South Wales Gas Pipeline Project
Site 201
Land North of Gwempa
Llangyndeyrn
Carmarthenshire
Archaeological Watching Brief

for
Rhead Group
on behalf of
National Grid

CA Project: 9150
CA Report: 13341
Event: DAT108837

June 2013
South Wales Gas Pipeline Project
Site 201

Archaeological Watching Brief

CA Project: 9150
CA Report: 13341
Event: DAT102846

prepared by
Sarah Cobain, Environmental Officer
and
Jonathan Hart, Senior Publications Officer
20 June 2013

date

checked by
Karen E Walker, Post-Excavation Manager
4 July 2013

date

approved by
Martin Watts Project Director, Head of Publications

signed

date
4 July 2013

issue
01

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Cirencester
Building 11
Kemble Enterprise Park
Kemble, Cirencester
Gloucestershire, GL7 6BQ
t. 01285 771022
t. 01285 771033

Milton Keynes
Unit 4
Cromwell Business Centre
Howard Way, Newport Pagnell
MK16 9QS
t. 01908 218320

Andover
Office 49
Basepoint Business Centre
Caxton Close, Andover
Hampshire, SP10 3FG
t. 01264 326549

e. enquiries@cotswoldarchaeology.co.uk
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GLOSSARY
CA – Cotswold Archaeology
CAP – Cambrian Archaeological Projects
CPAT – Clwyd Powys Archaeological Trust
DAT – Dyfed Archaeological Trust
GGAT - Glamorgan Gwent Archaeological Trust
FTP – Felindre to Brecon gas pipeline
HER – Historic Environment Record
MHA – Milford Haven to Aberdulais gas pipeline
NAL – Network Archaeology Ltd
NLMJV – Nacap Land & Marine Joint Venture
UPD – Updated Project Design
SUMMARY

Project Name: South Wales Gas Pipeline Project
Location: Site 201, Land North of Gwempa, Llangyndeyrn, Carmarthenshire
NGR: SN 4410 1229
Type: Watching Brief
Date: 9 January 2006
Location of Archive: To be deposited with RCAHMW (original paper archive) and Carmarthenshire Museum (material archive and digital copy of paper archive; accession number CAASG 2008.0282)
Site Code: MHA06

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with construction of gas pipelines (part of the South Wales high pressure gas pipeline scheme) between Milford Haven and Aberdulais, and Felindre and Brecon, which were conducted between 2005 and 2007.

A single pit was identified. It contained an assemblage of charred cereals suggestive of a post-Roman date and this was confirmed by two statistically consistent radiocarbon determinations from charred charred cereals within the fill (cal. AD 650–770 and cal. AD 670–890; SUERC 57307 and 57308). The function of the pit is not known, although it had been used, or re-used, for the disposal of charred cereals and a small quantity of other burnt material.
1. INTRODUCTION

1.1 NACAP Land and Marine Joint Venture (NLMJV), on behalf of National Grid, commissioned RSK Environment (part of the RSK Group) to manage the archaeological works (non-invasive surveys, desk based assessment, evaluation, watching brief, and open area excavation) on a 216km-long section of pipeline from Milford Haven (Pembrokeshire) to Brecon (in Powys). The high pressure gas pipeline (part of the 316km-long pipeline route from Milford Haven to Tirley in Gloucestershire) was required to reinforce the gas transmission network. The archaeological work performed in advance of this pipeline was undertaken in a number of sections by a number of archaeological companies. The westernmost section of 122km, from Milford Haven to Aberdulais, was investigated by Cotswold Archaeology (CA; then Cotswold Archaeological Trust) during 2005–2007 with some additional excavation work carried out by Cambrian Archaeological Projects (CAP). The section of 89km, from Felindre to Brecon was investigated by CA during 2006–2007 and CAP during 2007. Assessment reports on the works were completed in January 2012 (NLM 2012a, 2012b) and the current reporting stage was commissioned in February 2013.

1.2 In January 2006 CA carried out an archaeological watching brief at Site 201, Land North of Gwempa, Llangyndeyrn, Carmarthenshire (centred on NGR: SN 4410 1229; Fig. 1). The objective of the watching brief was to record all archaeological remains exposed during the pipeline construction.

1.3 The watching brief was carried out in accordance with professional codes, standards and guidance documents (EH 1991; IfA 1999a, 1999b, 2001a, 2001b and IfA Wales 2008). The methodologies were laid out in an Archaeological Management Plan (AMP) (RSK 2006) and associated Written Statements of Investigation (WSIs) and Method Statements.

