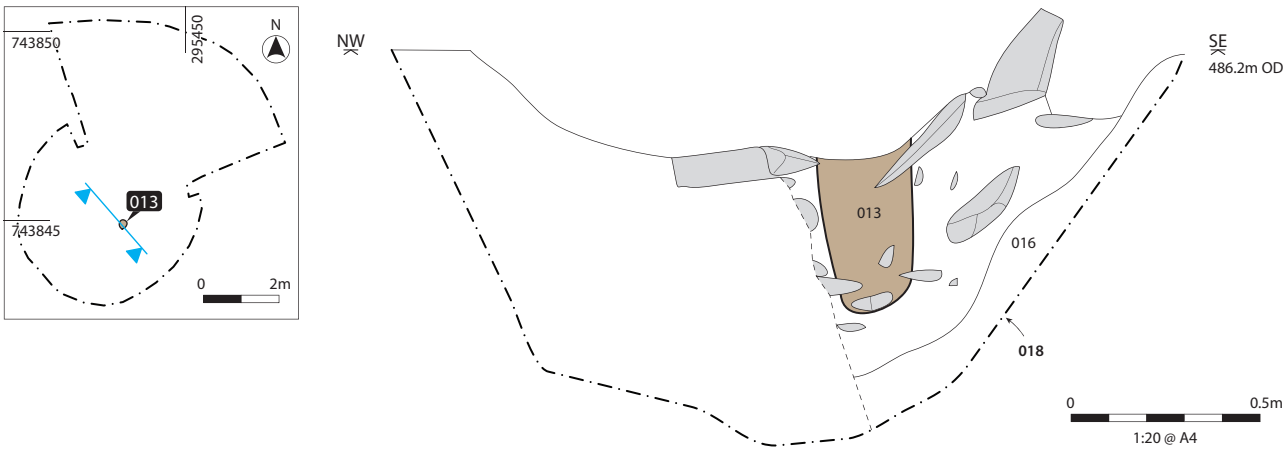
Illus 5

Digital terrain model of pit and its surroundings



Illus 6

Site before excavation. From SW



Illus 7

Section across post-pipe [013] in east half of cut [026]

as well as two profiles across the feature. Due to steep slopes the plan was not recorded on permatrace but in CAD using a tablet computer linked to a total station.

b. Through photogrammetry by taking some 280 digital photos of the feature. The photos were taken from all angles; from within the pit, from the sites and from above using the pole camera. The photos were fed into photogrammetry software that created a 3-dimensional model of the site (*Illus 4*). Four reference points were located onto CAD for future calibration and geo-referencing of the model.

A gouge auger survey was undertaken by Dr Scott Timpany with the aim of identifying whether suitable deposits exist on site for the preservation of pollen and other environmental material (Scott & Tuffin 2012). The auger samples were taken from a boggy area some 100m to the west of the site (*Illus 1*). Analysis of the environmental remains will potentially help to interpret the excavated remains, as the activity at Site 2 might have left a significant signal in the pollen record. The use of fire within the pit may also have left a detectable signal in the concentration of microscopic charcoal within the peat sequence.

Archaeological deposits were sampled systematically in accordance with Headland Archaeology Ltd standard environmental sampling practises. A sample of 10 litres was taken from all deposits containing charred remains for wet sieving. The samples are catalogued in the sample register (Appendix 1.3) and were assessed by Power and Timpany (Appendix 2). No artefacts were recovered during the excavation or from the sample retents.

4. RESULTS

The hollow was cut into the top of a 60m wide and up to 10m high natural ridge aligned northeast to southwest. It was cut into the crest of the ridge at a point where it sloped gently to the northeast (*Illus 5*). There was clear evidence of a low bank around the edge of the pit to the northeast enclosing some three-quarters of its circumference. The feature and the surrounding ridge were covered by low semi-mature heather that had been rejuvenated as a result of fairly recent muirburn (*Illus 6*). The pit measured some 3.2m in diameter and was 0.8m deep. It had steep sides, up to a 45° angle, and a rounded base. As it was cut into the crest of a slightly sloping ridge the southwest side was significantly higher than the opposite side, 1.05m and 0.65m respectively.

