

DQNL/01



DUNTILLAND QUARRY EXTENSION, NORTH LANARKSHIRE

Archaeological Mitigation and Field Survey

commissioned by Aggregate Industries

10/00830/MIN

September 2015

DUNTILLAND QUARRY EXTENSION, NORTH LANARKSHIRE

Archaeological Mitigation and Field Survey

commissioned by Aggregate Industries

10/00830/MIN

September 2015

project info

HA JOB NO. DQNL/01
NGR NS 28433 66395
PARISH Shotts (Monklands)
LOCAL AUTHORITY North Lanarkshire
OASIS REF. headland1-222616

project team

PROJECT MANAGER Eddie Bailey
AUTHOR Stephen Cox, Laura Bailey
FIELDWORK Jürgen van Wessel, Laura Bailey,
Magnar Dalland, Stephen Cox
GRAPHICS Rafael Maya-Torcely – Illustrations
Caroline Norrman – Typesetting
APPROVED BY Eddie Bailey – Project Manager



© 2015 by Headland Archaeology (UK) Ltd

SCOTLAND

Headland Archaeology
13 Jane Street, Edinburgh EH6 5HE

0131 467 7705
scotland@headlandarchaeology.com

www.headlandarchaeology.com



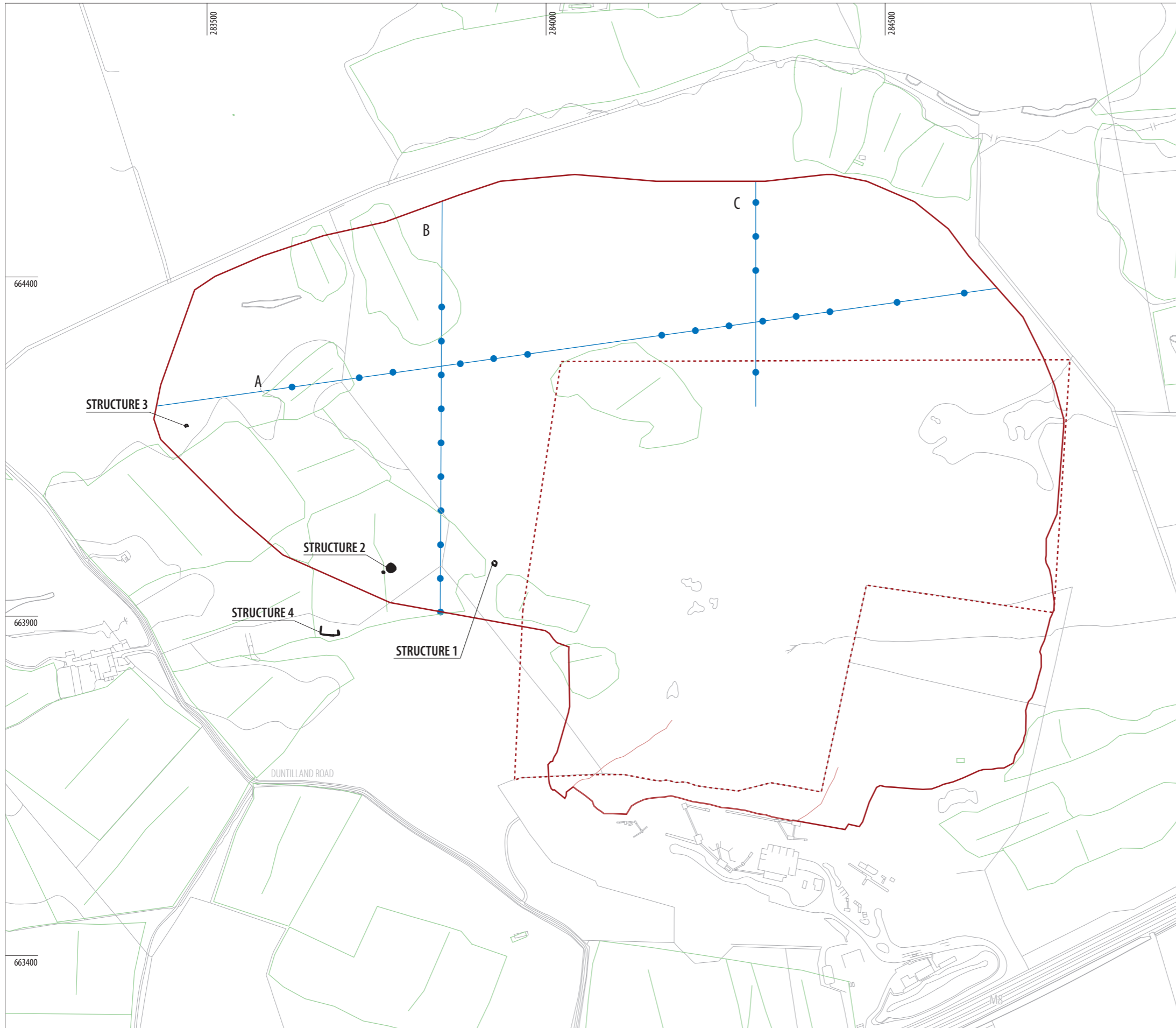


CONTENTS

1	INTRODUCTION	1
2	ARCHAEOLOGICAL BACKGROUND	1
3	METHOD	2
4	RESULTS	2
4.1	INVESTIGATION OF TURF-BUILT STRUCTURES	2
	Structure 1	2
	Structure 2	2
	Structure 3	5
	Structure 4	5
4.2	AUGER SURVEY	5
	Transect A	5
	Transect B	5
	Transect C	5
5	DISCUSSION	6
6	REFERENCES	6
6.1	CARTOGRAPHIC SOURCES	6
6.2	OTHER SOURCES	6
	APPENDIX 1 WRITTEN SCHEME OF INVESTIGATION OUTLINING THE PROGRAMME OF WORKS.	9
	APPENDIX 2 SITE REGISTERS	13
	Appendix 2.1 Context register	13
	Appendix 2.2 Photographic register	13
	Appendix 2.3 Peat depths	13
	APPENDIX 3 DISCOVERY AND EXCAVATION IN SCOTLAND	15