The site

1.4 The site is located at 90m AOD, within a field on an east-facing valley side above the Gwendraeth Fach (Fig. 1). The underlying solid geology of the area is mapped as the Senni Sandstone Formation of the Devonian Period, overlain by superficial Quaternary glaciofluvial deposits of Sand and Gravel (BGS 2013).
**Archaeological background**

1.5 No archaeological remains were identified within the site during the preliminary *Archaeology and Heritage Survey* (CA 2005). Within the wider vicinity, a Scheduled standing stone is recorded 1.1km east of the site (PRN 1702) and a Scheduled motte lies adjacent to the Gwendraeth Fach, 500m north-west of the site (PRN 1680). Site 290, 750m to the west of Site 201, included the stone foundations of a rectangular building (CA 2013), and post-medieval and modern dwellings are recorded within 500m of the site (PRNs 6552, 23615 and 36299).

**Archaeological objectives**

1.6 The objectives of the archaeological works were:-

- to monitor groundworks, and to identify, investigate and record all significant buried archaeological deposits revealed on the site during the course of the development groundworks; and
- at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.

**Methodology**

1.7 The fieldwork followed the methodology set out within the *WSI* (NLM 2006). An archaeologist was present during intrusive groundworks comprising stripping of the pipeline easement to the natural substrate (Fig. 1).

1.8 The post-excavation work was undertaken following the production of the UPD (GA 2012) and included re-examination of the original site records. Finds and environmental evidence was taken from the assessment reports (NLM 2012a) except where the UPD recommended further work, in which case the updated reports were used. The archaeological background to the site was assessed using the following resources:-

- the *Archaeology and Heritage Survey* which was undertaken in advance of the pipeline construction and which examined a 1km-wide corridor centred on the pipeline centre line, including the then existing HER record (CA 2005);
- Dyfed Archaeological Trust HER data (received July 2014); and
- other online resources, such as Google Earth and Ordnance Survey maps available at [http://www.old-maps.co.uk/index.html](http://www.old-maps.co.uk/index.html).
All monuments thus identified that were relevant to the site were taken into account when considering the results of the fieldwork.

1.9 The archive and artefacts from the watching brief are currently held by CA at their offices in Kemble. The original paper archive will be deposited with the RCAHMW and a digital copy of the paper archive will be deposited with Carmarthenshire Museum under accession number CAASG 2008.0282.

2. RESULTS (FIG. 2)

2.1 This section provides an overview of the watching brief results; detailed summaries of the recorded contexts and environmental samples (palaeoenvironmental evidence) are to be found in Appendices A and B.

2.2 The natural geological substrate, comprising red-brown silty clay, was cut by a single pit containing burnt material. Pit 20103 was oval in plan, with a U-shaped profile and was 3.2m long, 1.1m wide and 0.4m deep. It contained a single silty clay fill with charcoal and limestone fragments. Samples yielded a small amount of unidentifiable burnt bone as well as carbonised cereals including largely oats, with traces of hulled barley and possibly free-threshing wheat, as well as fuelwood charcoal, dominated by oak and hazel. Radiocarbon dating of charred grains from the fill returned statistically consistent early medieval dates of cal AD 650–770 and cal AD 670–890 (SUERC 57307 and 57308; Appendix C)

Discussion

2.3 The cereal assemblage from the pit is indicative of a post-Roman date, which was confirmed by the early medieval date ranges obtained from samples of the burnt grains. The cereals had been fully processed, ready for consumption and probably represent accidentally burnt ingredients. The function of the pit is unknown, although it is suggestive of a domestic context and a secondary use for waste disposal seems likely.
3. PROJECT TEAM

Fieldwork was undertaken by Sam Thorogood. This report was written by Sarah Cobain and Jonathan Hart with illustrations prepared by Daniel Bashford. The archive has been compiled by Jonathan Hart and prepared for deposition by Hazel O’Neill. The fieldwork was managed for CA by Clifford Bateman and the post-excavation work was managed for CA by Karen Walker.
4. REFERENCES


CA (Cotswold Archaeology) 2005 Milford Haven to Aberdulais Gas Pipeline: Archaeology and Heritage Survey. CA typescript report 04147

CA (Cotswold Archaeology) 2013 South Wales Pipeline Project, Site 290, Land North-West of Gwempa, Llangyndeyrn, Carmarthenshire. CA report 13171

EH (English Heritage) 1991 The Management of Archaeological Projects 2


GA (Groundwork Archaeology) 2012 Milford Haven to Aberdulais and Felindre to Brecon High Pressure Gas Pipelines: Updated Project Design

Giorgi, J. and Martin, G. 2009 ‘Assessment report for the Archaeobotanical remains from excavations conducted by Cotswold Archaeology’, in NLM 2012a

IfA (Institute for Archaeologists) 1999a Guidelines for Finds Work. IfA, Birmingham

IfA (Institute for Archaeologists) 1999b Standard and Guidance for Finds and Ecofact Studies and Curation. IfA, Reading