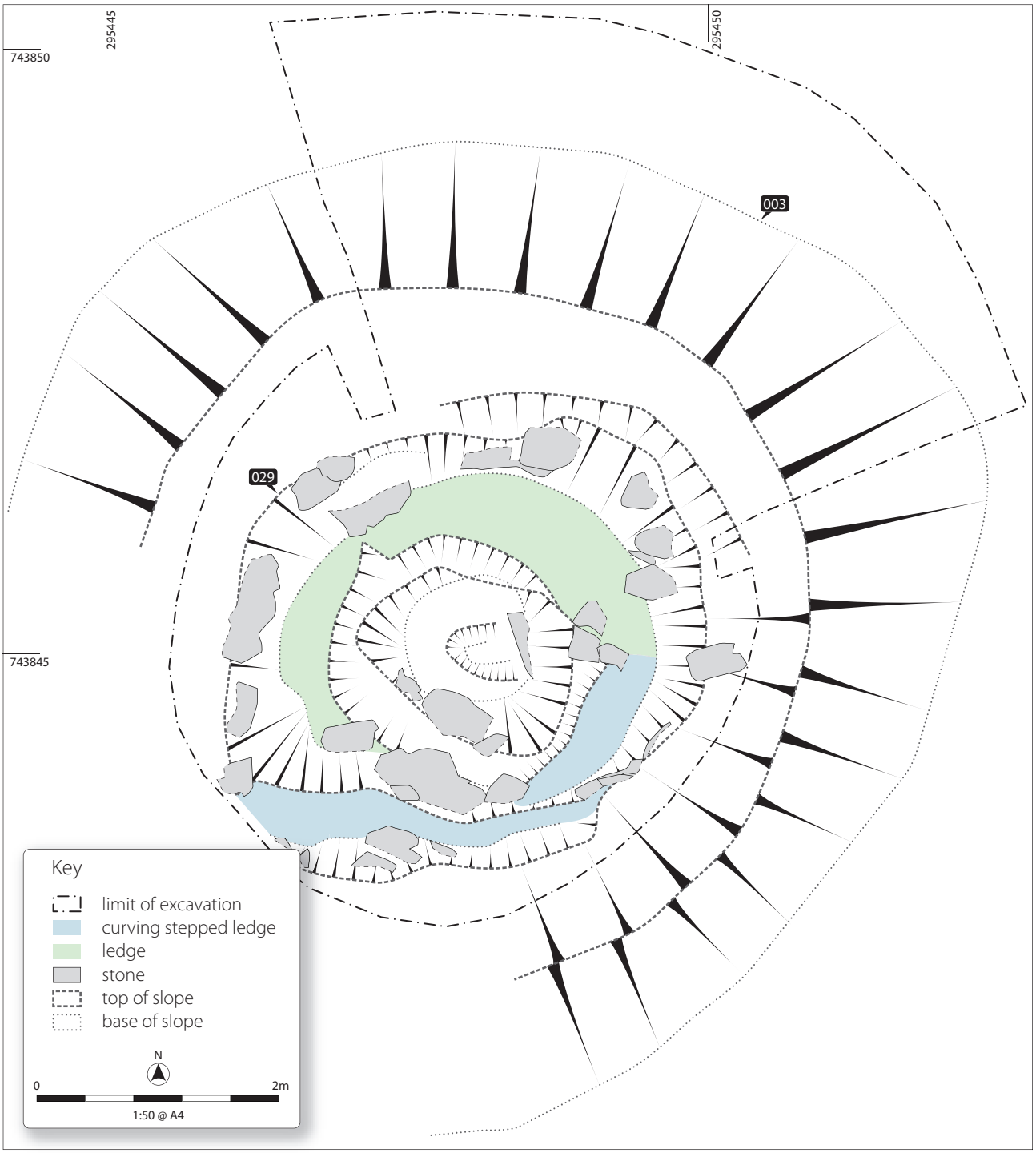
Fully excavated, the pit was oval on plan, 4.4m by 3.7m aligned northeast to southwest along the crest of the ridge (*Illus 5*). It was 2m deep and had irregular steep sides up to an 80° angle. The southwest and northeast sides were 2.2m and 1.75m high respectively. The irregular shape was partly due to the presence of several large boulders in the subsoil but it also reflected the way the pit had been shaped when originally created.

There was a clear ledge about 0.8m above the very base of the pit. It was 0.4m to 0.75m wide and located around the north half of the feature. The ledge was next to a large oval cut (018), 1.7m by 1.4m and 0.8m deep, aligned northeast to southwest. The cut contained packing stones (019), including a boulder up to 1m across around a post-pipe (023) 0.25m in diameter and up to 0.4m deep that was located off-centre towards the east side (*Illus 7*). With the cut backfilled the ledge formed part of a levelled oval floor-space 3m by 2.3m covering an area of some 5.5m^2 in the middle of the pit (*Illus 8*).

The steep sides of the feature made it increasingly difficult to remove spoil from within the pit during the excavation. This problem would also have faced those who originally excavated the feature. The problem had been solved by the creation of a narrow curving stepped ledge along the south side of the pit up to its western edge. The ledge was up to 0.4m wide and may have been used both during the construction and later use of the feature (*Illus 8*).

A series of sandy deposits containing various amounts of charcoal were deposited on top of the floor space. The total build up of