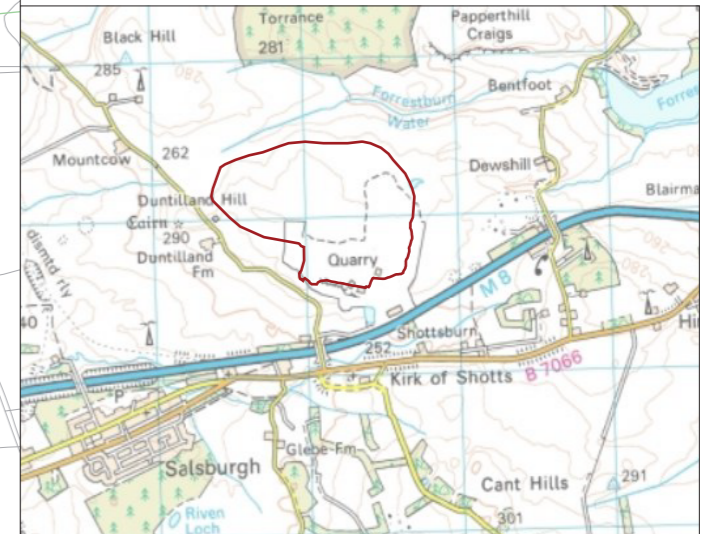
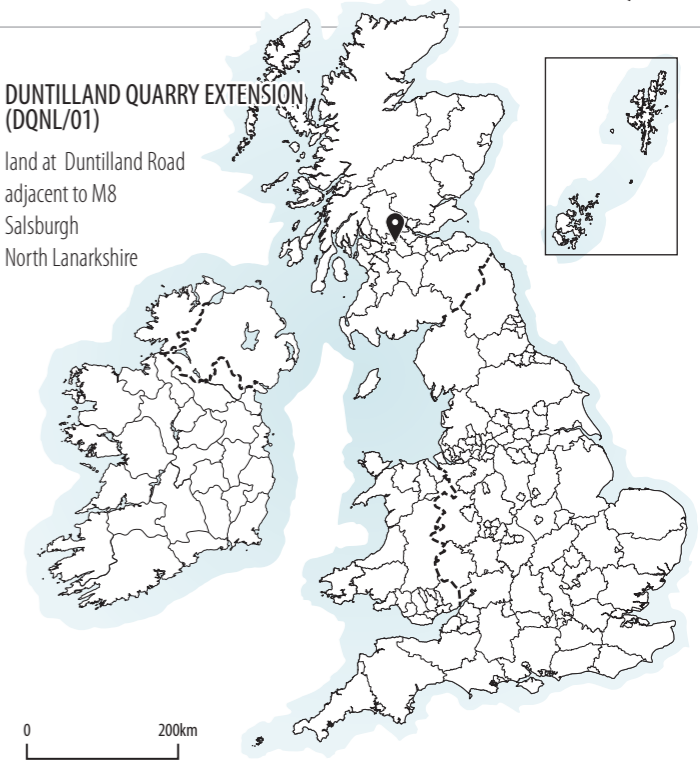
LIST OF ILLUSTRATIONS

ILLUS 1		
Site location		v
ILLUS 2		
Structures 1 – 4		vii
ILLUS 3		
Pre-ex view of Structure 1, facing NE		2
ILLUS 4		
Slot through Structure 1, facing SW		2
ILLUS 5		
Pre-ex view of Structure 2, facing SE		2
ILLUS 6		
NE facing section in Structure 2		2
ILLUS 7		
Pre-ex view of Structure 3, facing N		5
ILLUS 8		
NE facing section in Structure 3		5
ILLUS 9		
Pre-ex view of Structure 4, facing W		5
ILLUS 10		
Slot through structure 4, facing W		5
ILLUS 11		
Peat thickness contour plot created using Surfer 10 based on a combination of data from the auger survey, peat probing and bore hole records		7



DUNTILLAND QUARRY EXTENSION (DQNL/01)

