Wessex Archaeology

Wemyss Caves, Fife, Scotland

Archaeological Evaluation and Assessment of Results

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WEMYSS CAVES, FIFE, SCOTLAND

Archaeological Evaluation and Assessment of Results

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Contents

Tables

Figures and plates

WEMYSS CAVES, FIFE, SCOTLAND

Archaeological Evaluation and Assessment of Results

Summary

Wessex Archaeology were commissioned by Videotext Communications Ltd to undertake a programme of archaeological recording and post-excavation work on an archaeological evaluation undertaken by Channel 4's 'Time Team' at Wemyss Caves, East Wemyss, Fife. This report presents an assessment of the results of these works, along with recommendations for further analysis and dissemination.

The Wemyss Caves are well known for their Pictish carvings – the largest single collection of Pictish carvings known – which occur in five of the nine recorded caves. Five trenches were excavated within the interior of three of these caves (Jonathan's Cave, the Well Cave and Sliding Cave), with a further two trenches sited outside the entrance of Well Cave. Furthermore, a section of the eroding coastline was cut back and cleaned up and recorded.

The main aim of this project was to gain a better understanding of the precise nature and range of the archaeological deposits both within the caves and outside them. It also aimed to establish when the caves were in use, how long they remained in use for and the nature of activities undertaken within them. There were also a number of specific aims and objectives relating to the trenches excavated within specific caves.

This archaeological evaluation undertaken by Time Team has revealed significant new evidence for prehistoric, Middle Iron Age and Pictish activity on the Site.

The prehistoric evidence takes the form of a possible cup mark from Trench 1, ard-marks from Trench 7 and a large stone revealed within the eroding coastal section (trench 9) and which may once have been a free-standing upright and therefore interpretable as perhaps forming part of a ritual monument of some sort. All of these may date to the Late Neolithic or Bronze Age. Of particular importance are the ard-marks, which while being not particularly rare in Scottish prehistory, nonetheless offer intriguing evidence of possible early landuse in Fife. It is recommended that the opportunity be taken to radiocarbon date material from the fills of these ard-marks.

The excavations also recovered evidence for Middle Iron Age and Pictish activity within the caves. The former took the form of a layer sealing a stone pavement in Trench 8. Material recovered from this deposit included charred grains of barley, which were radiocarbon dated to between AD240 and AD400. This trench also revealed the presence of a new Pictish carving, in the form of a pair of sinuous lines (possibly serpents). There was no evidence from this trench for a corresponding Pictish occupation layer.

Some limited evidence for medieval activity in the caves was confined to the trenches in the Well Cave. In both trenches, small quantities of medieval pottery were recovered, although none was directly associated with the 'well' itself. A limited

investigation within this cave could find no positive evidence for the putative passageway linking this cave and the medieval remains of McDuff castle.

The post-medieval features and deposits excavated included the fills of the 'well' in the Well cave and layers of post-medieval metalworking from within Jonathan's Cave.

The project was also able to determine that in many cases these caves have been subject to systematic clean-outs (hence resulting in disturbed and truncated stratigraphy) certainly after Pictish times. In some instances, the sea itself may have scoured the inside of the caves, during particularly high tides and/or floods.

This work also suggests that is only in the less easily accessible caves (e.g. as in Sliding Cave) that it maybe possible to identify evidence of well preserved and undisturbed sequences of cave deposits, perhaps even dating back to prehistoric periods.

In view of the significance of these results, it is recommended that a programme of further analysis be undertaken with a view to publication of the results of the evaluation in an appropriate journal (to be decided in consultation with Historic Scotland).

WEMYSS CAVES, FIFE, SCOTLAND

Archaeological Evaluation and Assessment of Results

Acknowledgements

This programme of post-excavation and assessment work was commissioned and funded by Videotext Communications, and Wessex Archaeology would like to thank the staff at Videotext, and in particular Zarina Dick and Melinda Smith (Executive Producers) and Karen Kirk (Researcher) for their considerable help during the recording and post-excavation work.

The evaluation strategy was developed by Professor Mick Aston (Bristol University), and all fieldwork undertaken by Time Team's retained excavators with help from members of Rathmell Archaeology Ltd. The on-site recording was undertaken by Catriona Gibson, assisted by Steve Thompson, both of Wessex Archaeology. The finds were processed on-site by Steve Thompson.

The geophysical survey was conducted by John Gater with staff from GSB Prospection. The field survey was undertaken by Dr Henry Chapman, University of Hull and Al Carty, of Archaeoptix.

Wessex Archaeology co-ordinated he post excavation programme. This report was compiled by Dr Catriona Gibson, with minor editing undertaken by Nicholas Cooke. Specialist work and reporting was undertaken by Lorraine Mepham (finds), Dr Stephanie Knight (animal bone), Hayley Clark and Sarah F Wyles (environmental processing), Dr Chris Stevens (plant remains) and Dr Michael J Allen (charcoal, snails and radiocarbon dating). The illustrations were prepared by Kitty Brandon. The project was managed on behalf of Wessex Archaeology by Nicholas Cooke.

The progress of the work in the field also benefited from advice and discussion with specialists within the archaeology of East Wemyss, including Dr Erika Guttman (Soil Specialist, Reading University), Dr Anna Ritchie, Donald Spiers (County Archaeologist for Fife) and Rod McCullagh (of Historic Scotland).

WEMYSS CAVES, FIFE, SCOTLAND

Archaeological Evaluation and Assessment of Results

1 INTRODUCTION

1.1 Site Background

1.1.1 Wessex Archaeology were commissioned by Videotext Communications Ltd to undertake a programme of archaeological recording and post-excavation work on an archaeological evaluation undertaken by Channel 4's 'Time Team' at Wemyss Caves, East Wemyss, Fife, centred on NGR 334500 697200 (**Figure 1**).

1.1.2 This report documents the results of archaeological survey and evaluation undertaken by Time Team, and presents an assessment of the results of these works, along with recommendations for further analysis and dissemination.

1.1.3 The Wemyss Caves are well known for their Pictish carvings – the largest single collection of Pictish carvings known from a cave site – which occur in five of the nine recorded caves. Three of these cave sites were investigated and trenches outside two of the caves also opened, approximately centred on NGR NT 354 969 (see **Figure 1**). The caves investigated during the course of this evaluation and recording exercise were:

- Jonathan's Cave
- Well Cave
- Sliding Cave

1.1.4 The opportunity to investigate areas outside these caves was also taken, and two small trenches were opened beyond the entrance of Well Cave. Furthermore, a section of the eroding coastline was cut back and cleaned up and recorded.

1.2 Geology and Topography

1.2.1 Wemyss Caves are situated on the northern shore of the Firth of Forth, adjacent to the small coal-mining village of East Wemyss. The solid geology of the area comprises soft red sandstone, which form part of the cyclic sedimentary rocks of the Carboniferous system (British Geological Survey 1985).

1.2.2 The Wemyss Caves are cut into a sandstone cliff, some 2km in length, which forms the northern shore of the Firth of Forth. These caves appear to have been created by sea action some 8,000 – 5,000 years ago, and subsequent sea level change along with some raising of the land has left these caves above a raised beach. Studies of the local geology of the area have established that the post-glacial period saw fluctuating relative levels of land and sea, with intervals of stability, which have resulted in the creation of a series of raised

and buried beaches evident in the local clay and gravel deposits (Morrison, 1969). Some twelve caves have been recorded in total, although not all are extant today. The caves are currently under threat from modern coastal erosion, which is eroding the shoreline in front of them.

1.2.3 The caves lie to the south-east of the village of East Wemyss, and are approached by two sloping paths. Not all are accessible to the public, either because of their poor stability (a number of the cave ceilings are artificially supported, whilst others have seen roof falls in recent times) or to prevent further vandalism or damage to the carvings.

1.3 Historical background

1.3.1 The village of East Wemyss is situated about a mile south-west of Buckhaven. Wemyss Caves are of particular historical importance due to the large number of carvings on the cave walls, some of which date back to the Bronze Age (cup and ring marks). The largest number of dated carvings, however, are Pictish in date (*c.* 5th century AD - 10th century AD), and are present on the walls of many of the caves. These include Jonathan's Cave, Court Cave, Western Doo Cave and Sliding Cave (Rankin 1988; Ritchie and Stevenson 1993; Cummins 1999).

1.3.2 The significance of these carvings was first established as a result of a visit to the area by James Young Simpson, a doctor and respected antiquarian, in 1865. He realised that the carvings were important, ad returned the following year with some antiquarian colleagues. He recognised that some of the carvings were closely paralleled on the 'sculptured stones' of Scotland, which had been described in a major treatise only a year previously. Simpson published a description of these the following year, accompanied by illustrations drawn by a fellow antiquarian, Mr Drummond. Further publications followed, including the publication of the first photographs of the carvings by Patrick (Patrick, 1905 and 1906).

1.3.3 Further carvings were discovered in the Michael Cave in 1929, and whilst these were not fully published, plaster casts of one was taken, along with some of the carvings from the other caves. Casts now reside in the Kirkcaldy Museum and the National Museum of Scotland in Edinburgh.

1.3.4 Various descriptions of the caves exist, suggesting that they may originally have numbered as many as twelve – the Glass (or Glassworks) Cave, the Michael Cave (infilled in 1929), the Court Cave, the two Doo (or Dovecote), Caves the four Well Caves, Jonathan's Cave (also known as the 'Cat' Cave), the Sliding Cave and the Gasworks Cave (McCormick et al, 3 - 7). Of these, the Glassworks cave has subsequently collapsed (in 1900), probably as a result of subsidence caused by the shafts of the adjacent Michael colliery, the western Doo Cave collapsed as a result of the use of a heavy gun emplacement on the cliff above. The Well Caves 2 and 3 are now no more than rock shelters, whilst only part of the blocked entrance of Well Cave 4 can now be traced. Many of the surviving caves have also suffered from rock falls or vandalism.

1.3.5 The nature of the Pictish activities associated with the caves and wall carvings remains relatively elusive, although two burials have recently been uncovered outside Jonathan's Cave (Reid 1993; Guttman 2002). In 1988, a high tide caused extensive erosion outside the cave and revealed a skeleton. The skeleton was excavated by the local police force, and subsequent analysis established the skeleton as an adult male buried with its head to the west and arms folded across the chest. It was buried beneath 0.7m of overburden, but there was no evidence of a grave cut, coffin or cist (Guttman 2002; Provan 1988). A sample of bone was sent for C14 dating, and gave a date of AD 970 – AD1120. In 1993, a second burial was discovered in the same way. It lay only 5m to the north of the first, 1.4m below the modern topsoil. Once again, the head was positioned to the west, however, the skeleton was identified as that of a young adult, probably female in her early twenties (Yeoman and Provan 1993; Guttman 2002). This was also radiocarbon dated, to between AD 1020-1190 (pers. comm. D. Speirs 2004, courtesy of Fife Council Archaeological Unit).

1.3.6 Structures associated with the use of the caves include Macduff's Castle, which was built in the 14th century on the top of the cliff, above Well Cave, to which local legend asserts that it may have been linked by a stairwell. King Edward I of England stayed in the castle in March of 1304, where he stayed as a guest of Sir Michael Wemyss of Wemyss. When Sir Michael later sided with Robert Bruce, Macduff's castle was probably amongst the manors and lands Edward ordered burned in revenge. An inventory of 1615 mentions a "laich cellar", a "woman hous", two rooms called the "laird's chalmers", the "great chalmer" and the "keep hous," as well as a bake hous and a brew hous. This castle started to fall into decay during the 17th century, a process that culminated with the demolition of one of the twin towers during the 20th century.

1.3.7 Some of the caves appear to have been used as dovecotes during the post-medieval period, with some of the modifications made to the Doo Cave in particular still visible in the remains of East Doo Cave. A free-standing dovecote, probably dating to the 16th century, also stood in this vicinity, but this was encroached upon by erosion, and finally collapsed in 1966. In the medieval and early post-medieval periods only lairds and burghs were allowed to keep pigeons to provide fresh meat during the winter months. Both of the Doo Caves were certainly modified to house pigeons, with nesting boxes added, the entrances partially blocked off and entrance holes for the birds constructed.

1.4 Previous Archaeological Investigations

Jonathan's Cave

1.4.1 This cave is approximately 35 metres in length and has two large entrances. The cave is known to have a long history of occupation that extended as late as the 18th century. In fact the cave's name is derived from the Christian name of the man who lived there as a nail-maker with his family during this time.