© Headland Archaeology (UK) Ltd 2012



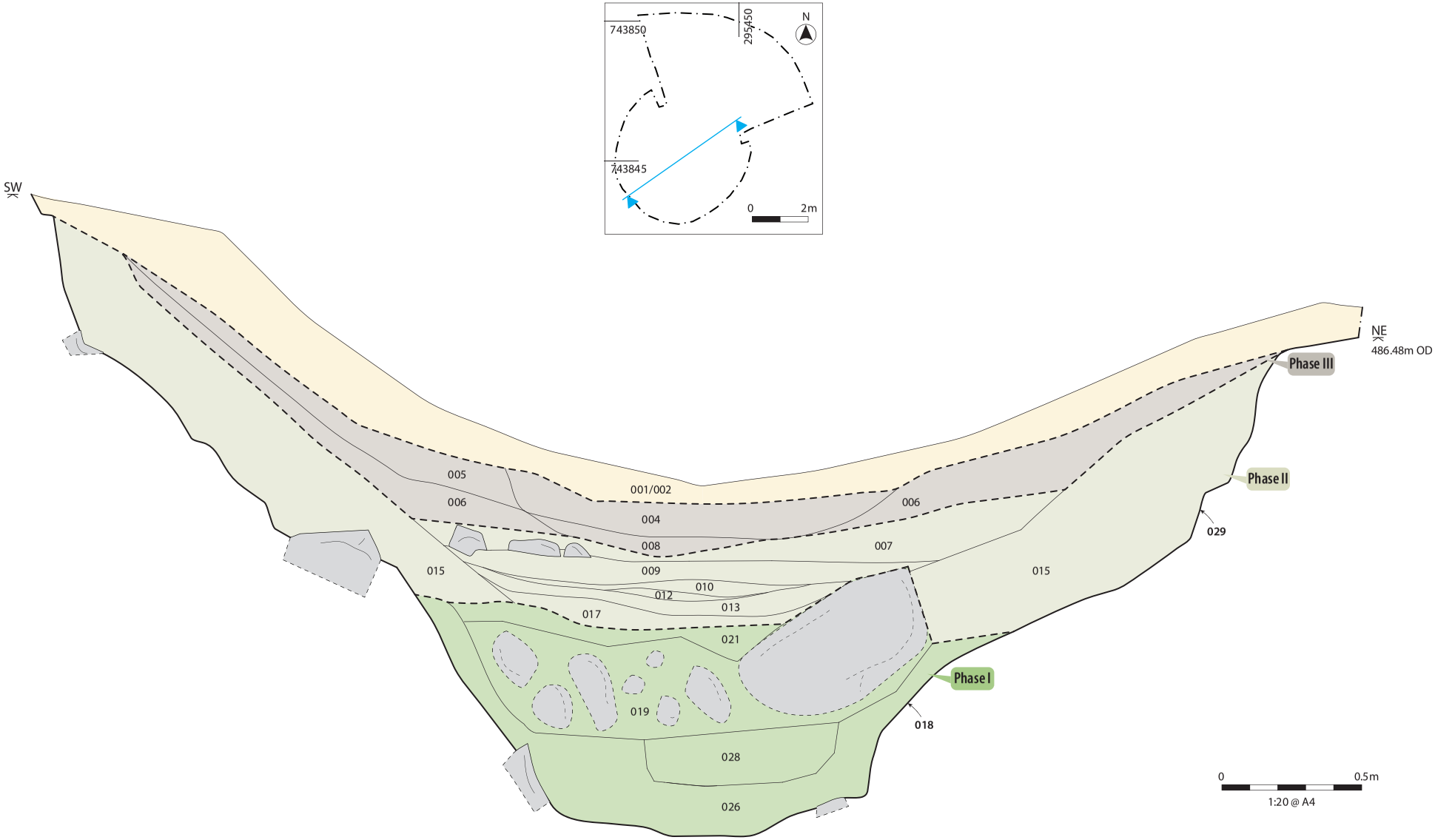
Illus 8

Cut of pit [029] with bank [003] around the edge

sediments was up to 0.4m thick. Some of the layers had pockets of concentrated charcoal, sometimes associated with reddish oxidized sand. This would indicate that these are *in situ* deposits originating from the use of the feature and not material brought into the structure from elsewhere.

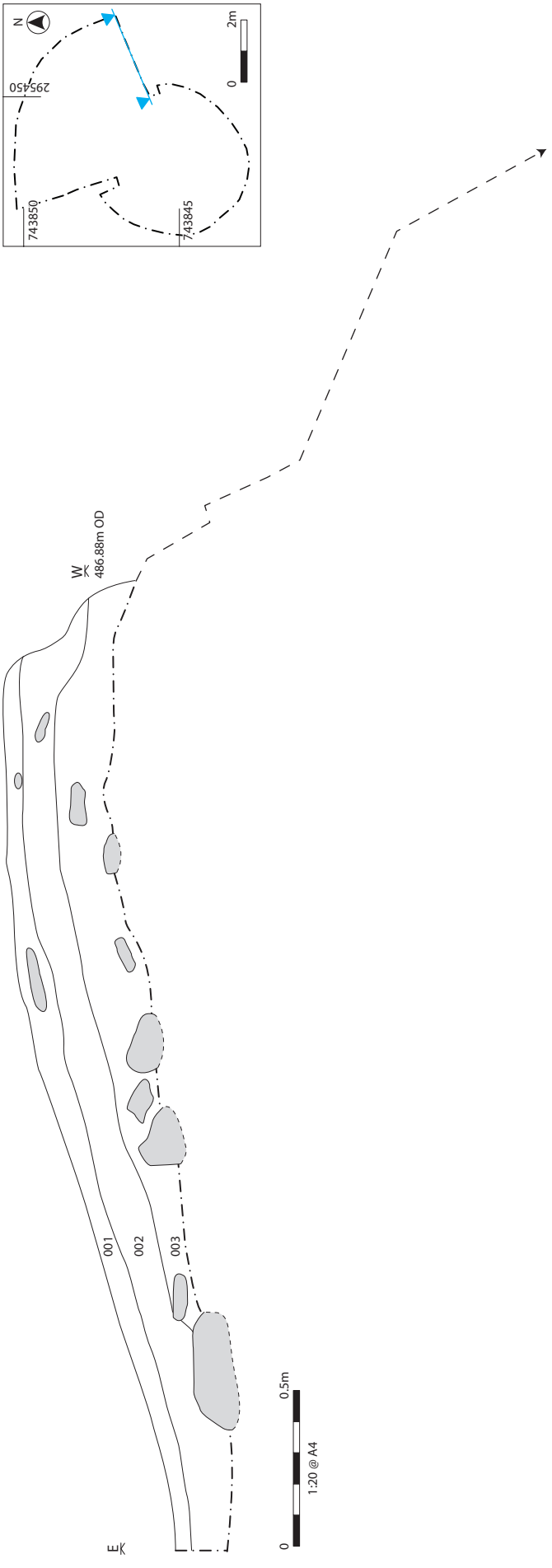
The depth of these deposits may indicate that the feature had been used over a prolonged period of time. Due to the steep sides, there would be a tendency for eroding sand and small stones from the sides to accumulate towards the base of the feature. The stratigraphy seems to suggest several periods of accumulation (*Illus 9*). The primary colluvium deposit (026) deposited at the base and along the sides of the basal post-pit [018] is likely to be debris from the original excavation of the feature. A second colluvium deposit (015) appears to partly overlie the basal occupation deposit (021). A third colluvium deposit (006) overlies all but the two upper deposits within the pit. Assuming that the colluvium deposits accumulated during periods of disuse, this may indicate three principal phases of use or occupation:

© Headland Archaeology (UK) Ltd 2012



Illus 9

SE-facing profile across the pit



Illus 10
N-facing profile across bank [003]

4.1 Phase I

This phase includes the original construction of the feature (029 and 018), the primary colluvium (026), the packing stones (019), lower fill (027=028), the post pipe (023) and the primary occupation deposit (021). This deposit was originally split into several lenses (020, 021, 024 and 025) but these have been amalgamated as it became clear that they represented minor variations within the same general deposit. Although not stratigraphically linked, one would assume that the bank (003) was made from material excavated from the pit. The bank was spread up to 2.2m wide and was up to 0.3m high and made from sand containing angular stones similar to the natural material that made up the ridge (Illus 10). The bank was confined to the lower north-east side of the pit, thus compensating for the natural slope of the ridge and creating an almost level edge around the pit (Illus 5).