land at Duntilland Road
adjacent to M8
Salsburgh
North Lanarkshire



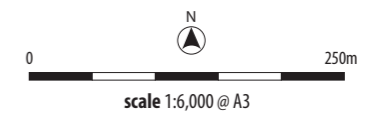
**HEADLAND
ARCHAEOLOGY**

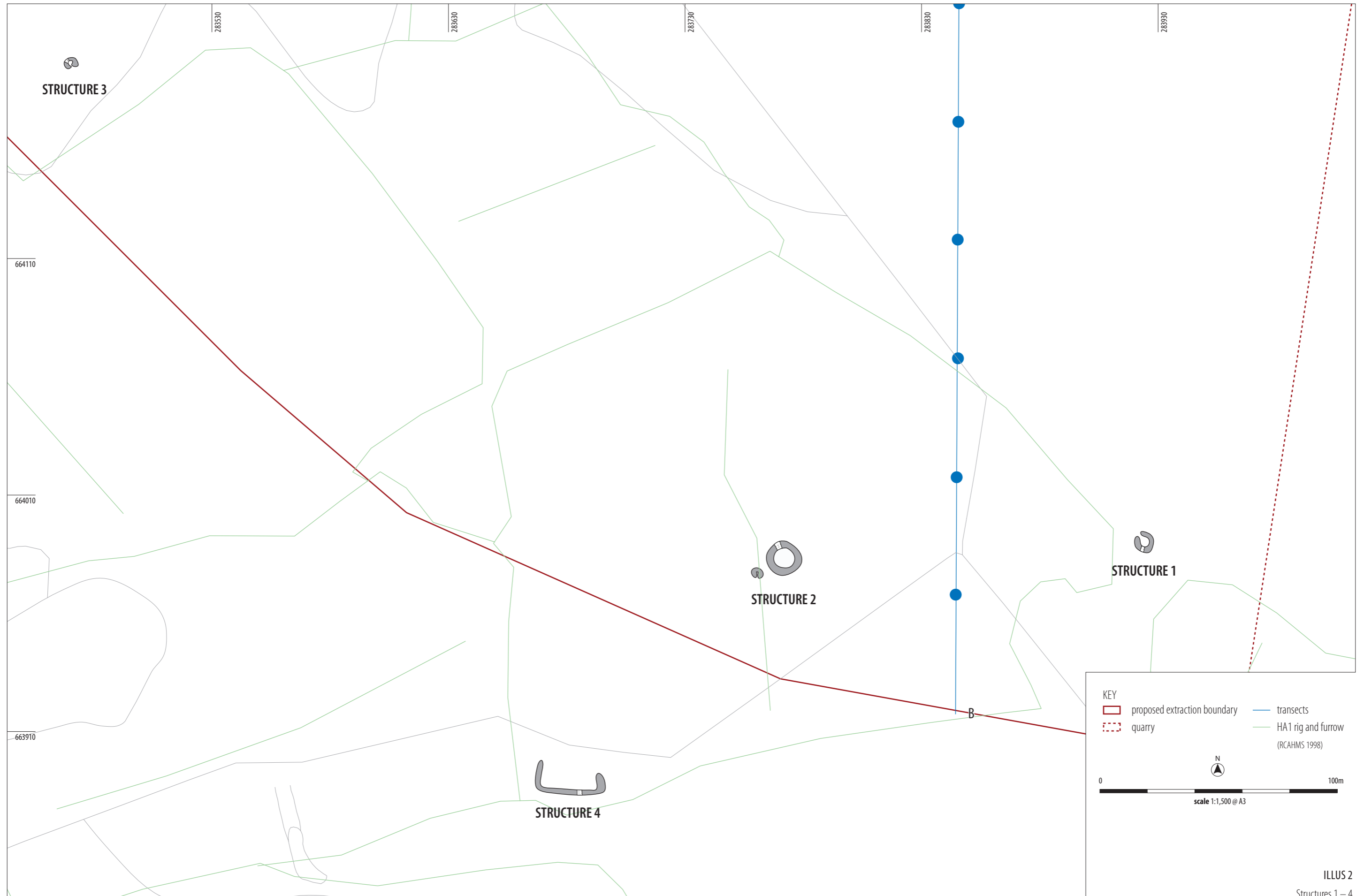
SCOTLAND

13 Jane Street
Edinburgh EH6 5HE
0131 467 7705
www.headlandarchaeology.com

KEY

- proposed extraction boundary
- - - quarry
- transects
- HA1 rig and furrow (RCAHMS 1998)





DUNTILLAND QUARRY EXTENSION, NORTH LANARKSHIRE

Archaeological Mitigation and Field Survey

Headland Archaeology (UK) Ltd was commissioned to undertake a programme of archaeological and palaeoenvironmental evaluation works prior to an extension to Duntilland Quarry, in order to fulfil a planning condition. Two areas of peat, Tod Holes and Duntilland Moss, were investigated for their palaeoenvironmental potential by means of an auger survey, and four turf structures were investigated and recorded by means of slot trenching and topographical survey. The turf structures can be said to post-date the rig and furrow, present across the site. The coring works successfully established the extents of both peat basins, and samples suitable for radiocarbon dating were taken from the deepest deposits.

1 INTRODUCTION

Headland Archaeology was commissioned to undertake a programme of archaeological and palaeoenvironmental works prior to an extension to Duntilland Quarry. The works were required in order to fulfil Planning Condition 38 attached to the planning permission (planning Ref 10/00830/MIN). The planning condition required a programme of archaeological works to be encapsulated within a Written Scheme of Investigation (Appendix 1) prior to undertaking the works.

The objectives of the programme were to clarify the archaeological and palaeoenvironmental potential of the below-ground deposits in the development area, and to contain risk and minimise potential delays to construction which could arise if features of archaeological and palaeoenvironmental significance were identified during quarrying works. The programme of works included an archaeological topographical survey and slot trenching of four turf-built enclosures, and an auger survey of the peat deposits.

The site is located at Duntilland Road, Salsburgh, North Lanarkshire (NGR: NS 28433 66395) (**Illus 1**) and comprises a 165 hectare extension to a functioning hard rock quarry. The site is between 270m and 280m OD and is underlain by Devensian Till which itself overlays Midland Valley Sill-Complex – Igneous Bedrock (British Geological Survey Website; <http://www.bgs.ac.uk>). The immediate environs of the quarry comprised agricultural fields, acid grassland and bog.

Fieldwork took place on the 28th April 2015 during hail and snow storms, and was undertaken in accordance with current Health and Safety legislation. This report presents the findings of the fieldwork with the results of the work relating to the turf-built enclosures followed by the results of the palaeoenvironmental survey.

2 ARCHAEOLOGICAL BACKGROUND

The site is situated in an elevated and poorly drained location which would have made it an unattractive area for settlement during the prehistoric and medieval periods. A handful of prehistoric sites are known in the wider vicinity and the density of prehistoric and medieval remains is quite low; no designated cultural heritage assets lie within the development area.

Evidence of coal mining, and several sites related to settlement and agriculture are noted on the pre-1st edition Ordnance Survey maps. The settlement and agriculture sites are represented by a patchwork of rig and furrow across the development area. The rig and furrow are depicted on an estate plan (Johnston 1813) and appear to have been in use at that time. Four turf-built enclosures lie within or adjacent to the rig and furrow in the west of the development area; it is likely that all are related to the rig and furrow and to post-medieval agriculture and settlement. A small quarry, now disused, is also present on the 1st edition (1864) Ordnance Survey map of the area.



The distribution of the rig and furrow is somewhat irregular and reflects the presence of two peat basins, Tod Holes, which is located along the north of the development area, and Duntilland Moss, located at the eastern side of the development area. The limits of both peat areas were previously defined on an ecological basis but no survey was made to record their extents and depths, therefore their full extent and palaeoenvironmental potential was unknown.

According to the Environmental Statement (Headland Archaeology (UK) Ltd 2009) quarrying began at Dewshill (nearby) sometime between 1921 and 1935 and a number of sites that appear on earlier maps have been completely removed. The proposed quarry extension will remove part of the area of rig and furrow, three of the turf built enclosures and the old quarry pit.

3 METHOD

The turf-built structures were investigated by means of hand excavated slots through the banks of the features to the top of the natural geology or the first significant archaeological horizon, whichever was encountered first. All faces of the trench were cleaned using appropriate hand tools and the stratigraphic sequences recorded in full. The topographic survey of each enclosure was carried out with a hand-held DGPS. All recording was carried out according to the ClFA standards and guidance.

In order to complete the palaeoenvironmental investigation, three transects, measuring 300m, 450m and 1,200m were made across the site. The transects were positioned to detect the edges of the peat basins. Two ran north to south following slope direction and the third ran east to west. The sampling points were generally at 50m intervals, and a total of twenty eight auger points were recorded. In some instances, for example in areas where rig and furrow was present and therefore unlikely to be peat, a peat probe was used in order to establish the depth of the natural sub-soil. All coring was undertaken using a Dutch/ Gouge Auger.

At each auger point the sedimentary sequence was recorded along with the presence of any visible plant microfossils. Samples were taken from the base of the deepest peat deposits in order to provide radiocarbon dates for the beginning of the peat accretion.