1.4.2 Professor J.Y. Simpson observed Jonathan's Cave in the 1860s, and identified the carvings of the walls as Pictish. He also undertook some archaeological excavation within this cave but there are no extant records of where these sondages were placed, or detailing their results. (For Michael Cave, see Edwards 1929 PSAS 67. This is accessible on line at http://ads.ahds.ac.uk/catalogue/adsdata/PSAS_2002/pdf/vol_067/67_164_176.pdf).

1.4.3 In 1980, Dr Mackie of the Hunterian Museum undertook a small-scale investigation within the cave, comprising two excavation trenches (5 x 2 m and 8 x 2m) outside the cave entrance. Both trenches had relatively deep stratigraphic sequences and contained a series of sandy and clay deposits. Finds retrieved from these deposits included animal bone, shell and jet. Of particular interest was a 9^{th}-10^{th} century Norse bone pin (Radiocarbon dated to AD 950-1250; Mackie 1986; Guttman 2002).

1.4.4 In 1986, a section of eroding cliff face immediately in front of Jonathan's Cave was recorded by the Central Excavation Unit (CEU). A 2m section of this was excavated to approximately 0.5 m into the cliff face. The section was made up of eight identifiable layers, each of which contained a variety of finds and all produced shells and animal bone (Guttman 2002).

1.4.5 Between 1986 and 1989, the CEU excavated a further section into the eroding shoreline in front of Jonathan's Cave in response to erosion by the sea, which had destroyed approximately 5m of land. Again, the section was cut back some 0.5 m into the eroding face and the deposits were recorded. In this instance 7.4 m of section was recorded. These layers contained were interpreted as midden material, although a recent reinterpretation of these excavations has suggested that these were probably not *in situ* but represented erosion from a midden (Guttman 2002).

The Well Cave (Well Cave 1)

1.4.6 This cave is situated immediately below Macduff's Castle. Its name is derived from a well which, according to legend, used to exist in the rear chamber and was the focal point of a local New Year procession until only a hundred years ago (Deas 1948, 3-4). No known excavations have occurred either inside or directly outside the Well Cave, and no carvings have been identified within this cave. However, the Hunterian Museum of the University of Glasgow excavated two 3 x 2 m trenches outside Well Cave 3 at the same time as the Jonathan's Cave excavation in 1980. The deposits in front of the two caves were very similar.

The Sliding Cave

1.4.7 No known archaeological investigation has taken place in the Sliding Cave.

2 METHODS

2.1 Introduction

2.1.1 A project design for this phase of archaeological work was compiled by Videotext Communications (Videotext Communications 2004). This provided the basis of the Scheduled Monument Consent and all fieldwork was undertaken in strict accordance with this project design, a synopsis of which is provided below. The archaeological work took the form of a geophysical survey, a laser scanning survey of the caves and trial trenching.

2.2 Aims and Objectives

2.2.1 The main aim of the project, as described in the Project Design (Videotext Communications 2004, 5) was to gain a better understanding of the precise nature and range of the archaeological deposits both within the caves and outside them. It was to address questions concerning when the caves were in use, how long they remained in use for and the nature of activities undertaken within them.

2.2.2 The over-arching aims of the work were to:

- Characterise the potential of the archaeological resource on the Site and
- Provide a condition survey of the parts of the Site investigated

2.3 Research Questions

2.3.1 In addition to the general project aims outlines above, the Project Design outlines a number of specific objectives related to each particular area of investigation (Videotext Communications 2004, 5-6). Specific aims within relating to each area investigated were as follows:

Jonathan's Cave

- To establish, within the constraints of limited area excavation, the date range of human use of the cave
- To identify the nature and, if possible, the extent of occupation within the cave
- To examine whether there may be more Pictish carvings under the deposits abutting the walls
- To establish whether evidence survives of any specialist activities such as metallurgy or the use of pigments – which were associated with the act of carving the Pictish motifs and thereby to offer explanations for the density of carvings in Jonathan's Cave
- To determine the nature and extent of ground disturbance during medieval and later uses of the cave
- To locate any evidence of cave furniture within the cave and the deposits

Well Cave

- To examine the evidence for a well and well structure within the cave
- To identify when the cave was first occupied
- To identify the extent of occupation within the cave
- To assess the location and nature of the now blocked passageway at the back of the cave
- To examine why this cave was so important during the medieval period through to modern day

Sliding Cave

- To ascertain the nature of activity within this cave and its date range
- To investigate whether further Pictish carvings may be identified within the cave

Outside the Caves

- To investigate the nature and extent of any occupation deposits outside the entrance to the caves
- To determine the presence or absence of further burials outside the entrance of Jonathan's Cave, and whether such findings might imply the existence of a Pictish cemetery in this zone
- To assess the environment surrounding the caves
- To assess the level of erosion of these caves and the extent to which this is affecting the caves

2.4 Survey Aims

2.4.1 In accordance with the project design, the geophysical survey, Archaeoptix's 3D laser survey and the evaluation trenches took place within three main zones. The aims of this survey were as follows:

- To locate the former ground surface within the caves
- To investigate other evidence for occupation and burial activities outside the caves
- To provide a high-definition 3-D measured visual record of the caves and their carvings using the laser scanner
- To investigate whether the laser survey might discover the existence of new carvings and add increased information and definition to the known ones

2.5 Fieldwork Methods

2.5.1 Five trenches were opened by hand within the caves and two machine-excavated trenches were dug outside the entrance to Well Cave (**Figure 2**). In addition, a long section of the eroding coastline was cut back and recorded. All spoil was metal detected by an approved operator.

2.5.2 The machine-excavated trenches were opened using a tracked mini-digger fitted with a toothless 1m wide ditching bucket. All machine work was undertaken with constant archaeological supervision and ceased at the identification of significant archaeological deposits or where they became too deep and were stopped for safety reasons.

2.5.3 All archaeological deposits were recorded using Wessex Archaeology's *pro forma* recording sheets with a unique numbering system for individual contexts, drawings and samples. Trenches were located using a Trimble Real Time Differential GPS survey system. All archaeological features and deposits were planned at 1:20, and all sections were drawn at 1:10. All features and deposits were photographed, although only digital photographs were taken of the trenches within the caves themselves due to lighting difficulties.

2.5.4 The work was undertaken between the 4th and 6th of June 2004.

3 RESULTS

3.1 Introduction

3.1.1 This section sets out the results of the fieldwork and is prepared in accordance with the Scheduled Monument Consent, which requires the preparation of a data structure report. The appendices include the supporting lists required for a data structure report and these are as follows:

- Appendix 1: Trench Appendix
- Appendix 2: Graphics Appendix
- Appendix 3: Photographic Summary

3.1.2 Information concerning the finds assemblage and the environmental samples are included within this report. Other data including a full geophysical survey report is held in the Project Archive.

3.2 Geophysical Survey

3.2.1 Geophysical Survey of the site was undertaken by GSB Prospection Limited, who prepared a separate report on the results of their survey (GSB 2004). The results of this work are only included in summary here. The full report can be found in the project archive.

3.2.2 Three areas were surveyed using ground penetrating radar (GPR) or gradiometry. The locations of these three areas are highlighted in **Figure 2** at a scale of 1: 1000.

3.2.3 The geophysical survey grids were set out by GSB Prospection Limited and tied in by Dr Henry Chapman using a Trimble GPS System and Al Carty of Archaeoptix.

3.2.4 In general, conditions were adequate for survey within the caves, although problems were encountered within Jonathan's Cave where the ground sloped upwards towards the entrance, making data collection difficult. The gradiometer survey was carried out in front of Well Cave where the ground was flat and under short grass.

3.2.5 In Jonathan's Cave, the radargrams within the cave were quite noisy, with isolated areas of ringing. This was attributable to large numbers of metal objects (particularly iron nails) within the floor deposits. The depth of deposits across much of the cave was far shallower than expected. Although some features were visible in the radargrams, these are probably due to geological features including bedding planes, joints, fractures and voids within the sandstone bedrock.

3.2.6 Where there is a strong electromagnetic contrast, the GPR signal can be inter-reflected or reverberated, causing a delay in the reflection of the signal. This happens to some extent with all reflections and results in a greater apparent depth than actually exists. This means that it is not often possible to detect the

base of features and in general only the tops of buried features and deposits can be detected with certainty.

3.2.7 The data from Well Cave were affected badly by reflections from the walls and roof of the cave. Two sets of reflections from either side of the cave give the appearance of a curved buried occupation surfaces. However, the response is masked by the reflections from the walls and ceiling, and so the interpretation remains tentative.

3.2.8 The gradiometer survey outside Well Cave (**Figure 2**) indicated an area of increased magnetic response. When excavated, this anomaly was discovered to be a result of the build up of over 2m of soil over former beach deposits (Trench 6).

3.2.9 Ferrous responses within this data are the result of modern bonfires and surface debris. The effects from modern bonfires may have masked evidence for occupation in front of Wells Cave.

3.3 Archaeological Evaluation

3.3.1 It was hoped that the deposits from within the caves would provide good stratigraphic sequences. However, as the evaluation commenced within Jonathan's Cave it transpired that areas within this cave had been cleaned out to natural bedrock prior to its later utilisation in the 18th and 19th centuries. The area near the entrance provided a deeper and better preserved stratigraphic sequence. Deposits within the Well Cave had also suffered partly from later disturbance and cave clearance, and it is unlikely that any deposits relating to the Pictish occupation or use of this cave survive. In contrast, however, the deposits within the Sliding Cave were well preserved and may provide evidence of *in situ* use of the cave during Pictish times.

3.3.2 The two trenches opened outside the entrance to the Well Cave both contained a deep sequence of stratigraphic deposits. Natural bedrock was not encountered in either trench, since both became too deep and unsafe for machining to continue.

3.4 Jonathan's Cave

3.4.1 Two trenches were opened in Jonathan's Cave. Trench 1 was cut along the western side of the cave and Trench 2 was placed inside the entrance. Both trenches were excavated completely by hand.

Trench 1

3.4.2 Trench 1 was located with the intention of identifying whether more Pictish carvings lay under the deposits abutting the walls. Deposits within this trench, however, were limited to 0.30 m of relatively modern deposits.

3.4.3 The top layer (101) was a 0.10 m thick grey-black disturbed silty horizon full of nails, and nail fragments. The presence of iron and metal-working debris implies that this deposit relates to nail-making activities that are documented

to have taken place in this cave in the 18th century (McCormick *et al.* u.p.). The lower fill of this trench (102) comprised a pinkish grey-brown silty sand interleaved with degraded sandstone that was 0.23 m deep. This deposit represents/ relates to a series of silting events associated with roof and wall collapse within the cave. Although this may have occurred over a fairly extensive period of time, the deposits are unlikely to represent more than a 200 year span, since all artefacts (especially pottery) retrieved from this horizon were of post-medieval date. Directly beneath this horizon lay the natural bedrock (103), sloping downwards from the south-west to the north-east. A small hollow (104) - interpreted as a possible cup-mark - was identified cut into the bedrock floor.

Trench 2

3.4.4 This trench was excavated to identify the nature and sequence of cave deposits adjacent to the entrance of the cave. A more complicated stratigraphic sequence than that identified in Trench 1 was revealed (**Figure 3**). The top layer (201) was a 0.10 m deep lens of dark grey black silt with clinker and coal derived material. This undoubtedly relates to an inwash horizon that was subsequently trampled down. Finds including a Victorian coin (Object No. 3), iron nails and modern stoneware pottery fragments suggest this deposit was laid down fairly recently and is probably contemporary with 101 in Trench 1 (when the putative "Jonathan" the nail-maker used the cave). Beneath this layer, 202, a brown silt layer sealed an ashy deposit 209 in the south-western corner of the trench, this latter layer may also have been related to nail-making activities since it contained large quantities of nail fragments and metal debris.

3.4.5 A number of rubble horizons were excavated beneath this layer (203-205), all of them relating to either falls from the cave roof directly or cascades from the cliff face that subsequently were washed into the cave by the sea (talisk cones). Beneath these was a sandy inwash horizon (206), which sealed (207), another thick rubble infill layer. In turn this overlay a deposit of inwashed rounded boulders (210) in the southern part of the trench and a midden deposit (211) in the north-eastern corner of the trench. The latter deposit was not fully excavated. Natural bedrock lay beneath this layer, into which two post-holes (212 and 213) and a crescent-shaped feature (214) were cut. Both the post-holes were perfectly circular (*c*. 0.10 m diameter and 0.10 m deep), and the crescent-shaped cut was *c.* 0.25 m in diameter and 0.15 m deep (**Figure 3** and **Plate 1**). These features may have been related to some sort of door or partition associated with the cave entrance, although they remain undated.

Trench 3

3.4.6 For a number of reasons (including logistical and Health and Safety factors) it was decided that Trench 3 would not be opened. It had been planned to target this trench close to the entrance to the cave in order to further establish the nature and extent of occupation within and associated with the cave.