4.2 Phase II

This phase is separated from the primary phase by colluvim deposit (015), overlying (021). A total of 10 deposits (007, 009-017) have been attributed to this phase making up a total depth of some 0.3m. The majority of the deposits had a high content of charcoal fragments that included pockets of pure charcoal. These deposits are likely to derive from activities within the pit. There were a few apparently randomly placed medium sized stones within deposit (009) but they did not form any recognizable feature within the pit (*Illus 9*; *Illus 11*).

4.3 Phase III

Only four deposits were attributed to this phase: 004-006 and 008. The phase was defined by the extent of the upper colluvim deposit (006) that overlay 007 but appeared to lie below 008. Deposit 008 was a concentration of charcoal in a matrix of brown silty sand. It contained the highest charcoal concentration of all the deposits within the feature (Appendix 2: Table 2). On top of this deposit was a layer of flat stones (004) covering an area of some 1.4m by 1.8m in the middle of the pit (Illus 12). The stones were from 2cm to 40cm across and appeared to form a paved area in the middle. The larger stones seemed to be located along the edge of the 'paving' although it was not possible to clearly identify any recognizable structure within the feature. The stones lay

flat on the surface, and none was set on edge. Deposit (005) was an oval area of dark brown peaty sand situated up along the west side of the pit, possibly a natural accumulation. The stones (004) were covered by a 0.1m thick layer of turf and peaty topsoil.

5. RESULTS OF PALAEOENVIRONMENTAL ASSESSMENT

Orla Power and Scott Timpany

5.1 Introduction

A total of 14 bulk samples were taken from Site 2. The aims of the assessment were to:

- assess the presence, preservation and abundance of any palaeoenvironmental materials within the samples;
- assess the potential of the material for any indications of the use of these features;
- assess whether a proxy-date for these features can be provided based on any palaeoenvironmental materials present.

5.2 Method

Samples were processed in laboratory conditions using a standard flotation method (cf. Kenward et al 1980). All plant macrofossil samples were analysed using a stereo-microscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers et al (2006).

5.3 Results

The results of the sample processing are provided in Tables 1 (Retent finds) and 2 (Flotation finds). Suitable material for AMS dating is also identified within each table. All plant remains were preserved through charring.

5.3.1 Charred Plant Remains (CPR)

Wild taxa were present in all but three samples (10, 29 and 31). Low incidences of possible water lilies (cf. *Nuphar* sp.) were identified in nine samples. Possible allseed (cf. *Radiola linoides Roth*) was present in nine samples (*Table 2*). A rare quantity of bramble (*Rubus* sp.) fruit was found in one sample (17). The preservation of the wild taxa was moderate to poor with charring having removed surface patterning in some instances and thus identifications could not be made to species level.

Wood charcoal fragments were present in all samples assessed and were recorded in abundant quantities in all samples (Table *1* and 2). The charcoal fragments ranged in size from 0.3cm to 3.0cm. The general abundance and the varying degrees in fragment size are given to suggest the *in situ* burning of material

Illus 11
Stones in deposit [009]. From NW

Illus 12
Stony deposit [004]. From NE

Illus 13
Post-pipe [023] with packing stones [019] partly exposed

© Headland Archaeology (UK) Ltd 2012

or the deliberate deposition of burnt remains. Wood charcoal fragments of suitable size and condition for identification/dating purposes have been identified in all samples (*Table 1* and *2*). Visual inspection of charcoal fragments suggests the assemblage is dominated by non-oak sp.

5.4 Discussion

Bulk samples were taken from layers throughout the excavated pit. Charcoal was the dominant CPR recovered and was present in abundant quantities within all of the samples processed (*Tables 1* and *2*). Observation by eye of the charcoal assemblage indicates it consists of non-oak taxa. Together with the charcoal, a large quantity of wild taxa, including possible allseed, possible water lilies and brambles were recovered (*Table 2*). Allseed was particularly abundant in a number of samples. Allseed is a close relative of the flax species and produces a high incidence of fruit during the autumn months (Clapham *et al* 1962).

The large numbers of possible allseed were recovered in contexts from the upper layers (006 – 021) of the pit. During the formation of these layers, the pit would have had a shallower incline and it is likely the presence of taxa such as possible allseed represents the colonisation of local vegetation during periods of abandonment. The presence of water-loving taxa such as possible water lilies and bramble also indicate that pools of water were present (Clapham et al 1962; Stace 1997). That these plant remains are charred, together with the high incidence of charcoal fragments present in these layers, suggests deliberate burning of these layers either during periods of re-use of the pit or from periods of muirburn in the local landscape. The abundance of allseed in the samples is therefore not surprising if burning activity was taking place in the autumn. Unfortunately the CPR assemblage from Site 2 provides little information on the likely dates for this burning or on the function of the pit itself.

5.5 Conclusion

- Charcoal fragments are likely to represent *in situ* burning;
- Abundant quantities of possible allseed were recovered, which suggests *in situ* burning of abandonment vegetation took place in the autumn.

5.6 Statement of potential

The presence of abundant charcoal fragments together with the abundant quantities of possible allseed provides suitable dating material. The widespread availability of materials for radiocarbon dating means there is good potential to establish a date for the activities within the pit.

6. DISCUSSION

Although it is clear that the feature was man-made, the nature and purpose of the site is less well understood, due mainly to a lack of known parallels. It was anticipated that the excavation of the site would reveal features that could provide clues to its function and date. Although the whole site was excavated by hand, the site produced no finds. All contexts that contained visible trace of charcoal were sampled. Despite retrieving large amounts of charred material, mainly non-oak charcoal, the environmental samples did not display any clear evidence for the nature of the activities within the pit. The carbonized seeds were all from wild species likely to derive from the surrounding vegetation. There was no indication of food being prepared or consumed within the pit as no burnt bone fragments were retrieved from the samples

Nonetheless, the excavation has produced some important evidence. It is clear that the structure was not built as a large shooting butt. The successive layers of charcoal-rich deposits indicate that the pit was occupied or used during several periods in the past. There was no evidence of any specialised industrial activity taking place within the pit and the evidence of *in situ* burning might point to general occupation. The limited floor space, however, would mean hat the structure could only accommodate a few individuals at a time.