The locations of the points were recorded using a dGPS. The auger and survey results from the fieldwork was combined with the bore hole logs (Hughes Drilling 2008) and entered into a digital surface mapping and contouring programme (SURFER10) to produce a 2D contour map of peat thickness. Assumptions of peat depth based on the extent of rig and furrows, seen on aerial photographs, was also used in order to establish the extent of the peat basins.

4 RESULTS

4.1 INVESTIGATION OF TURF-BUILT STRUCTURES

Four turf-built structures were investigated, three within the proposed extraction boundary (which would be removed by

quarrying), and one just outwith the area (which may be subject to accidental damage by quarrying activities) (Illus 2).

Structure 1

Structure 1 is identified as HA08 in the Environmental Statement and described as a circular enclosure in the NMRS entry.

The feature comprised a low-lying curvilinear bank with a break to the north-west, located on a gently sloping north facing incline (Illus 3). A 0.5m wide slot, excavated through the south-western bank, revealed a turf layer (006) of grass, grass roots and black humic sand overlying black silty sand (007). This overlay a mottled brown and orange natural subsoil (Illus 4). Within deposit (007) lenses of slightly greyer material were observed. A number of stones randomly spread through the deposit could be observed in the east facing section but were absent from the opposite section. The quantity and dispersion of stones was not enough to classify the structure as stone built; it is more likely the slightly greyer lenses observed in the section are the remnants of the turves used to construct the bank.

Structure 2

Structure 2 is identified as HA07 in the Environmental Statement and described as a circular enclosure overlying the rig in the NMRS entry.

The feature comprised a low-lying curvi-linear bank located on the summit of an east-west oriented ridge with prominent ground to the east (Illus 5). The enclosure truncated part of the rig and furrow system indicating that the enclosure post-dates the rig.

A 0.5m wide slot was excavated through the north-west part of the bank and revealed a turf layer (005) 0.05–0.10m thick of grass, grass roots and dark humic sand (Illus 6). This layer overlay a light grey sandy clay (004) in the centre of the bank and grey silty sand to the interior (001) and exterior (012). The sand on the interior of the bank was slightly darker than the exterior (012). Beneath deposit (004) two deposits were observed; a mid / light bluish grey silty sand with orange lenses (002) and a mid-grey silty clay (003). Each deposit had a thin brown sandy layer at its uppermost interface, and their size shape and location indicate that they are turves laid to form the bank and sealed with another turf (004).

ILLUS 3

Pre-ex view of Structure 1, facing NE

ILLUS 4

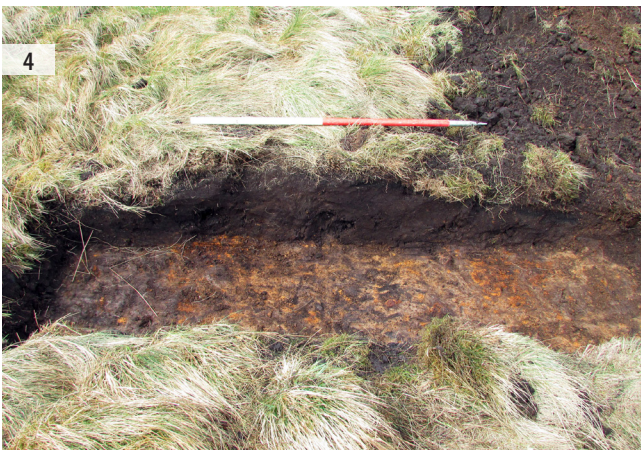
Slot through Structure 1, facing SW

ILLUS 5

Pre-ex view of Structure 2, facing SE

ILLUS 6

NE facing section in Structure 2





Structure 3

Structure 3 is identified as HA04 in the Environmental Statement and described as a roughly oval enclosure in the NMRS entry.

The feature comprised a low-lying curvilinear bank (**Illus 7**) with a break to the south-east, located on a gently sloping north facing incline and surrounded by rig and furrow. The break in the bank is interpreted as an entrance to the structure.

A 0.5m wide slot was excavated across the north-west part of the bank where it appeared most prominent; directly opposite the supposed entrance (**Illus 8**). This revealed a turf layer (008) of grass, grass roots and dark humic sand 0.13m thick overlying a mid-greyish brown sandy loam (009) 0.21m thick at its highest point. A lens of orange sand and a lens of grey sand were observed in the section underneath the highest point of the bank. This deposit (009) overlay mid orange sandy natural subsoil and bedrock.

Structure 4

Structure 4 is Identified as HA 6 in the Environmental Statement and described as a sub-rectangular enclosure in the NMRS entry. The 2nd edition 6 inch OS maps appear to show it filled with water, but earlier maps give no indication of its use.

The feature comprised four linear banks (**Illus 9**) forming a rectangular enclosure oriented east-west with the northern linear bank barely visible. It was located on a plateau at the base of a gently sloping south facing incline. A 0.5m wide slot was excavated through the southern bank as it appeared the most prominent (**Illus 10**). This revealed a turf layer (010) of grass, grass roots and dark humic sand 0.08m thick overlying a mid-brown sandy loam (011) excavated to a depth of 0.50m. This deposit overlay bedrock and mid orange coarse sandy natural subsoil. Within deposit (011) mid orangey brown lenses of sandy loam were observed located under the highest point of the bank, which are interpreted as the possible remains of turves / sods used to construct the bank. Given the sandy nature of the deposit it is unlikely the bank could have been constructed to retain water; the more likely interpretation is an animal enclosure.

4.2 AUGER SURVEY

A brief overview of stratigraphy encountered in the auger transects is provided below. The location of each transect is shown in **Illus 1** and **Illus 11** and full sedimentary descriptions for each auger point are provided in Appendix 3. Transect A comprised 14 points (AP01–AP14), Transect B comprised 10 points (AP15–AP24) and Transect C 4 points (AP25–AP28). Two main sedimentary units were present within the recorded sequence. The peat was a silty monocotyledonous peat, which was also observed to contain wood fragments in some areas (AP03, AP13, AP19, AP20 and AP28). The peat overlay a greyish-brown silty clay.

Transect A

Fourteen auger/probe points were recorded in Transect A (**Illus 11**). The peat in this area ranged in depth from 0.23m to a maximum of depth of 2.70m below the ground surface. The sequence comprised a monocotyledon peat overlying greyish-brown silty clay. The transect covered both peat basins and was therefore thickest in the west, in the centre of Tod Holes basin, shallow in the centre, between the two basins and thicker at the east end, towards the centre of the Duntilland Moss basin.