3.5 Well Cave

3.5.1 Two trenches were opened within Well Cave (Trenches 4 and 5 – See **Figure 2**)

Trench 4

3.5.2 Trench 4 was positioned against the north-western wall of the Well Cave, over the approximate location of the well (**Figure 4**). This trench contained a series of eight deposits. The well structure (403) and the other deposits within this trench were sealed by a thick red sandstone rubble layer (401) relating to the collapse of the roof of the central chamber in the 1920s.

3.5.3 The well itself was a roughly circular structure *c*. 1.70m x 1.20 m in plan and *c.* 1.20 m deep, which cut the natural sandstone bedrock (409). It is likely that this was originally a natural hollow within the cave that was modified anthropgenically, since some tool marks were identified on the western side of the cut. Furthermore, a number of sandstone boulders had been placed around the northern and eastern sides of this structure as a stone setting. Three fills were identified within the well cut 403. The uppermost fill, 402, contained modern debris of very recent date (including modern glass and a Coca-Cola bottle). Beneath this, layer 405 was a 0.50 m deep brownish-black silty sand deposit containing large numbers of sub-rounded waterworn beach cobbles. It is probable that this deposit relates to a high-energy inwash horizon, when the sea flooded the cave. Finds from the deposit included a post-medieval pipe stem and coin (halfpenny). The lowest fill, 406, was a dark brown silty sand also containing smaller waterworn pebbles. No finds were retrieved from this layer but it is unlikely to be of significantly different date to 405. Possible steps to permit easy access may have been cut into the western side of the well.

3.5.4 To the south and west of the well (sealed by 401) a possible informal floor surface was indicated by a sequence of compacted laminated deposits interleaved with cobbling (404). Layer 404 was 0.35 m deep and contained fragments of medieval pottery including whiteware sherds. Its laminated character would imply a series of surfaces, perhaps associated with a number of different events linked with the use of the well. This layer sealed a mixed layer of decayed sandstone and rounded beach pebbles (408), probably related to natural beach inwashing, which in turn sealed the natural bedrock.

Trench 5

3.5.5 Trench 5 was located in the north-eastern corner of Well Cave, and was positioned in order to investigate a possible passageway that originally linked this cave with McDuff Castle above.

3.5.6 The stratigraphic sequence identified within this trench was shallow, implying that any deposits relating to Pictish activity within this part of the cave have been cleaned out during medieval or later times. An upper disturbed trample

layer (501) was identified that was 0.14 m deep. Beneath this lay an inwash deposit (502 and 504 in the eastern part of trench), interleaved with red sandstone blocks, representing collapse from the roof of the cave. This was *c.* 0.20 m deep and contained two sherds of glazed medieval pottery. In turn this layer sealed a clay lens (503 and 505 in the eastern part of trench; 0.18 m deep) that contained no artefacts and was undoubtedly water derived. A thick gravelly deposit containing large quantities of rounded pebbles (506) was sealed by the clay lenses and this was also derived from sea inwash related events. The natural red sandstone bedrock (508) was detected immediately below this layer at a depth of 0.60 m below the present ground surface.

3.6 Outside the entrance to Well Cave

3.6.1 Two machine-cut trenches (Trenches 6 and 7) were opened along the grassy slope outside the Well Cave. Both were machine excavated to a depth of between 2.20 m and 2.45 m, and in neither case was the natural bedrock reached. Since these trenches were not stepped or shored, it was considered too dangerous to enter and record them properly (and not within the remit of the Wessex Archaeology Risk Assessment). Hence only measured sketch sections of both the trenches was possible.

*Trench 6. (**Figure 2**)*

3.6.2 Trench 6 was located towards the base of the slope beneath the cave and was opened to a depth of 2.45 m. The topsoil (601) was 0.75 m deep and contained a large quantity of coal clinker derived from the recent coal workings. Beneath this, two separate made-ground dump horizons (602 and 603) were discerned, both of them consisting of dark brown garden loam deposits. It is likely that these deposits are Victorian levelling horizons, and were 1.10 m and 0.35 m deep respectively. Both layers were relatively level, and they did not slope downwards from north to south as would be expected if they were colluvial layers. 603 sealed a light brown silty layer that contained beach shingle and shells. Although initially identified as a midden horizon, it was only 0.25 m deep and is more likely an inwash beach deposit. If it is related to a midden, it is midden derived material and has washed down from upslope, and is not *in situ* material. The deposit contained a small fragment of a post-medieval clay pipe, and a roof tile (with nail hole) possibly derived from McDuff Castle above. The lowest layer that was machined (at 2.45 m +) was a dark brown loam deposit. Thus none of the deposits within this trench were of great antiquity, they are post-medieval or modern in date.

Trench 7.

3.6.3 Trench 7 was opened upslope from Trench 6, closer to the entrance of Well Cave, and was cut to a depth of 2.20 m. Six separate deposits were identified within the sequence. The sequence of deposition within this trench was quite different to that witnessed in Trench 6, although it lay only a few metres to the north. The top layer (701) comprised modern clinker deposits derived from the recent coal mining in the vicinity. Beneath this, (702) was identified as a deep made-ground layer of dark brown loamy garden soil of Victorian date. This levelling deposit sealed a red sandstone horizon that had resulted from

collapse (703) of the adjacent cliffs and cave edges. In turn this cliff collapse lay over an 'in situ' midden deposit (704) that was over 80 cm deep and contained large quantities of shell. Beneath this (705) was a dark brown silty deposit sealed by the midden, containing small quantities of shell and animal bone.

3.6.4 The lowest layer encountered was a yellowish silty-sand deposit with charcoal flecks (706), into which a series of ard-marks (707) were cut. The charcoal inclusions within layer 706 may indicate that this was not a natural deposit. The ard marks were sealed by a deep stratigraphic sequence (2.2m below modern ground level). Furthermore they followed a criss-cross pattern (**Plate 1**), and all were narrow (only 0.05 m in width), which is not particularly diagnostic of plough-marks of medieval or later date. It is possible that these marks represent traces of prehistoric ploughing, potentially of Late Neolithic or Early Bronze Age date. Samples were retrieved from their fills (708) and contained hazelnut shells and charcoal, sufficient for radiocarbon dating.

3.7 The Sliding Cave

3.7.1 One small trench (Trench 8, measuring 2 x 1.2 m) was opened by hand in the Sliding Cave situated *c*. 70 m to the east of Jonathan's Cave.

Trench 8

3.7.2 A series of five deposits were encountered within the trench (**Figure 5**). The upper layer (801) was a 0.10 m deep disturbed grey brown silty clay laminated horizon. This deposit contained post-medieval pottery, and was derived from recent water-borne and wind-blown materials. Deposit (801) sealed a lower laminated thicker horizon (0.28 m deep) that was less disturbed but also related to deposition of material over time by sea and wind. Beneath this (803) was a grey silty clay layer (0.30 m deep) that contained shell and animal bone. The deposit was also composed of abundant well-rounded sandstones and cobbles, and was derived from a high-energy event. As this deposit was removed, a new engraving (comprising two sinuous lines), was revealed on the northern wall of the cave. This engraving adds to the small inventory of images identified within this cave, comprising symbols of a comb-case and a mirror on the western and eastern walls of the cave respectively.

3.7.3 Layer 803 sealed a possible floor surface (804). This was a compact light brown silty clay that was charcoal-rich and contained animal bones, possibly relating to occupation associated with the use of the floor. The floor was informal, and only made of compacted clay, but overlay a formal stone pavement (805). This earlier pavement or cobbled surface was relatively level and had been constructed from sub-rounded red sandstone boulders. It was decided to stop excavation at this level, and not to disturb *in situ* archaeological structures. However, a sample was taken from the compacted clay floor (804) above and this contained large quantities of barley grains. These were submitted for radiocarbon dating with the hope that this might provide dating evidence for this phase of utilisation of the cave.

3.8 Coastal Section

Trench 9

3.8.1 A long section of the eroding coast line was cut back in order top reveal the sequence of deposition along the lower coastline (**Figure 6**). This south-facing section was 8 m long and 1.40 m in depth and a series of colluvial and in-wash events were identified within the sequence. The majority of the upper deposits (902-905) were heterogeneous bands of silty sand mixed with degraded red sandstone, all related to hillwash. Two bands of dark brown silty sand containing shells (906 and 907) were midden-derived material and may have washed downslope from the 'in situ' midden identified in Trench 7.

3.8.2 Three lenses of beach inwash material (911, 912 and 913) were sealed by the derived midden layers, and these overlay the degraded sandstone bedrock (914). A shallow cut (915) was identified cutting through deposits 912 and 913. Inserted into this cut was a long thin (1.2 x 0.4 m) red sandstone monolith. The exact function of this small standing stone in this setting is unclear.

4 FINDS

4.1 Introduction

4.1.1 Finds were recovered from all of the trenches excavated. All finds have been cleaned (with the exception of the metalwork) and have been quantified by material type within each context. Quantified data form the primary finds archive for the site and these data are summarised by trench in **Table 1**.

4.1.2 All finds have been at least visually scanned in order to gain an overall idea of the range of types present, their condition, and their potential date range. Spot dates have been recorded for selected material types as appropriate. All finds data are currently held on an Access database.

4.1.3 This section presents an overview of the finds assemblage, on which is based an assessment of the potential of this assemblage to contribute to an understanding of the site in its local and regional context. The assemblage is largely of post-medieval date, with a handful of medieval material (pottery sherds).

4.2 Pottery

4.2.1 The majority of the pottery assemblage is of post-medieval/modern date, including sherds of glazed, coarse redware, bone china, refined whiteware and stoneware. With the exception of the coarse redware (102, 404), all these wares can be assigned to the modern period ($19^{th}/20^{th}$ century).

4.2.2 Medieval pottery was recovered from only two contexts – two sherds from 404 (glazed whitewares) and four sherds from 502 (two glazed whitewares and two unglazed coarsewares). The likely date for these is 13^{th} or early 14^{th} century.

4.3 Clay Pipe

4.3.1 Pipe fragments include plain stem, decorated stem/spur, plain bowl and decorated bowl. The bowl and decorated fragments all came from Trench 2 (topsoil), and are probably of 19th century date or later.

4.4 Glass

4.4.1 All of the glass is of modern date (19th/20th century), and includes fragments of bottle, jar and window.

4.5 Metalwork

4.5.1 This category includes objects of iron, lead and copper alloy, and is almost certainly all of post-medieval date. The ironwork consists entirely of nails and other structural items (bolts, bars, etc). The copper alloy comprises two possible post-medieval coins, two cartridge cases, three pieces of folded strip or sheet, and one short length of wire bent into a small ring. The lead object appears to be a small repair plug.

4.5.2 Two of the copper alloy objects were initially identified as coins. The first of these, object 3, from context 201, is a Victorian Penny. This was recovered from the topsoil in Trench 2. The second, recovered from layer 405, is not certainly a coin. This is a copper alloy disc, heavily corroded, which shows no signs of engraving. It is possible that this is a very badly worn and corroded post-medieval penny, or that it is a damaged button.

SITE CODE: WEMA 04 ***SITE NAME:*** East Wemyss, Time Team

Context **201** ***Object*** **3**
Metal Cu Alloy ***Denomination*** Penny ***Reverse axis*** 0
Diameter 25 ***Weight***
Issuer Victoria ***Issue date*** 1888
Obverse condition Corroded ***Reverse condition*** Very worn
Obverse Illegible ***Reverse*** Britannia seated, above 1888.
Notes Very badly worn and corroded Victorian penny. ***References.*** /

Context **405** ***Object***
Metal Cu Alloy ***Denomination*** ***Reverse axis*** 0
Diameter 21 ***Weight***
Issuer ***Issue date***
Obverse condition Corroded ***Reverse condition*** Corroded
Obverse Illegible ***Reverse*** Illegible
Notes May not be a coin. May be a button. The copper alloy disc is too corroded to be certainly identified. If this is a coin, then its size and form suggest a post-medieval or modern penny. ***References***

4.6 Other Finds

4.6.1 Other finds comprise ceramic building material (single, very worn fragment of roof tile), stone (five fragments of sandstone roof tile and one apparently unworked quartz pebble) and ironworking slag. All these are demonstrably or probably of post-medieval date.

4.7 Shell

4.7.1 All of the shell recovered is marine shell, and includes examples of at least five species: periwinkle, whelk, limpet, bivalve and razor shell. Limpet and periwinkle predominate. Most of the shell derived from Trench 9.