The presence of a slightly off centre post with massive post packing (Illus 13) may indicate a roof-bearing post, possibly supporting a conical roof. This theory is supported by the presence of a bank producing a near level edge for support of radial rafters.

The structure might have been used over several periods allowing for a deep build up of occupation deposits. There are some indications that the use was not continuous, but took place over several separate stages. The post-pipe was not visible in the upper deposits, possibly indicating that the central post had either decayed or been removed by the time of the latest phase of occupation. It is possible that the pit at this stage was covered through some other type of roof construction involving posts located outside the perimeter of the pit as there was no evidence of any later roof structures within the excavated area.

The only structural element within the deposits was the upper stone paving (004) (Illus 12). This could be interpreted as a paved surface, but as all the occupation deposits were below the paving with no anthropogenic deposits on top, it is more likely that this is a natural accumulation of stones slipping into the base of the pit over time after abandonment.

Although the function of the pit and the nature of activity inside it remain uncertain, it will be possible to establish when the pit was created and for how long it was in use. All samples taken from the occupation deposits and the post-pipe contained sufficient charcoal for radiocarbon dates and could therefore provide a chronological framework for the structure.

The analysis of samples from the environmental auger survey could also potentially help to interpret the excavated remains, as the activity at Site 2 might have left a significant signal in the pollen record of the nearby bog.

Site 2 lies at almost 500m OD. Only a very limited number of archaeological sites at these altitudes have been excavated in the past, as most surveys and excavations have been focussed

on lower-lying areas where the density of known archaeological sites is higher and most modern developments take place. It is only in connection with the recent surge in new wind farm projects that archaeologists are finding and excavating sites at higher altitudes. It is possible that Site 2 represents a new type of feature not seen previously due to the lowland bias. Hopefully mitigation work associated with future wind farm projects may uncover other similar sites that may provide further evidence for this type of feature.

7. REFERENCES

Cappers, R T J, Bekker, R M & Jans, J E A 2006 *Digital seed atlas of the Netherlands,* Barkhuis Publishing and Groningen University Library: Groningen.

CFA 2003 *Calliachar Wind Farm: Annex A, Cultural Heritage,* CFA client report for BMT Cordah / I & H Brown.

Clapham, A R, Tutin T G & Warburg, E F 1962 *Flora of the British Isles* (2nd Edition), Cambridge University Press: Cambridge.

Dalland, M 2012 *Calliachar Wind Farm, Perth & Kinross; Report on Walkover Survey of proposed cable route, road layout and borrow pits,* Unpublished client report.

Environ 2007 *Calliachar Wind Farm; Environmental Statement,* (Volume 2, Chapter 7: Cultural Heritage, pp.85–91).

Hall M & Price, N (eds.) 2012 *ScARF medieval Panel Report,* Scottish Archaeological Research Framework.

Headland Archaeology 2011 *Calliachar Wind Farm, Perth & Kinross; Written Scheme of Investigation for a programme of archaeological works.*

Kenward, H K, Hall, A R & Jones, A K G 1980 'A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits', *Science and Archaeology* 22, *pp*3–15.

Scott, L & Tuffin, R 2012 *Excavation at Sites 3a, b, c and 14b; Calliachar Wind Farm, Perth & Kinross,* Unpublished client report.

Stace, C 1997 New Flora of the British Isles (2nd edition), Cambridge University Press: Cambridge.