Transect B

Five probes and five auger points were recorded in Transect B. The peat ranged in depth from 0.25m to 4.43m below the ground surface. Peat was deepest in Auger Point (AP) 20. Monocotyledonous peat formed the upper part of the sedimentary sequence. Silty peat with wood fragments was observed in AP19 and AP20, the areas where peat was deepest. It is possible that the wood fragments indicate the presence of former woodland. The peat overlay greyish brown silty-clay.

Transect C

Four auger points were recorded in Transect C, which ran north to south across Duntilland Moss. The peat in this area ranged in depth from 1.20 to 1.90m below the ground surface. Dark brown monocotyledon peat overlay silty clay.

ILLUS 7

Pre-ex view of Structure 3, facing N

ILLUS 8

NE facing section in Structure 3

ILLUS 9

Pre-ex view of Structure 4, facing W

ILLUS 10

Slot through structure 4, facing W



5 DISCUSSION

The excavation of the turf structures did not reveal any data in the form of finds to provide direct dating evidence for their construction. It is likely that they post-date 1813 – the date when according to maps the rig and furrow was still in use, and they probably functioned as animal enclosures. With the exception of Structure 2 which clearly overlay the rig and furrow all the structures were built on the natural geological subsoil.

The auger survey successfully identified the extents of the peat basins at Duntilland moss and Tod Holes. The overall peat thickness has been mapped using Surfer10 to create a contour map of peat located across the Site (**Illus 11**). The map shows that peat was thickest (4.43m, AP20) at Tod Holes. Monocotyledonous peat was recorded in both basins. It is unknown exactly when the peat began to accumulate. However, radiocarbon dating of peat recovered from the deepest deposits in Transects B (AP20) and C (AP26) would provide an answer. Although no assessment work has been undertaken on the peat, its monocotyledonous nature suggest that it represents tall-herb communities, such as reeds and sedges, colonising areas where water level was shallow and stable enough for them to gain a foothold. Only a small number of cores contained wood fragments, suggesting that there were few trees in the environment.

6 REFERENCES

Headland Archaeology (UK) Ltd 2009 *Duntilland Quarry Extension Environmental Statement Cultural Heritage* Unpublished Client Report, Headland Archaeology (UK) Ltd.

Hughes Drilling 2008 *Duntilland Quarry Borehole log*.

6.1 CARTOGRAPHIC SOURCES

Johnston, T 1813 *Plan of the farms of Duntillan (Duntiland) and Shotts in the Barony of Bothwell Muir* (Held in the National Archives of Scotland RHP 10912).

OS 1864 *Ordnance Survey 1st edition 6 inch Lanarkshire, Sheet IX* (surveyed 1859).

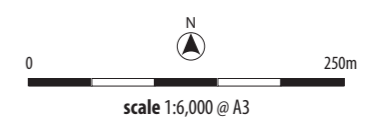
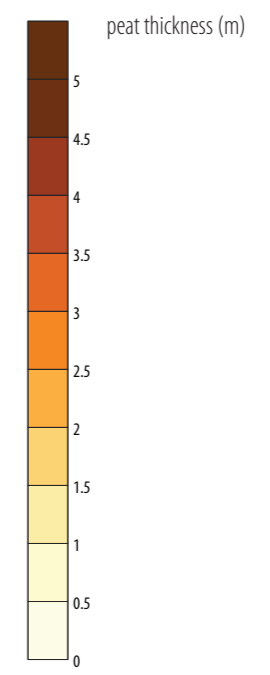
OS 1899 *Ordnance Survey 2nd edition 6 inch IX.SW* (surveyed 1896).

6.2 OTHER SOURCES

British Geological Survey <http://www.bgs.ac.uk> Accessed: 04.05.2015.



- KEY
- proposed extraction boundary
 - quarry
 - transects
 - HA1 rig and furrow (RCAHMS 1998)



ILLUS 11

Peat thickness contour plot created using Surfer 10 based on a combination of data from the auger survey, peat probing and bore hole records

APPENDICES

APPENDIX 1 WRITTEN SCHEME OF INVESTIGATION OUTLINING THE PROGRAMME OF WORKS.

INTRODUCTION

This document is submitted by Headland Archaeology (UK) Ltd as the method statement for a programme of archaeological and palaeoenvironmental works prior to an extension to Duntilland Quarry.

The Development Area (DA) is located Duntilland Road, Salsburgh, North Lanarkshire. The site extends to 165 hectares and comprises a functioning hard rock quarry which is surrounded by agricultural fields, bog and acid grassland. The centre of the extension area is located at Ordnance Survey (OS) National Grid Reference (NGR) NS 842 640. Previous landuse in the site includes quarrying and pastoral framing.

There are two areas of peat within the development area. Todholes Moss (site-HA09) is a linear area of peat which falls partly within the north-west of the site and Duntilland Moss (HA10) is a small sub-circular area of peat partly to the east of the site. Duntilland Moss extends outwith the extraction boundary and will therefore only be partially removed. Although the limits of these sites have previously been defined on an ecological basis, from the 'Sites of Importance for Nature Conservation' (SINC) data acquired from Scottish Natural Heritage in 2005, they have not been subjected to a detailed survey to define their depths and shapes, and only show the approximate location of these areas that are likely to be of palaeoenvironmental or archaeological potential.

Planning background

Planning permission has been granted for the extension to Duntilland Quarry subject to a number of planning conditions (Planning Ref. 10/00830/MIN). The proposal is for the continued working and Northern Extension (165ha) to the Quarry Including Revised Restoration Proposals and Environmental Improvements.

Condition 38 relates to archaeological issues:

(38) That prior to the commencement of quarrying in phases 5–7 as shown on plan reference 3.3b – 3.3g, a programme of works are to be submitted and approved in writing by the Planning Authority to address the following aspects of the Archaeological Mitigation Plan:

- a)** programme of archaeological and palaeoenvironmental work in accordance with the outline method statement as detailed in Appendix 16.3 of the Environmental Statement shall be implemented;
- b)** survey and investigation of four turf-built enclosures (Sites HA04, HA06, HA07 and HA08), to be guided by the results of (a);

The results of the archaeological field survey shall be submitted to the Planning Authority for review in the form of a Field Survey Report.

Reason: In order to protect and record any archaeological remains.