4.8 Potential and Recommendations for Further Work

4.8.1 There is very little within this assemblage to indicate occupation (or indeed any activity) within the caves prior to the 19th century, and there is nothing which can be related to Pictish activity at the time of the execution of the carvings. It is unlikely that further analysis of the small amount of medieval material (six pottery sherds) would either refine the spot-dating outlined above, or provide further illumination on medieval activity in the caves.

4.8.2 It is recommended that, subject to the agreement of Historic Scotland, all obviously modern (19th/20th century) material, as well as all ferrous metalwork, is discarded.

Material	**Tr. 1**	**Tr. 2**	**Tr. 4**	**Tr. 5**	**Tr. 6**	**Tr. 7**	**Tr. 8**	**Tr. 9**	**Unstrat**	**TOTAL**
Pottery	8/94	5/31	3/42	4/110	-	-	1/3	-	-	**21/280**
medieval	-	-	*2/37*	*4/110*	-	-	-	-	-	***6/147***
post-medieval	*8/94*	*5/31*	*1/5*	-	-	-	*1/3*	-	-	***15/133***
Ceramic Building Material	-	-	-	-	-	-	-	1/19	-	**1/19**
Clay Pipe	1/1	3/14	1/2	-	1/3	-	-	-	-	**6/20**
Stone	-	1/194	4/24	-	1/63	-	-	-	-	**6/281**
Glass	4/306	12/213	4/422	2/9	-	-	1/38	2/32	-	**25/1020**
Slag	-	1/57	-	-	-	-	-	-	-	**1/57**
Metalwork	21	36	1	-	1	-	1	1	1	**63**
Iron	*21*	*31*	-	-	-	-	*1*	-	-	***53***
Lead	-	-	-	-	*1*	-	-	-	-	***1***
Copper alloy	-	*5*	*1*	-	-	-	*1*	*1*	*1*	***9***
Animal Bone	7/98	25/413	21/666	7/49	30/274	42/472	70/818	83/937	-	**285/3727**
Shell	-	6/41	-	5/26	3/5	23/66	2/14	100/351	-	**139/503**

Table 1: Finds totals by material type (number / weight in grammes)

5 ENVIRONMENTAL SAMPLES

5.1 Introduction

5.1.1 Eight bulk samples were taken of three to fifty litres volume from well stratified deposits that appeared to have a potential for the recovery of charred plant material. Four were taken and processed for artefacts only. The remaining four were processed for the recovery and assessment of charred plant remains and charcoals.

5.2 Assessment Results: methods and data

Charred Plant Remains

5.2.1 The bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh and the residues fractionated into 5.6 mm, 2 mm and 1 mm fractions and dried. The coarse fractions (>5.6 mm) were sorted, weighed and discarded.

5.2.2 The flots were scanned under a x10 - x30 stereo-binocular microscope and presence of charred remains quantified (**Table 3**), in order to present data to record the preservation and nature of the charred plant and charcoal remains and assess their potential to address the project and subsidiary aims.

5.2.3 The flots were of an average size (40-250ml) with some roots and occasional modern seeds. The material itself was very well preserved within some samples with even a fragment of a charred flower present.

5.2.4 The only sample that contained substantial remains of charred cereals was from Trench 8 in the Sliding Cave, context 804. This contained many grains of hulled barley (Hordeum vulgare sl) and occasional rachis fragments. There was also a single spikelet fork and occasional probable grains of emmer wheat (Triticum dicoccum). In addition to these two crops the sample contained fragments of hazelnut (Corylus avellana) and several seeds of probable weeds including dock (Rumex sp.), vetches/wild pea (*Vicia/ Lathyrus* sp.), annual meadow grass/cat's tails (*Poa/Phleum* sp.), brome grass (*Bromus* sp.) and fat-hen (*Chenopodium album*). A single unidentified mineralised seed was also present within this sample.

5.2.5 Those from Trench 7 contained few remains. That from the possible ard mark 707 contained no readily identifiable plant macros, although two small fragments of possible hazelnut (*Corylus avellana*) were recovered. This sample did however contain several seeds that although degraded were uncharred and possibly therefore modern. However, given the depth of over-burden it would seem highly unlikely that such seeds are modern. Given the depth and weight of the overburden, and the proximity to the coast, it is possible that the seeds have been preserved through a mixture of waterlogging and anaerobic sealing.

5.2.6 Those from midden 704 contained occasional fragments of grass or other plant stems as well as occasional charred seeds including those of grasses. The material within the samples is generally not diagnostic of any one period. The remains from midden 704 could be anything from Mesolithic to modern, the grass stems perhaps present from their use as tinder to light fires.

5.2.7 Context 804 containing the cereal remains is of more interest. Given that cereal grains often need to be further processed into food, their very presence in such numbers tends to point to more substantial domestic activity than a brief temporary period of occupation. Unfortunately within Scotland barley forms a major crop from the Neolithic to modern times (Dickson and Dickson 2000). None of the weed seeds were to be associated with any specific period either, although the presence of weed seeds alone, albeit in low numbers, probably suggests a date later than the early Bronze Age. A very small amount of emmer chaff was present; but in general cereal chaff was poorly represented in the sample.

Charcoal

5.2.8 Charcoal while present in all of the samples (**Table 3**) was more abundant within that from context 804. This contained many fragments of twig and branch type material. The ard-marks also contained a reasonable quantity of well preserved charcoal. This charcoal was fresh enough to suggest that it had received very little reworking, that it came from a single source and single burning event. In the light of this, it is likely to be broadly contemporary with the ard marks, and unlikely to have been significantly reworked in a midden. It therefore provides a possible source dating.

Land and Marine snails

5.2.9 During the environmental processing of bulk soil samples, a few shells of snails were noted, and recorded (**Table 3**), in the flots. Neither land nor marine mollusca were well represented in the samples. Only a single shell of land mollusc, *Discus rotundatus,* was recovered from the midden in Trench 7, context 705. Marine shells were represented by occasional shells of periwinkle, probably rough periwinkle (*Littorina saxatilis*) and cockle (*Cardium* sp.). Some of these marine shells appeared to have been reworked and some may have even been fossilised.

Small mammal and fish bones

5.2.10 During the processing of bulk soil samples for the recovery of charred plant remains and charcoals, small mammal and fish bones were noted, and recorded (**Table 3**), in the flots.

5.3 Potential

Radiocarbon Dating

5.3.1 There are two phases of great interest on the site for which the environmental evidence provides a possible source of datable material. The deposit from 804, an occupation layer in trench 8, and taken specifically for radiocarbon dating, was considered to have good potential for this purpose. The high numbers of well-preserved barley grains within this general occupation deposit are likely to be contemporary with its formation and so provide a good material for dating. The midden material was less promising. Fragments of parenchyma, grass stems and some twig wood were recovered; all of which have some potential for dating. The presence of some roots, and that such material was not abundant in the deposit may mean, depending on the nature of the overlying sediment, that some may potentially be intrusive.

5.3.2 Accordingly, a sample of the barley recovered from sample 5, taken from context 804, the occupation layer at the base of trench 8, was submitted for single entity AMS radiocarbon dating. The result of this is radiocarbon determination is shown below in **Table 2**.

Wemyss Caves, Scotland (Time Team) 55754							
Feat type	*feature*	*Context*	*material*	*result no*	δC^{13} ‰	*result BP*	*cal date*
		804	barley (sample 5)	NZA-20755	-23.3	1726±30	AD 240-400

Table 2. Radiocarbon determination for sample 5, context 804

5.3.3 The date for this deposit lies within the Middle Iron Age period. It had been suggested that the occupation layer might be contemporaneous with the new 'Pictish' carvings identified within this cave, which were partially buried by the storm inwash deposit (803) deposit sealing 804. This confirms that there is an *in situ* sequence of deposits in this cave going back to the Middle Iron Age period, and potentially beyond. The importance of the Middle Iron Age date for this occupation should not be understated as it points to pre-Pictish occupation within the Wemyss Caves, and adds significantly to our knowledge of the history of inhabitation of the caves.

5.3.4 A second phase of potentially even earlier activity relates to the ard-marks in the base of Trench 7. The location and nature of the marks means that they are potentially prehistoric in date. The relationship between the marks and the changes in relative sea-level (between rising sea level and isostatic uplift of the land) is of considerable interest in interpreting and examining the cultivation of the coastal plain. Only by dating the material can such potential be realised. To obtain suitable material for the radiocarbon date it is necessary to examine the charcoal in order to obtain wood that is either young sapwood or from relatively short-lived, scrub species. These samples must be single

entity, identified to species and assessed for evidence of transportation (abrasion, loss of surface detail etc).

5.3.5 Whilst it might be desirable to date the uncharred (and as yet unidentified) seeds from layer 707, these are extremely degraded, and it is not clear whether enough carbon would be present for AMS radiocarbon dating. It must also be considered that their survival may be due either to the presence of silica or other inorganic material within the seed coat. Given the uncertainty regarding the mode of preservation and their identification, these are not recommended as suitable material for dating. The wood charcoal is deemed most suitable because it all had a similarly fresh appearance given the impression that it dervied from a single event. Two small possible fragments of hazelnut were recovered from the same deposit, but these have a much greater chance of being residual than the wood charcoal. Wood charcoal does not survive reworking well, as it breaks up very readily along its longitudinal planes. Hazelnuts on the other hand are more robust, and will survive reworking better. Wood charcoal for a variety of factors – including possible re-use of timbers and the longevity of trees – which may yield radiocarbon dates some 500 years apart. For this reason twig and brush wood as present in the ard mark samples is preferable where other charred macros are absent.

Charred plant remains

5.3.6 The charred plant remains from the midden have generally little potential for further analysis, although the parenchyma (soft plant tissue) may be from exploited roots, tubers or fruits. Of more potential was the sample from 804, which reveals the presence of nearby domestic activity. It also has the potential to reveal the nature of the processing and something perhaps of the conditions under which the crop was grown.

Charcoal

5.3.7 The charcoal from the occupational deposit has a limited potential to reveal the sources of fuel and selection. The main potential of the charcoal from the ard-marks is to supply material for a radiocarbon date.

Land and marine snails

5.3.8 The snails have little further potential.

5.4 Proposals

Charred plant remains

5.4.1 In the light of the radiocarbon date of obtained for the material recovered from layer 804, it is suggested that the sample from the occupation layer in the Sliding Cave (sample 5) is analysed and reported on in full, in order to give a broad picture of the economy of the peoples inhabiting the caves during this period.

Charcoal

5.4.2 It is suggested that the charcoal from the ard-marks be analysed for radiocarbon dating.

				Flot							Residue	
Feature type/ No	Context	Sample	size litres	flot size ml	Grain	Chaff	Weed seeds uncharred	Weed seeds charred	Charcoal >5.6mm	Other	Charcoal >5.6mm	analysis
Tr 8	804	5	50	250 [10]	A*	C	c	A	A*	s/lmb moll-m (c)		**P**
Tr 7 Ard-mark 707	708	6	3	30 [10]	-	-	-	-	A	moll-m (c)		**C**
Tr 7 midden	704	7	10	40 [20]	-	C	-	C	A	fish-b (C) moll– m (C)		
Tr 7 midden	705	8	8	45 [15]			c		A	moll– t m (C)		

KEY: A** = exceptional, A* = 30+ items, A = ≥10 items, B = 9 - 5 items, C = < 5 items, (h) = hazelnuts, smb = small mammal bones; Moll-t = terrestrial molluscs Moll-f = freshwater molluscs; Analysis, C = charcoal, P = plant, M = molluscs

NOTE: [1]flot is total, but flot in superscript = ml of rooty material. [2]Unburnt seed in lower case to distinguish from charred remains

Table 3. Assessment of the charred plant remains and charcoal

5.5 Animal bone

Methodology

5.5.1 The potential of the assemblage to provide information about husbandry patterns, population structures and consumption practices was ascertained from the number of bones that could give information on the age and sex of animals, butchery, burning and breakage patterns. The number of bones that could provide metrical information was also counted.

5.5.2 Conjoining fragments that were demonstrably from the same bone were counted as one bone in order to minimise distortion. No fragments were recorded as 'medium mammal' or 'large mammal'; these were instead consigned to the unidentified category. No attempt was made to identify ribs or vertebrae (except the atlas and axis) to species, although large numbers of these bones were noted where they occurred.

5.5.3 The extent of mechanical or chemical attrition to the bone surface was recorded, with 1 indicating very poor condition, 2 poor, 3 fair, 4 good and 5 very good. 6 was used where the condition of the bones within an individual context was very varied. The numbers of gnawed bone were also noted. Marks from chopping, sawing, knife cuts and fractures made when the bone was fresh were recorded as butchery marks.

5.5.4 The contexts from which the animal bones were recovered are dated by ceramic association mainly to the post-medieval period, with some medieval (in trenches 4, 5 and possibly 8) and some possibly Prehistoric (in trenches 7, 8 and 9) in date. A midden deposit in trench 7 is as yet undated.