© Headland Archaeology (UK) Ltd 2012

8. APPENDICES

Appendix 1 Site registers

Appendix 1.1 Context register

Context	Over	Phase	Description
01	02, 03, 04	NA	Turf and peaty topsoil, up to 0.15m thick
02	03, 22	NA	Sub-soil, interface between topsoil and C-horizon, 0.02 - 0.1m thick. Dark brown silty sand with some medium sized angular to sub-angular stones.
03	22	I	Low but clear bank along the edge of the pit. Encloses ¾ of the pit except for the SW quadrant. It is 12.5m long, spread up to 2.2m wide and up to 0.3m high. It comprised fine light yellowish brown sand with some angular stones. The bank was exposed within the N quadrant of the site where it contained a line of boulders.
04	07, 08	III	Area of angular to sub-angular stones in middle of hollow, 1.4m by 1.8m. The stones are from 0.02m to 0.4m across - on average 0.1m. The deposit is up to 0.25m deep.
05	06, 15	III	Oval area of dark brown peaty fine sand, 2.2m by 1.2m, located against the W side of the pit. The deposit is 0.15m to 0.25m deep.
06	07, 15	III	Deposit of fine silty sand with many roots and frequent small angular stones, 4m by 3.5m. Extends up the lower parts of the side of the pit.
07	09	II	Dark to mid brown silty sand at the centre of the pit. Contains some discrete areas of many small angular stones and some charcoal fragments. The deposits measures 2.4m long by 1.6m wide by up to 0.14m deep.
08	06, 07, 09	III	Deposit of charcoal in a matrix of brown silty sand, 0.9m by 0.6m bu 0.05m thick. Contains pockets of pure charcoal up to 0.15m across and 0.02m thick with patches of reddish brown silty sand beneath. Possible evidence of in situ burning.
09	10	II	Oval area of mid brown silty sand, 1.8m by 1.1m, located at the middle of the pit. The deposit is up to 0.1m thick and contais some charcoal fragments and small angular stones. The deposit contains a small group of six flattish stones at the west end, measuring from 0.15m to 0.5m across.
10	12	II	Deposit of charcoal in a matrix of reddish brown silty sand, 1.4m by1.1m and up to 0.06m thick located at the middle of the pit. The deposit contains aras of small angular stones and a lense of pure charcoal 0.01 to 0.02m thick.
11	10	II	Deposit of yellowish brown fine sand with frequent small angular stones, 1.4m long by 0.6m wide and up to 0.2m thick. Appears to be material that have slumped into the middle from the southeast side of the pit.
12	13	II	Layer of relatively clean yellowish brown fine sand with frequent small angular stones separating the two charcoal horizons C(10) and C(13).
13	17	II	Deposit of charcoal in a matrix of brown silty sand, 1.2m by 0.8m and up to 0.1m thick. There is a concentration of small angular stones at the base of the deposit.
14	16	II	Small patch of charcoal located at the southeast side of the pit, 0.8m by 0.15m by 0.03m thick. Separated from C(10) by a layer of loose and vaccous collovium (C(16)).
15	14, 26	II	Brown to yellow loose fine sand with many fine to medium angular stones. Colluvium on the sides of the pit.
16	10	II	Very loose and vaccous yellow to brown fine sand with many small angular stones. Colluvium deposit between the charcoal horizons C(14) and C(10).
17	21	II	Deposit of mid brown fine sand, 1.6m by 1.1m and from 0.03m to 0.1m thick. Contains a couple of flat stones 0.18m to 0.35m across, occasional small angular stones and some pockets of charcoal,
18	22	I	Large sub-circular cut into the base of the pit, 1.7m in diameter and 0.7m deep. Steep sides and slightly undulating but generally flat base. Partly filled with packing stones C(19) around post-pipe C(23) .
19	26	I	Packing stones around post-pipe C(23). Varies in size from a large boulder up to 1.8m across to fist-size angular stones. The stones are unevenly distributed around the post-pipe. Many stones are set at an angle into cut C[18].
20=21	19, 27	I	Mixture of charcoal lenses and yellow to grey fine sand containing many angular and flat stones. Sits within the upper edges of cut C[18] and overlies a couple of packing stones (C[19])- probably part of C21 compressed into the cut of C[18].
21	19, 27	I	Deposit of fine mid to light brown sand, 1.8m by 1m, with some small angular stones and fragments of charcoal.
22	–	NA	Natural subsoil. Till comprising occasional large angular boulders and stones in a matrix of fine greenish to yellow sand. Some bands of coarser material can be seen in the edges of the original cut for the pit.
23	26, 28	I	A cylindrical deposit 0.25m in diameter and 0.4m deep of very loose dark grey sand with some angular stones and charcoal. Post-pipe in cut C[18] surrounded by packing stones C(19).
24=21	–	I	Abandoned - same as C(21)
25=21	–	I	Abandoned - lower part of C(21)
26	18	I	Brown to yellow mixed sand and angular stones. Primary colluvium deposit on the sides of the pit.

Context	Over	Phase	Description
27	28	I	Fine dark grey sand with small angular stones and charcoal fragments within cut C[18].
28	26	I	Sub-circular deposit of brown silty sand, 0.8m across and up to 0.15m deep, with up to fist size angular stones and some charcoal fragments within middle of cut C[18]. Possibly lower part of C(27)
29	22	I	Primary cut of pit - sub-circular in plan 4.1m to 4.4m across and 2m deep. The sides are irregular as larger boulders in the till were left behind partly exposed. There is a sub-circular platform 2.4m to 2.8 m across some 0.7m above the very base of the pit. Only the outer edges survive as the large post-pit C[18] is cut into its middle. The sides to the northwest are steep but there are remains of a curving path-way leading out of the pit on the southeast side. It starts at the nort-east side of the platform and exits the pit to the southwest.

Appendix 1.2 Photographic register

Shot	B/W	Facing	Digital	Description
1	1	NNE	CALL11-004-S2-01	Pre-excavation shot
2	1	W	CALL11-004-S2-02	Pre-excavation shot
3	1	S	CALL11-004-S2-03	Pre-excavation shot
4	1	E	CALL11-004-S2-04	Pre-excavation shot
5	–	NE	CALL11-004-S2-05	Northern quadrant fully de-turferd
6	–	NW	CALL11-004-S2-06	Northern quadrant, working shot
7	–	NW	CALL11-004-S2-07	Northern quadrant fully de-turferd
8	1	NE	CALL11-004-S2-08	Site 2 fully de-turfed
9	–	ENE	CALL11-004-S2-09	Site 2 fully de-turfed
10	–	NNE	CALL11-004-S2-10	Site 2 fully de-turfed
11	–	NE	CALL11-004-S2-11	Site 2 fully de-turfed (stitched)
12	1	SSW	CALL11-004-S2-12	Site 2 fully de-turfed
13	–	SW	CALL11-004-S2-13	Site 2 fully de-turfed
14	–	S	CALL11-004-S2-14	Site 2 fully de-turfed
15	–	SSW	CALL11-004-S2-15	Stones (04). Detail
16	–	SSW	CALL11-004-S2-16a-b	Centre of pit, showing stones (04) and peaty soil (05)
17	–	NE	CALL11-004-S2-17a-b	Pit seen from SW. Stones (04) in centre and bank [03] along the edge
18	–	NE	CALL11-004-S2-18a-b	Section across stones (04)
19	1	SSE	CALL11-004-S2-19	Section across peaty soil (05)
20	–	ENE	CALL11-004-S2-20a-b	Deposits (06) along the sides and (07, 08) at the base of pit (with baulks)
21	–	SW	CALL11-004-S2-21	Deposits (06) and (07,08). Working shot
22	–	E	CALL11-004-S2-22	Deposits (06) and (07,08). Working shot
23	–	SW	CALL11-004-S2-23a-b	Deposits (06) along the sides and (07,08) at the base of pit (with baulks)
24	–	ENE	CALL11-004-S2-24a-d	Deposits (06) along the sides and (07,08) at the base of pit (baulks removed)
25	–	WSW	CALL11-004-S2-25a-b	Deposits (06) along the sides and (07,08) at the base of pit (baulks removed)
26	–	SW	CALL11-004-S2-26a-b	Deposits (06) along the sides and (07,08) at the base of pit (baulks removed)
27	–	WSW	CALL11-004-S2-27	Charcoal spread (08) at centre of pit.
28	–	WSW	CALL11-004-S2-28a-b	Charcoal spread (08) at centre of pit. Detail
29	–	SSE	CALL11-004-S2-29	Section across charcoal spread (08) at centre of pit.
30	–	WSW	CALL11-004-S2-30	Stones in deposit (09) below charcoal spread (08), partly exposed
31	–	WSW	CALL11-004-S2-31	Stones in deposit (09) below charcoal spread (08), partly exposed
32	–	ENE	CALL11-004-S2-32	Stones in deposit (09) below charcoal spread (08), partly exposed
33	–	ENE	CALL11-004-S2-33	Stones in deposit (09) below charcoal spread (08)
34	–	WSW	CALL11-004-S2-34	Stones in deposit (09) below charcoal spread (08)
35		SE	CALL11-004-S2-35	Stones in deposit (09) below charcoal spread (08)
36	1	W	CALL11-004-S2-36	East facing section of bank [03], south half
37	1	W	CALL11-004-S2-37	East facing section of bank [03], south half
38	–	S	CALL11-004-S2-38a-b	Section across deposit (09) at centre of pit.