Archaeological background

The Cultural heritage chapter of the Environmental Statement (Headland Archaeology (UK) Ltd 2009) indicates that quarrying at Dewshill began at sometime between 1921 and 1935. A number of sites appear on earlier maps within the area of previous quarrying and have now been completely removed. A large area in the centre of the proposed development has now been quarried and sterilised of all cultural heritage features. The remaining land is typical pre-improvement unenclosed farmland with settlement sites and areas of rig and furrow cultivation. Parts of the site were unsuitable for agricultural exploitation, therefore the rig is spread across the application area in a patchy fashion.

No designated cultural heritage assets lie within the inner study area. However, there are several pre-1st edition Ordnance Survey sites relating to settlement and agriculture as well as one pre-1st edition site related to coal mining. The sites relating to settlement and agriculture occur within a patchwork of preserved areas of rig-and-furrow, all of which has been treated separately from them as a single site (HA01) except where it clearly relates to a known farmstead. The rig was first mapped on an estate plan of 1813 and appears to have been in use at the time. Four turf-built enclosures (HA04, 06, 07 and 08) lie within or adjacent to the rig-and-furrow (HA 1) in the west of the development area. At least one of these appears to post-date the rig and it seems likely that are all related to the rig-and-furrow and to post-medieval agriculture and settlement. The remains of a small-scale quarry (HA05) lie within the application boundary and take the form of an irregular spoil heap with a dip in the centre. This feature appears on the 1st edition (1864) of the Ordnance survey and does not appear to have been in use since.

The site is situated in an elevated and presently poorly drained location, which would not have been an attractive site for settlement throughout the prehistoric and medieval periods. An extensive programme of archaeological survey has been undertaken and the potential for previously unrecorded cultural heritage assets is well understood. The density of prehistoric and medieval remains in this area is quite low with only a handful of known prehistoric sites in the wider vicinity.

There are two areas of peat, which have potential for the preservation of palaeoenvironmental data and archaeological remains, within the application boundary. Although the limits of these sites have previously been defined on an ecological basis, they have not been subjected to a detailed survey to define their extents and depths. Todholes Moss (HA09) is an area of peat whose currently mapped extent lies along the north side of the application area (and immediately adjacent) in places to the proposed extraction boundary), Duntilland Moss (HA10) is a small sub-circular area of peat on the east side of the application area and partly within the extraction boundary. The extent of these areas is derived from 'Sites



of Importance for Nature Conservation' (SINC) data acquired from Scottish Natural Heritage in 2005.

The proposed quarry extension will remove part of an area of rig (HA01), three turf-built enclosures within it (HA04, HA07 and HA08) and an old quarry pit (HA05). The turf-built enclosures are considered to be of local importance and therefore of low sensitivity to direct construction impacts. The old quarry is considered to be of negligible sensitivity to direct construction impacts. The rig and furrow (HA01) and Duntilland Moss (HA10) extend outwith the extraction boundary and will therefore only be partially removed. There is also the potential for adverse impacts upon previously unrecorded cultural heritage assets and on peat, both in terms of sub and intra-peat archaeological remains and on the palaeoenvironmental potential of the peat deposits themselves.

The extent and depth of peat deposits which may survive within the DA are unknown and therefore their palaeoenvironmental potential is unknown.

Scope of the Written Scheme of Investigation (WSI)

The purpose of this WSI is to define a programme of works that will mitigate the impact of the Duntilland Quarry extension on the palaeoenvironmental resource of the DA. This work will meet, in full, the terms of the archaeological conditions (above) to the satisfaction of the planning Authority.

It is proposed that the programme of archaeological works be undertaken in two stages:

Stage 1 will focus on an assessment of the archaeological as well as the palaeoenvironmental potential. This will comprise;

- Auger transect survey across the area to detect the edge of the suspected peat basin.

Stage 2 will focus on the evaluation of the four turf-built structures identified by the Environmental Statement and will be informed by the results of the palaeoenvironmental survey.

The results of the auger survey and evaluation will inform any further archaeological works required in order to further investigate the archaeological potential of the DA and/or mitigate the potential impact on recorded or unrecorded archaeology

PROJECT DESIGN

Objectives and Strategy

The archaeological objective of the assessment is to clarify the archaeological and palaeoenvironmental potential of the below-ground deposits

A peat survey is proposed in order to characterise the peat deposits within the development area and to address the issues raised by North Lanarkshire Council's archaeological advisor. The objectives of the survey are to:

- determine peat depths across the area;

- briefly characterise peat types across the area;
- locate the edge of a suspected peat basin at the north-west side of the site ('Todholes':Site HA09);
- detect the presence of buried mineral soil beneath the peat deposits.

The commercial objective is to contain risk and minimise potential delays to construction, such as would arise if features of archaeological or palaeoenvironmental significance were identified during quarrying works.

A two-stage plan of investigation is envisaged:

Stage 1 Field investigations will be undertaken in order to determine the depth, extent and nature of peat deposits across the Development Area. These waterlogged sediments have the potential to contain materials of palaeoenvironmental interest, such as pollen, seeds, insects and wood remains.

Stage 2 Four turf built structures affected by the development will be subject to topographic survey and slot trenching with one evaluation trench excavated across one side of each of the four structures. The trenches will be designed to get a suitable cross section of each structure and to evaluate the underlying deposits.

Method

Auger Survey

Three transects will be made across the area, two running north to south, following slope direction; the third will run approximately east to west, this being the transect for detecting the edge of the suspected peat basin.

The survey will be undertaken using a gouge ('Dutch') auger, with sampling points at approximately 50m intervals, with closer sampling intervals used if necessary to determine the position of the edge of the peat basin. It is envisaged that approximately 25 sampling points will be sufficient. Sampling locations will be surveyed in the field using dGPS.

In determining peat depth there will be the potential to gauge possible masking of archaeology by peat. At each auger point (AP) the type and depth of sediments encountered will be recorded together with the presence of any visible plant macrofossils such as bryophytes, seeds and wood fragments. Visual evaluation of the areas surveyed will allow further evaluation of the archaeology and the condition of the peat in terms of erosion and possible cutting impacts.

Investigation of turf built structures

Trenches will be hand excavated through structures to the top of the natural geology, or the first significant archaeological horizon, whichever is encountered first. Spoil will be stored beside the trench.

On completion of hand excavation, all faces of the trench that require examination or recording will be cleaned using appropriate hand tools where required. The stratigraphic sequence will be recorded in full in each of the trenches, even where no archaeological deposits

have been identified.

Due to Health and Safety considerations, hand excavations will not continue below 1m of the existing ground level.