Results

5.5.5 261 bones were recovered by hand (**Table 4**), and an additional 143, almost all very small fragments, from three samples. The proportions have been calculated from the hand-recovered assemblage only, since the number of diagnostic pieces from the sample is so small (**Table 5**).

5.5.6 The condition of the fragments varied widely, even within the same context. Bones were best preserved in trenches 4, 8 and 9, with poor preservation noted particularly in trenches 5, 6 and 7. Some very eroded bones were present in context 502, and particularly well-preserved bones were recovered from the well context, 405. Marks from gnawing were recorded on 4% of bones in six of the trenches, with rodent gnawing on only two bones, from trenches 2 and 4. The relatively poor condition of the assemblage is reflected in the small proportion of bones that could be measured (3%), and the large proportion of unidentified fragments (62%).

5.5.7 Of the bones that were identified to species, most were cattle with a smaller proportion of sheep/goat (no positive identifications of goat). Cat bones were, unusually, third most frequent, and comprised a single bone in 101, a group of three from an immature (but not very young) animal in 201 (and a matching bone in 208), and four, all perhaps from one mature individual, in 801. In two

of these contexts individual rabbit bones were also found. Both species are likely to be modern additions in topsoil contexts, although another rabbit bone in 502 may have predated these.

5.5.8 Pig, dog, deer and horse were all represented by few or individual bones, and there was a large unidentified fragment which did not appear to belong to any of the main domesticates. This was located in context 907, which was predominantly midden derived material but which may also have included the bones of wild animals that had not been exploited by humans and become incorporated into the deposit by chance. Bird bones were relatively rare, and both hand-retrieved examples were morphologically similar to domestic fowl. An additional bone, from a small ?corvid, was recovered from a sample from 804.

5.5.9 21% of bones could provide information on the age of the animals. However once the bones under 50% complete and the cat and rabbit bones have been excluded, this proportion is much lower. Some very young animals were noticeable, however, with the mandible, radius and metatarsal of a very young calf, a very young short horned cattle fragment in 911, and parts of limb bones from two different young cattle in 208. Some young sheep/goat bones were also noted in 404, 405 and 704. The cat bones were rather too small for wildcats and probably from large domestic animals, but the number of measurable bones from other species was very small. One pathological sheep/goat second phalange with extension of the articular surface and exostosis around the proximal articulation was noted.

5.5.10 Butchery marks were recorded on 10% of bones, although a significant proportion of these are saw marks on bones from the topsoil. Burning was only recorded in sample-derived material from context 804, and of these, most were very small fragments, rather than bones that had been partially scorched during cooking.

5.5.11 Several contexts contained more than one bone from single individuals, including the cat bones but also, perhaps, the calf bones from the midden.

Potential and recommendations

5.5.12 The condition of the assemblage is variable, with the best preservation in the Sloping Cave and Coastal Section. Gnawing was only a minor contributory factor, but erosion of the bone surface had affected some bones very badly. There are some interesting bone deposits, including that from the midden in the Well Cave, but most of the associated bones came from post-medieval or modern contexts. Although there appeared to be a high proportion of immature domestic animals, the number of ageable bones is too small to enable husbandry patterns to be examined. The possible Pictish occupation deposit of 804 was unusual in that it contained a large proportion of burnt bones, and one bone from a small wild bird, superficially similar to a corvid, although it has not been positively identified.

5.5.13 The small size and relatively poor preservation of the assemblage, in addition to the post-medieval or modern origin of most bones, limits its potential. It is

not thought that further work would significantly increase our knowledge of animal husbandry, butchery, consumption or deposition patterns, so none is recommended.

	Condition of contexts	Number of fragments	Gnawed	Butchery	Measure	Age	Horse	Cattle	Sheep/ Goat	Pig	Dog	Deer	Bird	Cat	Rabbit	Unidentified
Trench 1	2 3	7	0	3	1	2	0	3	0	0	0	0	0	1	0	3
Trench 2	1 2 3	27	1	1	1	9	0	5	1	1	0	0	0	4	1	15
Trench 4	4 4 6 6	19	1	2	3	9	0	6	5	0	0	0	1	0	0	7
Trench 5	1 2	6	1	0	0	2	0	2	0	0	0	1	0	0	1	2
Trench 6	2	30	1	5	0	1	0	5	2	1	0	0	0	0	0	22
Trench 7	1 2	43	3	1	0	7	0	8	4	0	0	0	0	0	0	31
Trench 8	3 3 4	55	0	3	1	12	0	17	0	0	0	0	0	4	1	33
Trench 9	3 3 3 3 3 4	74	4	10	3	13	2	14	6	1	1	0	1	0	0	49
Total		**261**	**11**	**25**	**9**	**55**	**2**	**60**	**18**	**3**	**1**	**1**	**2**	**9**	**3**	**162**
% of fragments			4	10	3	21	1	23	7	1	0	0	1	3	1	62

Table 4: Hand-recovered animal bone.

	Number of fragments	Notes
Trench 7	2	Both unidentified
Trench 8	126	Approximately half were burnt. 1 butchered. 4 Identified: 3 sheep (2 teeth and 1 pathological first phalange) and 1 small corvid.
Trench 9	15	Mostly tooth fragments
Total	**143**	

Table 5: Sample-recovered animal bone.

6 DISCUSSION

6.1 Introduction

6.1.1 The archaeological evaluation undertaken at Wemyss Caves has furthered our knowledge and understanding of the past use of three of the caves at Wemyss. In doing this, it has fulfilled the overarching aims and objectives of the project. In addition to identifying a two new possible Pictish carvings this project has identified possible occupation levels within the caves associated with the engraving of these carvings, and also revealed evidence for the nature of the prehistoric activity within the Wemyss Caves area. It has also helped to shed further light on the history of the use of these caves in the medieval and post-medieval periods.

6.2 Geophysics Results

6.2.1 The results of the ground penetrating radar survey were affected by reflections from the walls and roofs of the caves. In Jonathan's Cave, the roughly parallel nature of the roof and floor meant that these unwanted reflections appeared at a constant time offset, and could be filtered out. There were also numerous isolated areas of ringing caused by the presence of metal artefacts within the floor deposits. The radargrams did identify some features, but given that the deposits encountered in this cave were shallower than had been expected, these are thought more likely to represent geological rather than archaeological anomalies.

6.2.2 The data for the ground penetrating radar survey of the Well Cave was also badly affected by reflections from the walls and roof of the cave. Two reflections were encountered, which in places seemed to resemble the reflection of a curved buried surface. This may indicate the presence of a buried occupation surface, although as the response from the bedrock had been masked by the reflections from the walls and ceiling that this interpretation is a tentative one.

6.2.3 The gradiometry survey identified an area of increased magnetic response, which upon excavation was found to be a deep deposit of soil. This may mark the site of an earlier cave, now completely filled. . The survey also identified a number of ferrous responses caused by modern bonfires, which are likely to have masked any evidence for occupation in front of the Well Cave.

6.3 Jonathan's Cave

6.3.1 The two trenches opened in Jonathan's Cave have revealed evidence for the post-medieval occupation and use of the caves, as well as undated evidence for earlier activity.

6.3.2 The deposits excavated in Trench 1 were relatively shallow and appear to be exclusively post-medieval in date, with dated pottery recovered from both. The upper layer also contained evidence of ironworking, consistent with the use of the cave in the 19th century by Jonathan the nail maker. The only

potentially earlier feature within this trench was the shallow hollow scoop cut into the floor of the trench. The form of this scoop is such that it could be interpreted as a prehistoric 'cup mark', but the absence of any supporting evidence for this makes such an interpretation tentative.

6.3.3 Excavation in Trench 2, which was excavated closer to the entrance of the cave revealed further features cut into the bedrock. Here, two post-holes and a crescent-shaped cut into the bedrock may relate to part of a door structure at the entrance of Jonathan's Cave. No dating evidence was recovered associated with these features. However, they were sealed by a deep sequence of stratified deposits that may have formed over a relatively long time frame. These included an undated midden layer, layers of inwashed material and material derived directly from falls from the cave sides and roof. This deep sequence of deposits is largely undated, and contains a number of layers that are likely to have taken a long period of time to form. Only the upper layers, especially layers 201, 202 and 200, contained datable material. This was associated with the post-medieval occupation and use of the cave, with most of the material recovered probably relating to the nail making of the 18th century.

6.3.4 Although the third trench planned for this cave was not excavated, the two trenches were partially successful in answering the aims and objectives for this cave. These identified that activity associated with the post-medieval use of the cave, confirming archaeologically the industrial use of the cave in the 18th century. It also established that a good undisturbed sequence of deposits lies close to the mouth of the cave and that traces of an early midden survive, sealing a number of possible rock-cut features. Unfortunately, it was not possible to date these deposits or features closely. However, this confirms that the deep sequences identified in excavations outside the cave by the Hunterian Museum and by the Central Excavation Unit survive within the entrance to the cave itself. The shallow sequence of deposits excavated in Trench 1 further inside the cave relates exclusively to the later post-medieval use of the cave.

6.3.5 None of the material recovered could be directly attributed to the Pictish period, and no new Pictish carvings identified. In the light of this, these trenches are not able to sustain further discussion on the nature of the Pictish activity within this cave, or to contribute further to the debate concerning the potential for further Pictish carvings within the cave.

6.4 Well Cave

6.4.1 Trench 4 was targeted on the presumed location of the supposed 'Well'. This located the well structure – a roughly circular cut in the natural sandstone bedrock. This showed signs of having been artificially modified or created. It contained three fills, the earliest of which was undated. This was then sealed by a deposit containing a large number of sub rounded beach worn pebbles, which was dated to the post-medieval period. This was in turn sealed by a modern layer. Of these, only the earliest is likely to be functionally related to the 'well', and no artefacts were recovered to shed light on its function.

6.4.2 A thick layer of rubble deposited by the collapse of the roof of the central chamber in the 1920s sealed the well. Deposits surrounding the well included

layer 404, a probable surface or compacted series of surfaces, from which two sherds of medieval pottery were recovered. These may point to medieval activity within the cave associated with the well. This sealed an undated layer of inwash, which in turn sealed the natural bedrock.

6.4.3 Trench 4 achieved a number of objectives of the evaluation exercise, it confirmed the presence of the well structure within the cave, fixing its position. Whilst none of the internal deposits to the well could shed light on its origins or original use, medieval pottery recovered from one of the surrounding layers points to medieval use of the cave, presumably associated with the well.

6.4.4 Trench 5 was positioned to investigate the possibility that a passageway once linked this cave with McDuff Castle on the cliff above. Once more a relatively shallow stratigraphic sequence was identified, with medieval pottery recovered from one of the upper layers (layer 502). This sealed a number of undated deposits, including naturally derived inwash deposits. Although no traces of a passageway could be found within the limted extent of the trench the investigation in no way eliminated the possibility that such a passageway did once exist.

6.4.5 These results from these two trenches met some of the objectives identified in the Project design. However, the small area excavated was not sufficient to meet all of the aims in the Project Design. The presence of medieval pottery from layers within these trenches points to some medieval activity in this cave. It is uncertain whether these sherds were residual in the layers from which they were recovered. Both layers were relatively high in the stratigraphic sequence, but this need not be significant, as the cave may have been subject to periodic clearouts. The trenches succeeded in confirming the presence of a feature, presumably that known as a 'Well' and in discounting the possible presence of a passageway accessing the cave from McDuff Castle. The presence of the 'well' within this cave clearly became an important focus of local ritual and folklore, as it appears in a number of antiquarian descriptions of the cave, along with accounts of these rituals

6.5 Trenches outside the Well Cave.

6.5.1 The two trenches excavated outside the entrance to the Well Cave met with mixed results. Trench 6, which lay towards the base of slope beneath the cave, was excavated to a depth of 2.45m. Although this revealed a deep sequence of deposits, none of which appeared to be earlier than the post-medieval period.

6.5.2 Trench 7, however, revealed potentially important evidence for prehistoric activity and exploitation of the area. The modern upper stratigraphy sealed an episode of cliff collapse, which sealed an *in situ* midden deposit, which contained small quantities of shell and animal bone. A series of ard-marks were identified cutting the lowest layer exposed, a yellowish silty-sand deposit. The form of these suggests that they are likely to be prehistoric in date. Charcoal and hazelnut shells were recovered from the fills of these ard-marks.