© Headland Archaeology (UK) Ltd 2012

Shot	B/W	Facing	Digital	Description
39	–	WSW	CALL11-004-S2-39	Charcoal horizon (10) at centre of pit, partly exposed.
40	1	NE	CALL11-004-S2-40	Charcoal horizon (10) at centre of pit, partly exposed.
41	1	WSW	CALL11-004-S2-41	Lump of slumped sand and gravel (11) on top of (10).
42	–	SW	CALL11-004-S2-42	Section through (11) on top of (10)
43	1	SE	CALL11-004-S2-43a-b	Sequence of thin charcoal spreads (010), (012), (013), (014)
44	–	E	CALL11-004-S2-44	Stone in deposit (17)
45	–	E	CALL11-004-S2-45a-b	Full extent of (10) after removal of (14) and (16)
46	–	E	CALL11-004-S2-46a-b	Charcoal spread (13) at centre of pit.
47	1	ENE	CALL11-004-S2-47	Deposit (17) and post-pipe (23) at centre of pit.
48	1	SE	CALL11-004-S2-48	Deposit (17) and post-pipe (23) at centre of pit.
49	1	NE	CALL11-004-S2-49	Post-pit [18] with post-pipe (23) and packing stones (19) partly exposed
50	1	NW	CALL11-004-S2-50a-b	Post-pit [18] with post-pipe (23) and packing stones (19) partly exposed
51	–	NE	CALL11-004-S2-51a-b	Post-pit [18] with post-pipe (23) and packing stones (19). Detail
52	–	NE	CALL11-004-S2-52	Detail showing post-pipe (23)
53	1	NE	CALL11-004-S2-53a-b	Post-pit [18] and packing stones (19) partly excavated
54	1	NW	CALL11-004-S2-54a-b	Post-pit [18] and packing stones (19) partly excavated
55	–	–	CALL11-004-S2-55a-b	Pole photo of site with post-pit [18] and packing stones (19) partly excavated
56	1	E	CALL11-004-S2-56	Charcoal horizon (21) next to post-pit [18]
57	1	W	CALL11-004-S2-57a-b	Charcoal horizon (21) next to post-pit [18]
58	–	SSE	CALL11-004-S2-58	E-W baulk across (15), south end
59	–	SSE	CALL11-004-S2-59	E-W baulk across (15), north end
60	–	WSW	CALL11-004-S2-60	N-S baulk across (15), north end
61	–	ENE	CALL11-004-S2-61	Intermediate baulk across (15), S side of pit.
62	–	–	CALL11-004-S2-62a-c	Pole photo of site with post-pit [18] fully exposed
63	1	W	CALL11-004-S2-63a-b	Light brown sandy depost (25)
64	1	W	CALL11-004-S2-64a-b	Fill (20) in post-pit [18], partly excavated
65	1	N	CALL11-004-S2-65	Section through (28) and (29) at base of [18], detail
66	1	N	CALL11-004-S2-66a-b	Section through (28) and (29) at base of [18]
67	–	N	CALL11-004-S2-67a-b	Section through (28) and (29) at base of [18]
68	–	N	CALL11-004-S2-68a-b	Section through (28) and (29) at base of [18], general view
69	1	ENE	CALL11-004-S2-69a-b	Cut [29] post-excavation
70	1	S	CALL11-004-S2-70a-b	Cut [29] post-excavation
71	–	–	CALL11-004-S2-71a-h	Pole photo of site post-excavation
72	–	SSW	CALL11-004-S2-72a-b	Pole photo of site post-excavation
73	–	NNE	CALL11-004-S2-73a-b	Pole photo of site post-excavation
74	1	SSE	CALL11-004-S2-74	N-facing section across bank [03]
75	1	SSE	CALL11-004-S2-75	N-facing section across bank [03], W end
76	1	SSE	CALL11-004-S2-76	N-facing section across bank [03], E end
77	1	WSW	CALL11-004-S2-77a-b	Slot through bank [03]
78	–	NW	CALL11-004-S2-78	S-facing section across bank [03]
79	–	NNW	CALL11-004-S2-79	S-facing section across bank [03], E end
80	–	NNW	CALL11-004-S2-80	S-facing section across bank [03], middle segment
81	–	NNW	CALL11-004-S2-81	S-facing section across bank [03], W end
82	1	NE		Site 2 seen from the SW
83	1	N	CALL11-004-S2-83	Sites 2,3,14-18 seen from the upper slopes of the hill to the S
84	1	NE	CALL11-004-S2-84	Sites 2, 16 and 17 seen from the upper slopes of the hill to the S