IfA (Institute for Archaeologists) 2001a Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials. IfA, Reading

IfA (Institute for Archaeologists) 2001b Standard and Guidance for an Archaeological Watching Brief

IfA Wales (Institute for Archaeologists of Wales/Cymru) 2008 Introducing a Research Framework for the Archaeology of Wales, online resource at http://www.archaeoleg.org.uk/intro.html accessed December 2008

NLM (Nacap Land and Marine) 2006 Milford Haven to Aberdulais Natural Gas Pipeline: Scheme of investigation for a programme of archaeological works

NLM (Nacap Land and Marine) 2012a Milford Haven to Aberdulais High Pressure Gas Pipeline: Archaeology Assessment of Potential for Analysis

NLM (Nacap Land and Marine) 2012b Felindre to Brecon High Pressure Gas Pipeline: Archaeology Assessment of Potential for Analysis

RSK (RSKENSR) 2006 Milford Haven to Aberdulais Natural Gas Pipeline: Archaeological Management Plan. Nacap Land and Marine Final, RSKENSР Environmental Ltd
APPENDIX A: CONTEXT DESCRIPTIONS

<table>
<thead>
<tr>
<th>Context No.</th>
<th>Fill of Context</th>
<th>Description</th>
<th>L (m)</th>
<th>W (m)</th>
<th>Depth (m)</th>
<th>Spot date</th>
</tr>
</thead>
<tbody>
<tr>
<td>20100</td>
<td>Topsoil</td>
<td>Dark red-brown clay silt</td>
<td></td>
<td></td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>20101</td>
<td>Subsoil</td>
<td>Mid red-brown silty clay</td>
<td></td>
<td></td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>20102</td>
<td>Natural</td>
<td>Mid brown-red clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20103</td>
<td>Pit</td>
<td>N/S aligned, oval in plan with a u-shaped profile</td>
<td>3.2</td>
<td>1.1</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>20104</td>
<td>20103 Pit fill</td>
<td>Mid grey-brown silty clay with large limestone fragments and charcoal</td>
<td></td>
<td></td>
<td>0.4</td>
<td>Cal AD 650-770 Cal AD 670-890</td>
</tr>
</tbody>
</table>

APPENDIX B: THE PALAEOENVIRONMENTAL EVIDENCE BY JAMES RACKHAM

Animal or Human Bone
A very small assemblage of five tiny indeterminate burnt bone fragments (0.3g) were recovered from environmental sample 20100 (context 201014) the fill of pit 20103.

Environmental soil samples
A single environmental sample (20100) was taken at this site from the only feature excavated, a pit with a single fill, context 20104, that produced no dateable finds. Samples of oat and barley grain submitted for radiocarbon dating have returned results indicating a 7th to 9th century AD date. Griffiths (below) provides the following comment: ‘Two statistically consistent radiocarbon results were produced on samples of barley and oats from context 20104 (SUERC-57307; SUERC-57308; T’=2.2; T’5%=3.8; df=1). These results could therefore be of the same actual age.’

Table 1 Bulk environmental samples from Site 201

<table>
<thead>
<tr>
<th>sample no</th>
<th>context no</th>
<th>feature</th>
<th>description</th>
<th>processed wt kg</th>
<th>processed vol l</th>
<th>date</th>
</tr>
</thead>
<tbody>
<tr>
<td>20100</td>
<td>20104</td>
<td>20103</td>
<td>Pit fill</td>
<td>13</td>
<td>8</td>
<td>650-770 cal AD (oats) 670-890 cal AD (barley)</td>
</tr>
</tbody>
</table>

The sample was processed in the manner described in the assessment report (Giorgi and Martin 2009) with the additional refloating of the dried <2mm sample residues that had been retained whose flot volume is indicated in Table 2 as ‘2nd flot’. This second flot was then sorted for charred macrofossils and the residue re-dried and checked with a magnet to recover any further magnetic material.

Table 2 Data for the environmental sample from Site 201

<table>
<thead>
<tr>
<th>sample no</th>
<th>context no</th>
<th>processed vol l</th>
<th>1st flot vol ml</th>
<th>2nd flot vol</th>
<th>residue wt g</th>
<th>pottery</th>
<th>burnt clay</th>
<th>burnt stone</th>
<th>coal</th>
<th>flint</th>
<th>magnetic</th>
<th>burnt bone</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>20100</td>
<td>20104</td>
<td>8</td>
<td>350</td>
<td>19</td>
<td>nd</td>
<td>E</td>
<td>D</td>
<td>B</td>
<td>D</td>
<td>D</td>
<td>slag?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The archaeological finds from the sample were limited to a little burnt stone, coal, a magnetic component, a little possible slag and five tiny unidentifiable fragments of burnt bone. A relatively large flot of charred plant remains and charcoal (see below) was recovered.