6.5.3 The East Wemyss coastline has changed substantially over the millennia, through erosion and sea level rise. Thus, it is likely that cultivation probably extended much further than it does at present and towards the sea (Chris Stevens pers. comm.). The discovery and dating these ard marks is considered of some importance to further our understanding the earlier history of the Site. If these ard-marks do indeed date, as suspected, to the Neolithic or Bronze Age period, they would add significantly to our knowledge of early agriculture in the region. Potentially this could point to a phase of agricultural activity on the coastal plain, possibly associated with a contemporary occupation of the caves, which is suggested by the cup marks found in some of the caves. Accordingly, it is proposed that a sample of the charcoal or hazelnut shells recovered from the fills of these marks be submitted for radiocarbon dating.

6.6 The Sliding Cave

6.6.1 A single trench was excavated within the Sliding Cave in order to define the nature and date of human activity within this cave, and also to establish whether further Pictish carvings may be identified within the cave.

6.6.2 Excavation of Trench 8 did indeed reveal another carving – in the form of two sinuous lines (?serpents) - on the northern wall of the cave (**Figure 5**). This adds to the series of Pictish engravings already known from this cave, which included a comb case – on the west wall - and a mirror on the east wall. Unfortunately, whilst the methodology employed in producing this carving is similar to that recorded from the Pictish carvings within this cave, its form is not clearly diagnostically Pictish. In the light of this, it cannot be considered certainly to be a Pictish carving. There are a number of carvings within the caves from post-Pictish periods, whilst the possibility of prehistoric carvings from the caves cannot be discounted either (Anna Ritchie pers. comm.).

6.6.3 A good stratigraphic sequence was recovered from within this trench, with the upper layer (801) sealing a well sorted deposit (802). This in turn sealed a high energy layer, which contained some shell and animal bone (803). It was the removal of this layer which revealed the new Pictish carvings, and which sealed a probable floor surface of beaten or trampled clay (804). This in turn sealed a stone pavement built of sub-rounded red sandstone boulders (805). Rather than disturb further *in situ* archaeological features or structures.

6.6.4 Charred barley grains recovered from the sample taken from layer 804, the beaten clay floor, were submitted for radiocarbon dating, and one was selected for single entity AMS radiocarbon dating. The resulting date indicates a date of AD 240 – 400 for this deposit. This occupation and the crop processing associated with it point to occupation of this cave in the Middle Iron Age period. No corresponding evidence was recovered for an occupation of this cave within the Pictish period during this excavation, and there was no stratigraphic association between the occupation deposits recorded and the new carving.

6.7 Coastal Section

6.7.1 The final trench, trench 9, involved cutting back a section of the eroding coastline. The upper layers in this stratigraphic sequence (902 – 5) were colluvial in origin. These sealed two layers of midden derived material. These two layers (906 and 907) did not appear to be *in situ*, and were also probably washed downhill, possibly from similar midden material as identified in trench 7. Three further layers of beach inwash material (911, 912 and 913) overlay the degraded sandstone bedrock (914). Cutting through these was the pit for a upright sandstone block. Once again this may date to the Late Neolithic or Bronze Age period, although no supportive dating was recovered

6.7.2 The project was also able to determine that in many cases these caves have been subject to systematic clean-outs (hence resulting in disturbed and truncated stratigraphy) certainly after Pictish times. In some instances, the sea itself may have scoured the inside of the caves, during particularly high tides and/or floods.

6.7.3 The project demonstrated that in the less easily accessible caves (such as in the Sliding Cave) that it maybe possible to identify evidence of well preserved and undisturbed sequences of cave deposits, perhaps even dating back to prehistoric periods.

7 SUMMARY AND RECOMMENDATIONS FOR FURTHER WORK.

7.1.1 This post-excavation assessment has established that the archaeological evaluation undertaken by Time Team has revealed evidence with the potential to make an important contribution to our understanding of the history of human exploitation of the Wemyss Caves and their environs.

7.1.2 In view of the significance of these results, it is recommended that a programme of further analysis be undertaken with a view to publication of the results of the evaluation in the Scottish Archaeological Journal or the Tayside and Fife Archaeological Journal. The following recommendations are proposed for the publication of the site finds and environmental data.

7.1.3 The site data contained within this assessment and data structure report should be used to form the body of the report. The publication should contain a background to the project, a summary of the principle findings and a consideration of these against the wider evidence for activity in the region. Plans, sections and photographs may be used to provide illustrative accompaniment to the text as appropriate.

7.1.4 The finds assemblage is relatively small. The only material types to occur in any numbers were metal objects associated with the post-medieval metalworking on the site and a number of animal bones. Neither of these assemblages is considered worthy of further analysis, nor is the small pottery assemblage recovered.

7.1.5 There are few conservation requirements for long-term storage. The metal objects have been X- radiographed as a basic record, and to aid identification, have been stabilised in the short term by storage in an airtight container with a drying agent (silica gel). The iron objects are not considered to be of sufficient intrinsic interest to warrant further conservation treatment.

7.1.6 It is recommended that further analysis be undertaken on the charred plant assemblage recovered from sample five (layer 824). This layer has been radiocarbon dated the middle Iron Age (AD 240 -400), and represents the first known evidence for occupation of this date in the caves at Wemyss. Detailed analysis of the charred plant remains and any charcoal recovered as the potential to further our understanding of the land use prevalent when these cave deposits were forming.

7.1.7 It is also proposed to submit a further sample for single entity AMS radiocarbon dating. Sufficient identifiable twig charcoal has been recovered from soil samples taken from the fills of the prehistoric ard-marks in trench 7. Such ard-marks are rare, and of obtaining a date for them should be regarded as a priority. Potentially these are likely to be prehistoric in date,.

7.1.8 Copies of this report will be submitted To Historic Scotland, the National Monuments Record of Scotland and the Council for Scottish Archaeology. A brief summary of this report has been submitted to *Discovery and Excavationin Scotland 2004*.

8 THE ARCHIVE

8.1.1 The archive, which includes all artefacts, written, drawn and photographic records relating directly to the investigation is undertaken, is currently held at the offices of Wessex Archaeology under the site code **WMS 04** and Wessex Archaeology project No 55754. The paper archive is contained in one lever arch file. It is intended that, in accordance with the wishes of the Treasure Trove Advisory Panel Secretariat, the excavated material and records will eventually be deposited and curated by The National Museum of Scotland or by a suitable local museum. The paper archive will be curated by Royal Commission on Ancient and Historical Monuments and Constructions of Scotland.

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APPENDIX 1. SITE CONTEXT SUMMARY

TRENCH 1 Jonathan's Cave. Dimensions: 2 x 2 m

Context	Description	Depth
101	Disturbance layer . Grey black silty sand with modern nails.	0-0.10 m
102	Silting event within cave	0.10-0.33 m
103	Natural sandstone bedrock	0.33m +
104	**Possible cut. Possible cup mark in floor of cave.**	**0.33-0.36m**

TRENCH 2 Jonathan's Cave Dimensions: 2 x 2m

Context	Description	Depth
201	Trample horizon	0-0.10 m
202	Silty layer	0.10-0.27 m
203	Burnt lens with sandstone rubble	0.27-0.30 m
204	Sandstone rubble horizon	0.12-0.25 m
205	Talisk cone material – inwash and collapse from cave	0.25-0.48 m
206	Sandy layer	0.48-1.28 m
207	Stone rubble infill	1.28-1.70 m
208	Charcoal layer	0.48-0.50m
209	Possible hearth deposit	0.10-0.30 m
210	Cobbled surface	1.70 m+
211	Midden like deposit	1.70-2.55m
212	**Post hole cut**	**2.55-2.65m**
213	**Post hole cut**	**2.55-2.65m**
214	**Crescent shaped cut**	**2.55-2.63m**
215	Natural sandstone bedrock	2.55m+

A decision was made not to open Trench 3

TRENCH 4 Well Cave Dimensions: 2 x 2m

Context	Description	Depth
401	Sandstone rubble collapse	0-0.20m
402	Upper fill of 403	0.2-0.60m
403	**Cut of well structure**	**-**
404	Compacted surface	0.2-0.55m
405	Central fill of 403	0.4-0.95m
406	Lower fill of 403	0.95-1.3m
407	Stone setting in 403	-
408	Rubble and pebble layer	0.2-0.23m
409	Natural sandstone bedrock	0.55m+

TRENCH 5 Well Cave Dimensions: 2.2 x 2.2m

Context	Description	Depth
501	Trample and disturbed layer	0-0.14m
502	Inwash and sandstone collapse deposit	0.14-0.40m
503	Clay deposit	0.40m-0.50m
504	Rubble collapse – equivalent to 501 but in E part of trench	0-0.30m
505	Clay lens similar to 503	0.10-0.25m
506	Loose coarse sand and rounded cobble layer	0.50-0.60m
507	Friable coarse sand layer	0-0.20m
508	Natural sandstone bedrock	0.60m+

TRENCH 6 Outside Well Cave **Dimensions:** 2.85 x 2.00m

Context	Description	Depth
601	Modern topsoil horizon	0-0.75 m
602	Made ground dump layer	
603	Garden loam material – also made ground	
604	Inwash beach deposit	
605	Dark brown loam layer	

TRENCH 7 Entrance to Well Cave **Dimensions:** 4.5 x 2.2m

Context	Description	Depth
701	Modern topsoil horizon	0-0.10 m
702	Made ground of Victorian date	0.10-0.80 m
703	Collapse of sandstone blocks	0.80-1.60 m
704	Upper midden deposit	1.60-1.80 m
705	Lower midden deposit	1.80-2.20 m
706	Sandy deposit cut by criss-cross ard-marks	2.20 m+
707	**Cut of ard-marks**	**2.20-2.25m**
708	Fill of ard-marks	2.20-2.25m

TRENCH 8 Sloping Cave **Dimensions:** 2 x 1.2m

Context	Description	Depth
801	Disturbed trample deposit	0-0.10 m
802	Laminated deposit	0.10-0.38 m
803	Roof collapse and inwash beach deposits	0.38-0.55m
804	Occupation/floor level	0.58-0.63m
805	Possible paved flooring	0.63m+

TRENCH 9 Coastal Section **Dimensions:** 8.0 m long

Context	Description	Depth
901	Modern make-up layer/ path	0-0.10 m
902	Degraded red sandstone colluvium	0-0.20 m
903	Dark brown colluvium	0.20-0.32 m
904	Same as 903 but darker and in N part of section	0.32-0.52 m
905	Red band of colluvium	0-0.29 m
906	Thin band of midden derived material	0-0.55 m
907	Lower thicker band of inwashed midden derived material	0.6-0.70 m
908	**Modern pit cut**	**0-0.36 m**
909	Fill of 908	0-0.36 m
910	Silty clay deposit	0.3-0.42 m
911	Fine silty well-sorted deposit	0.6-1.00 m
912	Beach inwash deposit	1.00 m+
913	Redeposited shell deposit with bones	0.8-
914	Degraded bedrock	1.27m+
915	**Post hole cut for monolith/ stone plinth 917**	**1.00-1.30m**
916	Fill of 915	1.00-1.30m
917	Stone plinth	-

APPENDIX 2: GRAPHICS SUMMARY

Drawing Number	Sheet Size	Trench	Scale	Brief Description
101	A4	1	1:20	Plan of Trench 1
102	A4	1	1:10	NW section of Trench 1
201A	A1	2	1:10	N facing section of Trench 2
201B	A1	2	1:10	E facing section of Trench 2
201C	A1	2	1:20	Plan of Trench 2
401	A4	4	1:20	Plan of Trench 4
402	A4	4	1:10	Profile through well 403
501	A4	5	1:20	Plan of Trench 5
502	A4	5	1:10	N facing section of Trench 5
503	A4	5	1:20	Final plan of Trench 5
701	A4	7	1:20	Plan of outline of Trench 7
801	A4	8	1:20	Plan of Trench 8
802A	A3	8	1:20	Final plan of Trench 8
802B	A3	8	1:10	E facing section of Trench 8
901	A1	9	1:10	Section of Trench 9

APPENDIX 3: PHOTOGRAPHIC SUMMARY

NB Because of the darkened conditions of the caves, only digital cameras were used