Appendix 1.3 Sample register

Sample	Context	Description
1-2	–	Samples from sites 14 and 3
3	06	Greybrown rooty deposits on the sides of the pit
4	08	Charcoal in a matrix of brown silty sand with pockets of pure charcoal
5	07	Dark to mid brown silty sand. Less charcoal than 08
6	09	Mid brown silty sand. Contains some charcoal fragments
7	10	Charcoal in a matrix of reddish brown silty sand with lense of pure charcoal
8	14	Small patch of charcoal at E side of pit
9	10	Charcoal in matrix of reddish sand - sampled where it overlies C18
10	13	Charcoal in a matrix of brown silty sand
11	17	Mid brown fine sand with some pockets of charcoal
12-15	–	Samples from site 3
16	21	Fine mid brown sand wit charcoal fragments
17	23	Post pipe in [018]. Vaccous deposit containing angular stones and charcoal
18-27	–	Samples from site 3
28	21	Fine mid brown sand wit charcoal fragments
29	25=21	Light brown sandy silt with some charcoal fragments
30	–	Sample from site 3
31	27	Area of dark grey sand containing small stones and charcoal fragments
32-43	–	Samples from sites 14 and 3

Appendix 1.4 Drawing register

Drw	Plan	Section	Description
01	y	–	Plan of cut 018 and packing stones 019, partly exposed. Scale 1:20.
02	–	y	SW-facing section across cut 018 and packing stones 019, partly exposed. Scale 1:10.
03	y	–	Plan of cut 018 and packing stones 019. Scale 1:20.
04	–	y	SW-facing section across cut 018 and packing stones 019. Scale 1:10.
05	–	y	N-facing section across bank 003. Scale 1:10.

© Headland Archaeology (UK) Ltd 2012

Appendix 2 Environmental tables

Appendix 2.1 Table 1; Retent sample results

Context	Sample	Sample Vol (l)	Charcoal		Material available for AMS Dating	Comments
			Qty	Max size (cm)		
Site 2						
006	3	10	++	1.5	Charcoal +	Charcoal is non-oak.
008	4	10	++	<1.0	–	–
007	5	10	++	1.0	Charcoal +	Charcoal is non-oak.
009	6	10	+++	0.9	–	Charcoal is non-oak.
010	7	10	++++	1.7	Charcoal +	Charcoal is non-oak.
014	8	2.5	+++	1.0	Charcoal +	Charcoal is non-oak.
010	9	5	++++	3.0	Charcoal ++	Charcoal is non-oak.
013	10	10	++++	1.4	Charcoal ++	Charcoal is non-oak.
017	11	10	+++	1.0	Charcoal +	Charcoal is non-oak.
021	16	5	+++	0.8	–	Charcoal is non-oak.
023	17	5	+++	1.0	Charcoal ++	Charcoal is non-oak.
024	28	10	+	1.1	Charcoal +	Charcoal is non-oak.
025	29	10	+	<0.5	–	Charcoal not retained.
027	31	5	++	1.3	Charcoal ++	Charcoal is non-oak.

Key: + = rare (0-5), ++ = occasional (6-15), +++ = common (15-50) and ++++ = abundant (>50)

NB charcoal over 1cm is suitable for identification and AMS dating

Appendix 2.2 Table 2; Flotation sample results

Context	Sample	Total flot Vol (ml)	Other plant remains	Charcoal		Material available for AMS	Comments
				Qty	Max size (cm)		
Site 2							
006	3	200	cf. Nuphar sp. +, cf. Radiola linoides +++, Sclerotia ++++	++++	1	Charcoal +, Radiola +++	Non-oak charcoal
008	4	800	cf. Radiola linoides +, Sclerotia ++	++++	2.9	Charcoal ++++	Non-oak charcaol
007	5	70	-	++++	1	Charcoal +	Non-oak charcaol
009	6	100	cf. Nuphar sp. + cf. Radiola linoides ++++, Sclerotia ++	++++	1.6	Charcoal ++, Radiola ++++	Non-oak charcoal
010	7	400	cf. Nuphar sp. +, cf. Radiola linoides ++++	++++	2.5	Charcoal +++, Radiola ++++	Non-oak charcoal
014	8	60	cf. Nuphar sp. +, cf. Radiola linoides ++++	++++	1.3	Charcoal +, Radiola ++++	Non-oak charcoal
010	9	150	cf. Nuphar sp. +, cf. Radiola linoides ++++	++++	2.2	Charcoal ++++, Radiola ++++	Non-oak charcoal
013	10	170	-	++++	0.9	-	Non-oak charcoal
017	11	80	cf. Nuphar sp. +, cf. Radiola linoides +++, Sclerotia ++++	++++	1.4	Charcoal +, Radiola +++	Non-oak charcoal
021	16	65	cf. Nuphar sp. +, cf. Radiola linoides +	++++	1	Charcoal +	Non-oak charcoal
023	17	70	cf. Nuphar sp. + Rubus sp. +	++++	1.4	Charcoal +	Non-oak charcoal
024	28	40	cf. Nuphar sp. +, cf. Radiola linoides +	++++	0.6	-	Non-oak charcoal
025	29	25	-	++++	1	Charcoal +	Non-oak charcoal
027	31	80	Sclerotia ++++	++++	1	Charcoal ++	Non-oak charcoal

Key: + = rare (0-5), ++ = occasional (6-15), +++ = common (15-50) and ++++ = abundant (>50)

NB charcoal over 1cm is suitable for identification and AMS dating

© Headland Archaeology (UK) Ltd 2012

Headland Archaeology (UK) Ltd
© Headland Archaeology (UK) Ltd 2012

North East

Headland Archaeology
13 Jane Street
Edinburgh EH6 5HE
0131 467 7705
office@headlandarchaeology.com

North West

Headland Archaeology
10 Payne Street
Glasgow G4 0LF
0141 354 8100
glasgowoffice@headlandarchaeology.com

South & East

Headland Archaeology
Technology Centre, Stanbridge Road
Leighton Buzzard LU7 4QH
01525 850878
leighton.buzzard@headlandarchaeology.com

Midlands & West

Headland Archaeology
Unit 1, Premier Business Park, Faraday Road
Hereford HR4 9NZ
01432 364 901
hereford@headlandarchaeology.com

www.headlandarchaeology.com