Sampling Strategy

Radiocarbon dating samples will be taken from the base of the deepest peat deposits in selected areas in order to provide dates for the beginning of peat accretion in these areas. The basal peat dates will inform on the potential for any archaeological features to be present below the peats.

Recording

All recording will be according to ClfA standards and guidance. All contexts, small finds and environmental samples will be given unique numbers and all recording will be undertaken on pro forma record cards. Digital photographs will be taken and recorded in a photographic register. Record shots of archaeological contexts will have a metric scale visible.

An overall site plan will be recorded digitally and related to the National Grid. Where appropriate, sections and stratigraphic sequences will be recorded digitally. Digital recording will be undertaken using a differential GPS or an EDM linked to a hand-held computer in order to allow data checking whilst in the field. If additional detailed recording of features and sections is required (ie where their complexity means that archaeological information could be lost if recorded digitally) then plans and sections will be hand-drawn on permatrace at an appropriate scale (normally 1:20 or 1:50 for plans and 1:10 for sections).

Headland maintains a digitally-based library of guidance documents that includes information on field evaluation and recording. Relevant parts can be forwarded on request.

Reporting and Archive

All aspects of reporting and archive will be undertaken in accordance with guidelines published by the ClfA on behalf of the Archaeological Archives Forum (July 2007).

Copies of the report will be sent to the client for onward transmission to the local planning authority. All reports will be submitted within 20 working days of the completion of fieldwork.

The complete project archive will be deposited with the National Monuments

Record of Scotland (NMRS) within six months of the completion of the project. The records (paper and digital) will be archived according to best practice guidelines set out by the Archaeological Archiving Forum.

Any artefacts from the site will be declared for Treasure Trove procedures within 6 months of the completion of fieldwork. A copy of the site archive will be kept with the finds.

If further stages of excavation or other investigation are required elsewhere within the Development Area, the archives will be combined under the same project code and with continuous

numbering of records. The combined archive will be deposited following completion of the process.

PROJECT TEAM

The project will be managed for Headland Archaeology by Edward Bailey. The field team will comprise a Senior Archaeologist (Magnar Dalland) and an environmental archaeologist (Laura Bailey). Magnar Dalland will be responsible for the day-to-day execution of the project. Curricula Vitae of key personnel can be supplied on request. The Project Team will familiarise themselves with the background to the site and will be aware of the project's aims and methodologies.

Specialist artefact analyses will be managed by Headland's Finds Manager, Julie Franklin. Julie will undertake finds assessment within her areas of competence (medieval and post-medieval ceramics, metalwork, glassware, clay pipes, ceramic building material and other small finds) and assisted by Julie Lochrie (lithics, prehistoric pottery). Further consultation will be sub-contracted to recognised period specialists if appropriate.

Environmental analysis will be managed by Dr Tim Holden. Headland has in-house specialists who can undertake analysis of pollen, plant macrofossils, insect remains and thin sections, Faunal and human remains will be assessed by appropriate specialists.

Headland Archaeology (UK) Ltd is a Registered Organisation and abides by the Codes of Conduct and Approved Practice and Standards of the Institute for Archaeologists. The company has all the necessary technical and personnel resources for the satisfactory completion of the evaluation.

INSURANCE

Headland Archaeology (UK) Ltd is fully indemnified and all necessary insurances can be presented on request.

HEALTH & SAFETY

All of Headland's work is undertaken in accordance with current H&S legislation. Risk assessments and a method statement will be prepared prior to the commencement of fieldwork. All staff will wear appropriate PPE. Welfare facilities will be located at a suitable location.

HUMAN REMAINS

Any human remains encountered during the course of the evaluation will be left in situ. All finds of human remains will be reported to the client's representative, Shetland Amenity Trust archaeological advisors and the local police. An on-site meeting will be arranged with the client, Shetland Amenity Trust and Headland to decide on an appropriate method for dealing with the remains.

If human remains are to be excavated during subsequent work, all works will be agreed with the client and undertaken in accordance with Historic Scotland policy on the treatment of human remains and in cognisance of ClfA Technical Paper Number 13 (Brickley & McKinley 2004).



REFERENCES

CIfA 2007 *Archaeological Archives Forum Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (published by the CIfA 2007).

Brickley, M & McKinley, J 2004 *Guidelines to the standards for recording human remains* (IfA Paper No. 7) Available: <http://www.babao.org.uk/HumanremainsFINAL.pdf>.

CIfA 2014 *Standard and guidance for an archaeological watching brief* Available: http://www.archaeologists.net/sites/default/files/CIfAS&GWatchingbrief_2.pdf.

SPP: Scottish Planning Policy Available: <http://www.scotland.gov.uk/Publications/2010/02/03132605/0> Accessed: February 2010

Watkinson, D & Neal, V 1998 *First aid for finds*.

APPENDIX 2 SITE REGISTERS

Appendix 2.1 Context register

Context	Structure	Description
001	2	Mid / dark bluish grey silty sand
002	2	Mid / light bluish grey silty sand
003	2	Mid grey silty clay
004	2	Light grey clay
005	2	Black humic turf layer
006	1	Black humic turf layer
007	1	Black silty sand
008	3	Dark humic sandy turf layer
009	3	Mid greyish brown sandy loam
010	4	Black humic turf layer
011	4	Mid brown sandy loam with orange lenses
012	2	Mid bluish / brownish grey silty sand

Appendix 2.2 Photographic register

Photo	Direction	Description
001	NE	General pre-ex view of Structure 2
002	SE	General pre-ex view of Structure 2
003	SW	View of north-west facing section of Structure 2 (mid-ex)
004	NW	South-east facing section (mid-ex)
005	SE	View of north-west facing section of Structure 2 (mid-ex)
006	NE	General pre-ex view of Structure 1
007	SE	General pre-ex view of Structure 1
008	SW	View of north-east facing section in Structure 2
009	SW	Close-up view of north-east facing section in Structure 2
010	–	Photogrammetry of Structure 2
011	–	Photogrammetry of Structure 2
012	–	Photogrammetry of Structure 2
013	–	Photogrammetry of Structure 2
014	SW	Slot through Structure 1
015	NE	Slot through Structure 1
016	S	General pre-ex shot of Structure 3
017	N	General pre-ex shot of Structure 3
018	SW	NE facing section of Structure 3
019	–	General shot of slot in Structure 3

Photo	Direction	Description
020	E	General pre-ex view of Structure 4
021	W	General pre-ex view of Structure 4
022	W	View of section through Structure 4
023	W	Close up of turves (?) in slot through Structure 4
024	S	General view of slot through Structure 4