Digital JPEG Number	Trench	Image
7947	2	General working shots
7948	1	Working shot
7949	NA	Inside Well Cave
7950	NA	Chamber of Well cave
7951	NA	Outside Well Cave
7952	1	Post excavation shot
7953	1	NE facing section
7954	1	SE facing section
7955	1	Possible cupmark in bedrock
7956	1	Possible cupmark in bedrock
7957	1	Possible cupmark in bedrock
7958	1	Possible cupmark in bedrock
7959	1	Possible cupmark in bedrock
7960	1	Possible cupmark in bedrock
7961	1	Possible cupmark in bedrock
7962	NA	General site shot
7963	NA	General site shot
7964	NA	Outside Jonathan's Cave
7965	NA	Outside Jonathan's Cave
7966	8	Sliding Cave rock carving
7967	8	Sliding Cave rock carving
7968	8	Sliding Cave General shot
7969	9	Eroding coastal section
7970	5	Clay lenses 503 and 505
7971	5	Clay lenses 503 and 505
7972	2	Deposit 209
7973	2	Nails and deposit 209
7974	2	Nails and deposit 209
7975	NA	General site photo
7976	4	Well 403 with fill
7977	4	Well 403 with fill
7978	4	Well 403 with fill
7979	4	Well 403 with fill
7980	4	Well 403 with fill
7981	9	Section
7982	9	Section
7983	9	Section Line 901
7984	9	Section Line 901
7985	2	Midden 211 and post holes
7986	2	Midden 211 and post holes
7987	2	Cobbling 210
7988	2	Cobbling 210

7989	NA	General Site shot
7990	NA	General Site shot
7991	6	Midden 604
7992	6	Midden 604
7993	6	Midden 604
7994	NA	Void shot
7995	4	Post excavation with trample
7996	4	Post excavation with trample
7997	4	Post excavation with trample
7998	4	Well in Trench 4
7999	4	Well in Trench 4
8000	5	Post excavation shot
8001	5	Post excavation shot
8002	5	Post excavation shot
8003	5	Section in Trench 5
8004	5	Section in Trench 5
8005	9	Coastal Section
8006	9	Coastal Section
8007	4	Well 403
8008	4	Well 403
8009	4	Trample deposits 404
8010	4	Trample deposits 404
8011	4	Trample deposits 404
8012	2	N facing section
8013	2	N facing section
8014	2	Post holes 212 and 213
8015	2	Post hole 214
8016	2	Post excavation shot

APPENDIX 4. SMALL FINDS BY CONTEXT

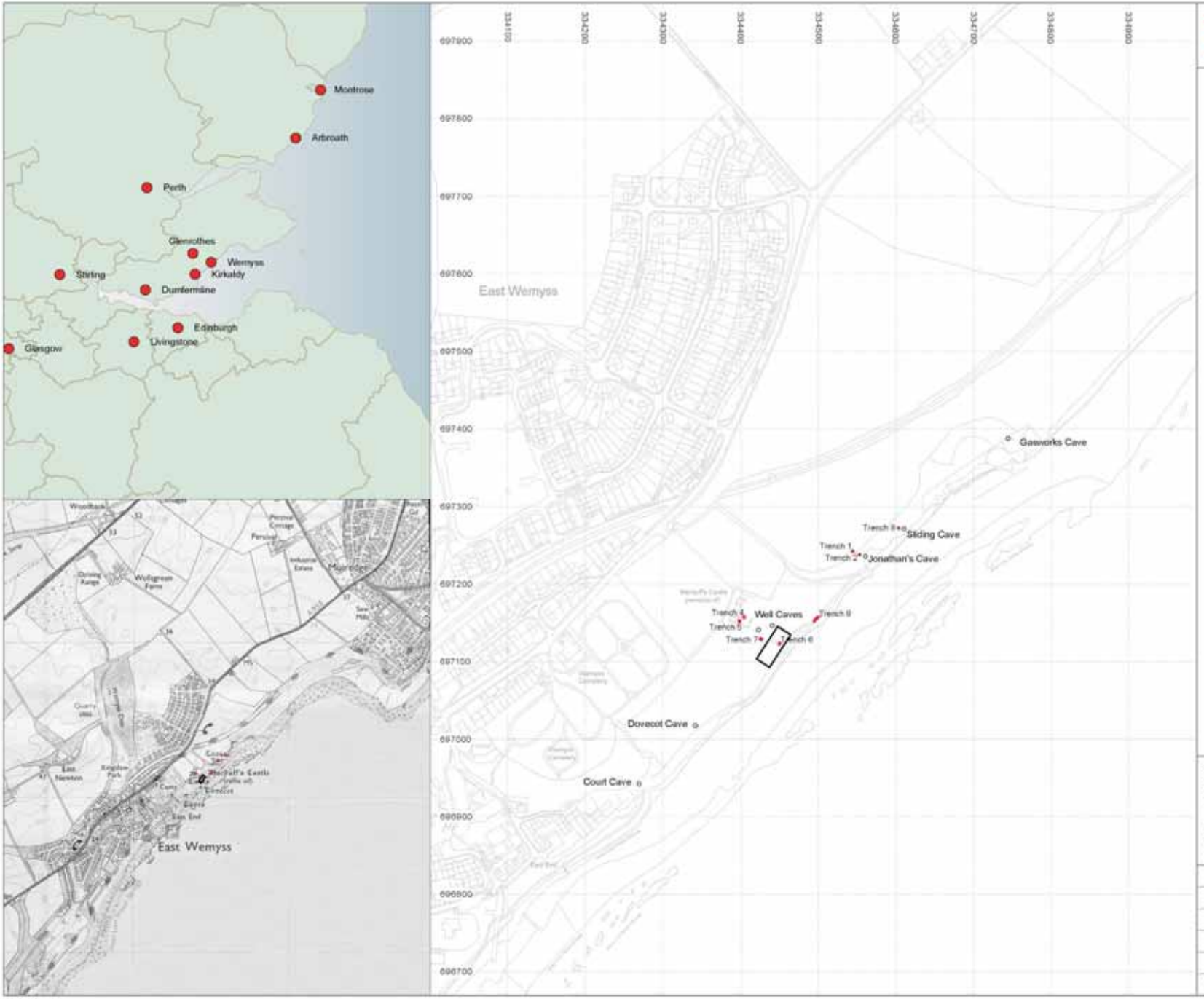
Obj. No.	Context	Material Type	No.	Description	X-ray
1	0	Cu Alloy	1	Copper alloy wire ring	9710
2	907	Cu Alloy	2	Folded cu alloy strip or sheet	9710
3	201	Cu Alloy	1	Post-medieval coin – halfpenny, 2 cartridge cases; 1 folded sheet (flattened tube?)	9710
4	602	Lead	1	Small repair plug	-
5	101	Cu Alloy	1	Post-medieval coin - halfpenny	-

APPENDIX 5. ALL FINDS BY CONTEXT.

Tr	Context	Context Type	Material	No.	Wt (g)	Comments
	0	layer	Cu Alloy	1	1	Obj.No. 1 (wire bent into ring)
1	101	layer	Iron	21	825	nails + other structural (post-med)
1	101	layer	Post-med pottery	7	85	1 bone china; 6 refined whiteware
1	101	layer	Clay pipe	1	1	stem (v worn)
1	101	layer	Animal bone	4	65	
1	101	layer	Glass	4	306	modern bottle/jar
1	102	layer	Animal bone	3	33	
1	102	layer	Post-med pottery	1	9	coarse redware (glazed)
2	201	layer	Cu Alloy	5	26	including Obj.No. 3 (post-med coin); 2 cartridge cases; 1 folded sheet (flattened tube?)
2	201	layer	Animal bone	8	79	
2	201	layer	Shell	5	28	limpet, periwinkle
2	201	layer	Clay pipe	3	14	1 dec stem/spur; 1 plain bowl frag, 1 dec bowl frag
2	201	layer	Glass	12	213	modern bottle/jar
2	201	layer	Post-med pottery	5	31	1 bone china, 1 refined whiteware; 3 mod stoneware
2	201	layer	Slag	1	57	
2	201	layer	Iron	17	928	nails + other structural (post-med)
2	207	layer	Animal bone	5	76	
2	207	layer	Stone	1	194	quartz pebble fragment, not obviously worked
2	208	layer	Animal bone	12	258	
2	208	layer	Shell	1	13	
2	209	layer	Iron	14	1636	nails + other structural (post-med)
4	402	layer	Glass	1	400	modern green bottle
4	402	layer	Animal bone	2	251	
4	404	layer	Animal bone	9	187	
4	404	layer	Medieval pottery	2	37	glazed whitewares; 1 jug handle
4	404	layer	Glass	1	7	modern bottle/jar

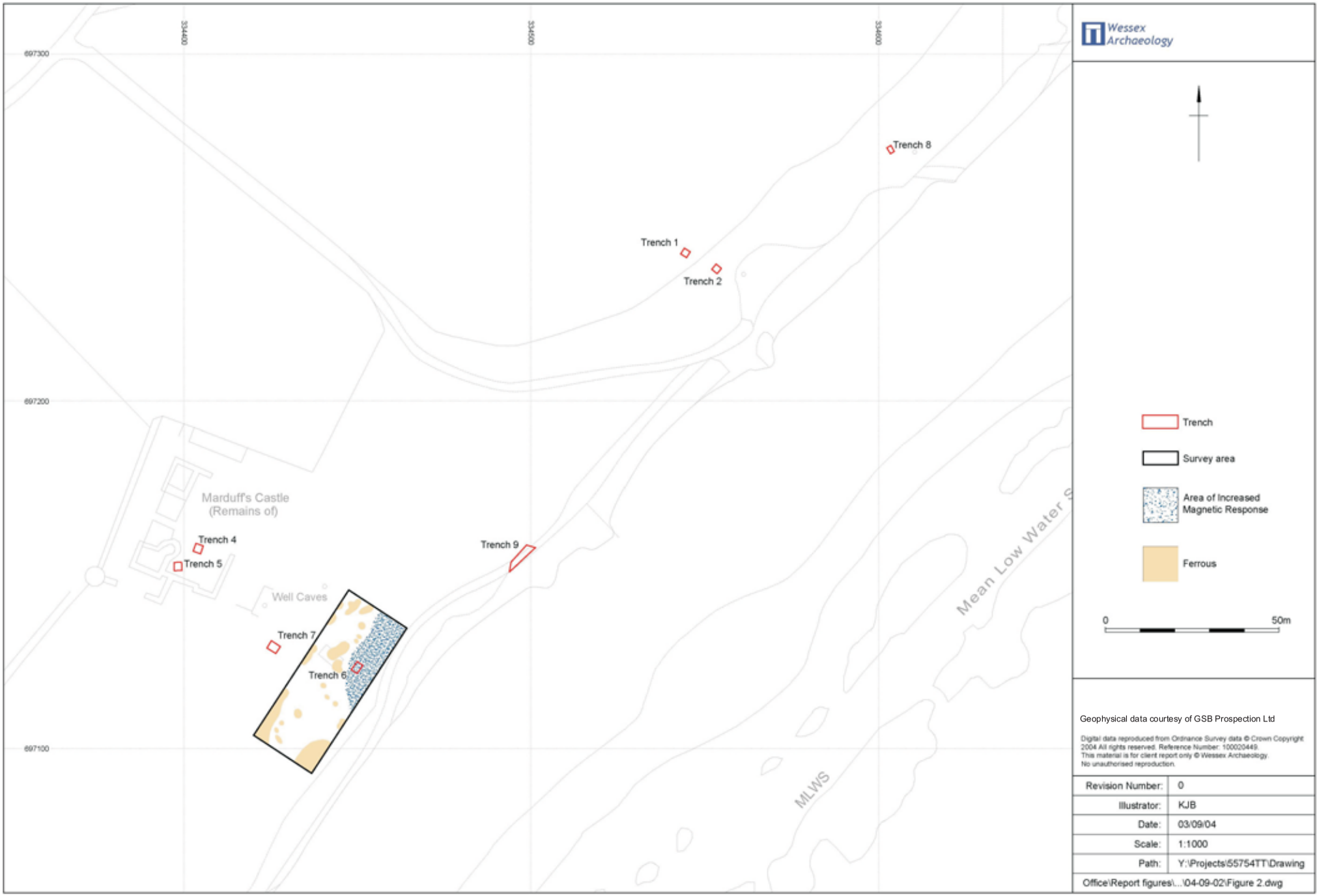
4	404	layer	Post-med pottery	1	5	redware (glazed)
4	405	layer	Animal bone	5	98	
4	405	layer	Clay pipe	1	2	stem
4	405	layer	Cu Alloy	1	7	O. No 5. post-med coin (halfpenny)
4	405	layer	Glass	2	15	modern bottle/jar
4	405	layer	Stone	4	24	micaceous sandstone tile frags
4	408	layer	Animal bone	5	130	
5	502	layer	Shell	1	19	oyster
5	502	layer	Glass	2	9	modern bottle/jar
5	502	layer	Animal bone	2	5	
5	502	layer	Medieval pottery	4	110	2 glazed (1 jug handle, 1 slip dec)
5	506	layer	Animal bone	5	44	
5	506	layer	Shell	4	7	periwinkle
6	602	layer	Lead	1	5	Obj.No. 4 (repair plug)
6	602	layer	Stone	1	63	micaceous sandstone tile (nail hole)
6	604	layer	Animal bone	30	274	
6	604	layer	Shell	30	70	including Sample .No. 2
6	604	layer	Clay pipe	1	3	stem
7	704	layer	Animal bone	40	408	including Sample .No. 7
7	704	layer	Shell	16	45	including Sample .No. 7
7	705	layer	Animal bone	4	65	
7	705	layer	Shell	13	41	including Sample .No. 8
8	801	layer	Iron	1	23	nail
8	801	layer	Cu Alloy	1	2	folded sheet
8	801	layer	Animal bone	17	27	
8	801	layer	Shell	1	2	razor shell
8	801	layer	Glass	1	38	modern bottle
8	801	layer	Post-med pottery	1	3	bone china
8	803	layer	Animal bone	37	643	
8	803	layer	Shell	1	12	whelk? (v worn)
8	804	layer	Animal bone	142	208	including Sample .No. 5
9	906	layer	Animal bone	10	23	

9	906	layer	Shell	8	42	oyster, limpet, periwinkle
9	907	layer	Cu Alloy	1	1	Obj.No. 2 (strip, folded in half)
9	907	layer	Shell	17	85	periwinkle
9	907	layer	Animal bone	31	362	
9	911	layer	Animal bone	14	157	
9	912	layer	Animal bone	1	36	
9	912	layer	Shell	56	94	Sample .No. 3
9	913	layer	Animal bone	31	270	including Sample .No. 4
9	913	layer	Shell	3	33	whelk, periwinkle, limpet
9	TR9 U/S	layer	Animal bone	12	97	
9	TR9 U/S	layer	CBM	1	19	post-med roof tile (v abraded)
9	TR9 U/S	layer	Glass	2	32	modern window
9	TR9 U/S	layer	Shell	72	191	limpet, periwinkle, bivalve



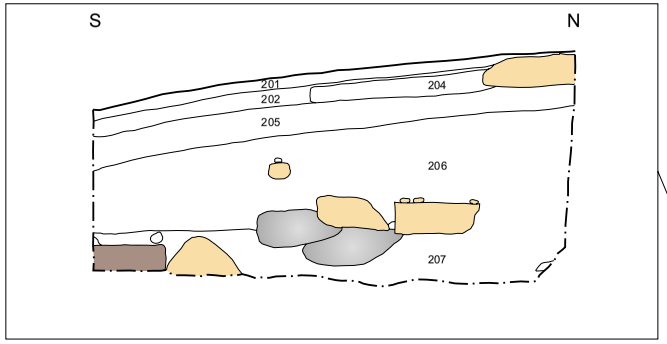
Site location

Figure 1

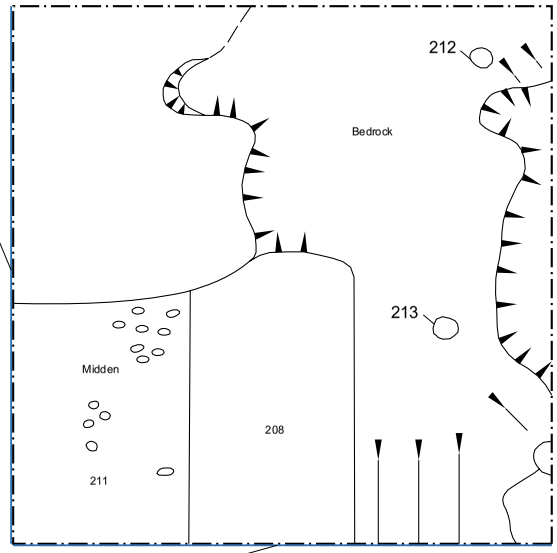


Geophysical survey and trench location map

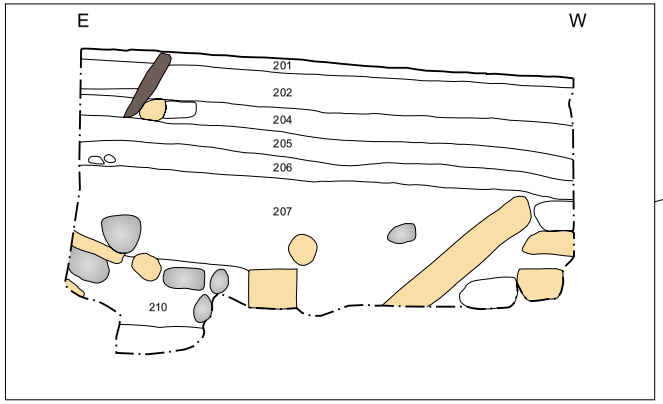
Figure 2



East facing section



Post holes in Trench 2



North facing section

Section
Wood
Mudstone
Sandstone
Rounded boulders

0 1m

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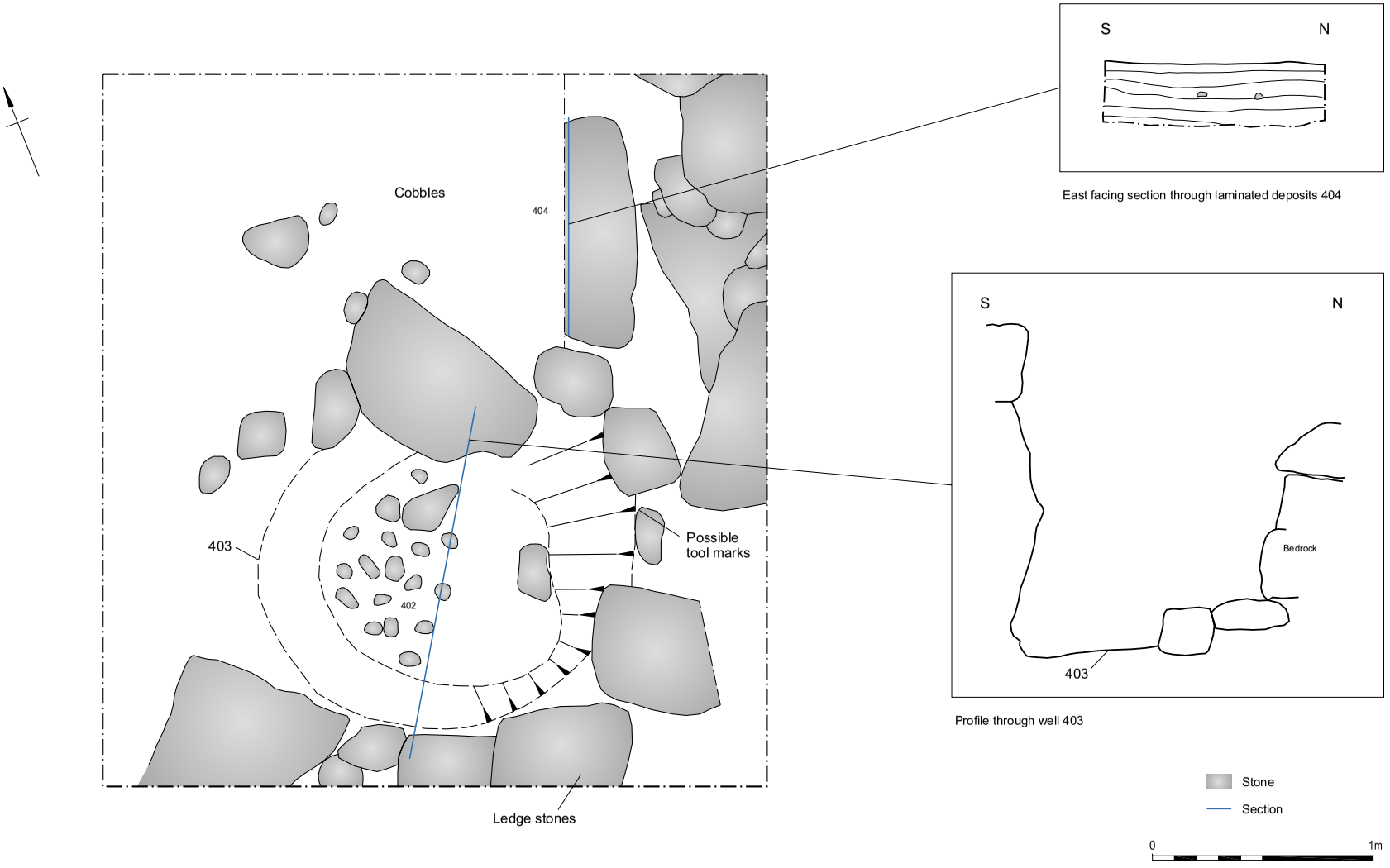
Trench 2 plan and section

Figure 3



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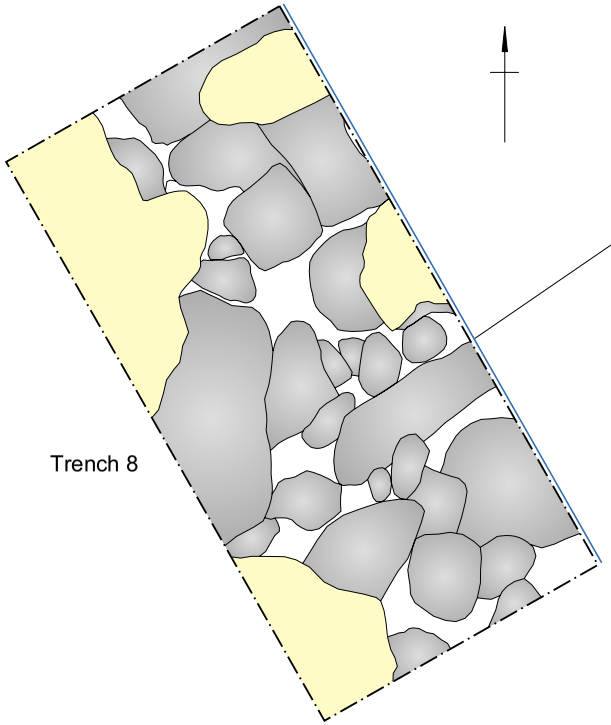
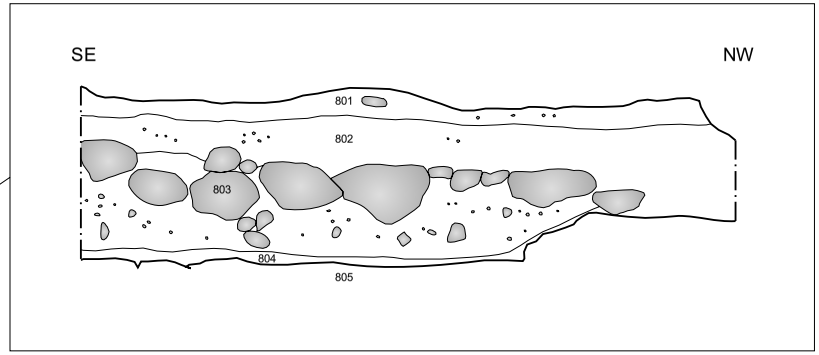
Trench 4 plan and sections

Figure 4





South west facing section of Trench 8

New Pictish carvings (snake) in Trench 8

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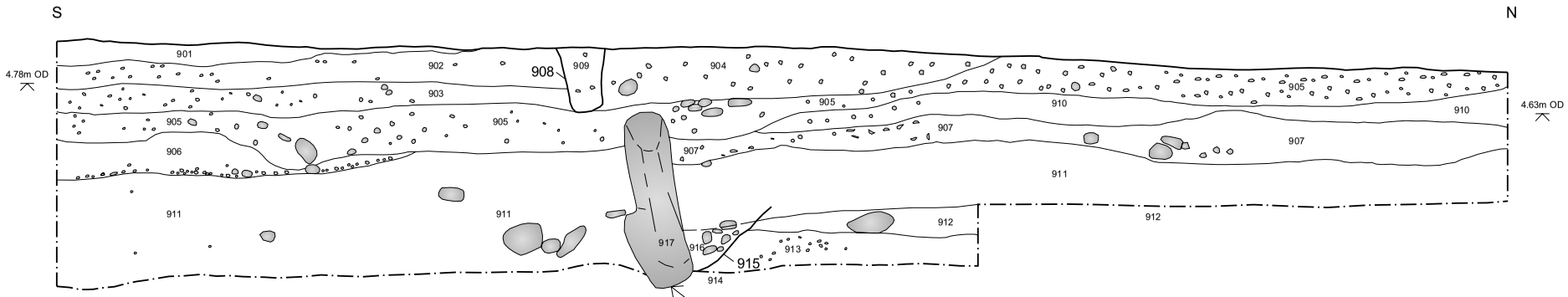
Plan and section of Trench 5

Figure 5



Coastal section of Trench 9

Stone

0 1m

Standing stone in Trench 9

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Trench 9 section

Figure 6

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