Appendix 2.3 Peat depths

Transect	AP	Chainage (m)	Method	D (cm)	C14	Peat stratigraphy
A	AP01	200	Probe	30	N	Natural at 0.30m
A	AP02	300	Auger	127	N	Dark brown monocotyledon peat – 1m thick. Overlying grey silty clay.
A	AP03	350	Auger	366	N	Dark brown monocotyledon peat – 3.63m thick with occasional wood fragments. Overlying grey silty clay.
A	AP04	450	Auger	161	N	Dark brown monocotyledon peat – 1.52m thick. Overlying grey silty clay.
A	AP05	500	Auger	65	N	Dark brown monocotyledon peat – 0.63m thick. Overlying grey silty clay.
A	AP06	550	Auger	25	N	Dark brown monocotyledon peat – 0.23m thick. Overlying grey silty clay.
A	AP07	750	Auger	74	N	Dark brown monocotyledon peat – 0.59m thick. Overlying grey silty clay.
A	AP08	800	Auger	240	N	Dark brown monocotyledon peat – 1.90m thick. Overlying grey silty clay.
A	AP09	850	Auger	235	N	Dark brown monocotyledon peat – 1.75m thick. Overlying grey silty clay.
A	AP10	900	Auger	175	N	Dark brown monocotyledon peat – 1.60m thick. Overlying grey silty clay.
A	AP11	950	Auger	260	N	Dark brown monocotyledon peat – 1.95m thick. Overlying grey silty clay.
A	AP12	1000	Auger	340	N	Dark brown monocotyledon peat – 2.70m thick. Overlying grey silty clay.
A	AP13	1100	Auger	275	N	Dark brown monocotyledon peat with occasional wood fragments – 2.20m thick. Overlying grey silty clay.
A	AP14	1200	Auger	156	N	Dark brown monocotyledon peat – 1.35m thick. Overlying grey silty clay.
B	AP15	0	Probe	25	N	Natural at 0.25m
B	AP16	50	Probe	25	N	Natural at 0.25m
B	AP17	100	Probe	85	N	Natural at 0.85m
B	AP18	150	Probe	90	N	Natural at 0.90m



Transect	AP	Chainage (m)	Method	D (cm)	C14	Peat stratigraphy
B	AP19	200	Auger	192	N	Dark brown monocotyledon peat – 1.39m overlying dark brown peat containing occasional wood fragments 1.39 to 1.71m. Overlies natural grey silty clay.
B	AP20	250	Auger	454	Y	Dark brown monocotyledon peat – 2.50m. 2.50 – 2.70m several sphagnum moss fragments present. 2.71 – 4.43m dark brown peat with wood fragments and plant material. Overlies natural grey silty clay.
B	AP21	300	Auger	412	N	Dark brown monocotyledon peat 3.90m thick, overlying grey silty clay
B	AP22	350	Auger	298	N	Dark brown monocotyledon peat 2.40m thick, overlying grey silty clay
B	AP23	400	Auger	105	N	Dark brown monocotyledon peat 0.40m thick, overlying grey silty clay
B	AP24	450	Probe	40	N	Natural at 0.40m
C	AP25	50	Auger	132	N	Dark brown monocotyledon peat 1.20m thick, overlying grey silty clay
C	AP26	200	Auger	255	Y	Dark brown monocotyledon peat 1.92m thick, overlying grey silty clay
C	AP27	250	Auger	236	N	Dark brown monocotyledon peat 1.86m thick, overlying grey silty clay
C	AP28	300	Auger	153	N	Dark brown monocotyledon peat 1.15m thick, containing occasional wood fragments, overlying grey silty clay

APPENDIX 3 DISCOVERY AND EXCAVATION IN SCOTLAND

LOCAL AUTHORITY:	North Lanarkshire
PROJECT TITLE/SITE NAME:	Duntilland Quarry Extension, Archaeological Mitigation and Field Survey Report
PROJECT CODE:	DQNL12
PARISH:	Shotts
NAME OF CONTRIBUTOR:	Laura Bailey, Stephen Cox
NAME OF ORGANISATION:	Headland Archaeology
TYPE(S) OF PROJECT:	Evaluation
NMRS NO(S):	n/a
SITE/MONUMENT TYPE(S):	n/a
SIGNIFICANT FINDS:	n/a
NGR (2 letters, 8 or 10 figures)	NS 28433 66395
START DATE (this season)	28th April 2015
END DATE (this season)	28th April 2015
PREVIOUS WORK (incl. DES ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	Headland Archaeology as commissioned to undertake a programme of archaeological and paleoenvironmental evaluation works prior to an extension to Duntilland Quarry, in order to fulfil a planning condition. Two areas of peat, Tod Holes and Duntilland Moss, were investigated for their paleoenvironmental potential by means of an augur survey, and four turf structures were investigated and recorded by means of slot trenching and topographical survey. No direct dating evidence was recovered from the turf structures but they can be said to post-date the rig and furrow which was present across the site. The coring works successfully established the extents of both peat basins, and samples suitable for radiocarbon dating were taken from the deepest deposits. Although no assessment work has been taken on the peat, initial indications are that it represents tall-herb communities such as reed and sedge colonising shallow water levels.
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	None
SPONSOR OR FUNDING BODY:	Aggregate Industries
ADDRESS OF MAIN CONTRIBUTOR:	13 Jane Street, Edinburgh. EH6 5HE
EMAIL ADDRESS:	steve.cox@headlandarchaeology.com
ARCHIVE LOCATION (intended/deposited)	RCAHMS



© 2015 by Headland Archaeology (UK) Ltd

SOUTH & EAST

Headland Archaeology
Building 68C, Wrest Park, Silsoe
Bedfordshire MK45 4HS

T 01525 861 578

E southandeast@headlandarchaeology.com

MIDLANDS & WEST

Headland Archaeology
Unit 1, Premier Business Park, Faraday Road
Hereford HR4 9NZ

T 01432 364 901

E midlandsandwest@headlandarchaeology.com

NORTH

Headland Archaeology
Unit 16, Hillside, Beeston Road
Leeds LS11 8ND

T 0113 387 6430

E north@headlandarchaeology.com

SCOTLAND

Headland Archaeology
13 Jane Street
Edinburgh EH6 5HE

T 0131 467 7705

E scotland@headlandarchaeology.com

www.headlandarchaeology.com