**Charred Plant Remains** (John Giorgi)
The charred plant remains in the sampled fill 20104 of the early medieval oval pit 20103 consisted virtually entirely of poorly preserved and fragmentary cereal remains, largely *Avena* (oat) grains with traces of *Hordeum vulgare* (barley) including both hulled and twisted grains indicative of six-row hulled barley. A short squat rounded grain was tentatively identified as free-threshing wheat (*Triticum aestivum* type). The large number of indeterminate whole grains and fragments are also probably mainly from oat (Table 3).

**Table 3** Site 201. The charred plant remains

<table>
<thead>
<tr>
<th>Cereal grains</th>
<th>Flot</th>
<th>1st</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td>cf. <em>Triticum aestivum</em> type</td>
<td></td>
<td>?free-threshing wheat</td>
<td>1</td>
</tr>
<tr>
<td><em>Hordeum vulgare</em> L.</td>
<td></td>
<td>barley hulled twisted</td>
<td>2</td>
</tr>
<tr>
<td><em>H. vulgare</em> L.</td>
<td></td>
<td>barley hulled indet.</td>
<td>8</td>
</tr>
<tr>
<td><em>H. vulgare</em> L.</td>
<td></td>
<td>barley indet</td>
<td>1</td>
</tr>
<tr>
<td>cf. <em>H. vulgare</em></td>
<td></td>
<td>?barley</td>
<td>8</td>
</tr>
<tr>
<td><em>Avena</em> spp.</td>
<td></td>
<td>oat</td>
<td>211</td>
</tr>
<tr>
<td>cf <em>Avena</em> spp.</td>
<td></td>
<td>?oat</td>
<td>337</td>
</tr>
<tr>
<td><em>Cerealia</em> indet.</td>
<td></td>
<td>Indeterminate grains (estimate)</td>
<td>333</td>
</tr>
<tr>
<td>Cereal chaff</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><em>Avena sativa</em> L.</td>
<td></td>
<td>common oat floret base</td>
<td></td>
</tr>
<tr>
<td><em>Avena</em> spp.</td>
<td></td>
<td>oat awn fragments</td>
<td>++</td>
</tr>
<tr>
<td>Other plants</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><em>Corylus avellana</em> L.</td>
<td></td>
<td>hazel nut shell fragments no/wt</td>
<td>12/&lt;0.1g</td>
</tr>
<tr>
<td>Fabaceae indet.</td>
<td></td>
<td>small rounded legume cotyledons</td>
<td>3</td>
</tr>
<tr>
<td><em>Raphanus raphanistrum</em> L.</td>
<td></td>
<td>wild radish capsule</td>
<td>2</td>
</tr>
<tr>
<td>cf. <em>R. raphanistrum</em></td>
<td></td>
<td>wild radish</td>
<td>2</td>
</tr>
<tr>
<td><em>Lapsana communis</em> L.</td>
<td></td>
<td>nipplewort</td>
<td>1</td>
</tr>
<tr>
<td>indet herbaceous stem fragments</td>
<td></td>
<td>culm nodes/internodes</td>
<td>1</td>
</tr>
<tr>
<td>Charcoal</td>
<td></td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Total nos. of items</td>
<td>921</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>Item density (per litre of processed soil)</td>
<td>135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* abundance rating – ++ =11-50; ++++ = >200 items

It was difficult to reliably establish whether the oat grains were from cultivated species, *Avena sativa* (common oat), *Avena strigosa* (bristle oat) and/or wild oats (*Avena fatua*) because of the virtual absence of chaff, limited to a single floret base of *Avena sativa* and a small number of awn fragments. Morphological characteristics may be used to tentatively separate out the two cultivated and wild species although this was limited by the generally poor preservation of the oat grains. Initial observations show a range in size between just under 4mm to 6mm with most of the grains being at the lower end of this scale while other morphological characteristics suggest the
presence of both common and bristle oat; further study of the well-preserved grains may provide a better indication of the relative proportions of the different oat species.

A small number of Corylus avellana (hazel) nutshell fragments were also recovered, a potential wild food resource frequently found in Wales from the prehistoric period onwards including many of the sites along the route of the Milford Haven to Brecon pipelines. The few wild plant/weed seeds in the sample included evidence for Raphanus raphanistrum (wild radish), which may indicate the use of acidic sandy soils and spring-sown cereals, and a single seed of Lapsana communis (nipplewort), best suited to nutrient rich loams and clay soils.

The presence of oat, hulled barley and possibly free-threshing wheat is consistent with the post-Roman date for this assemblage. The cereal remains represent an almost entirely cleaned deposit of oats ready for consumption/use. The grains may have been accidentally burnt while being dried before storage or milling or accidents during cooking.

Charcoal (Dana Challinor)

The charcoal from pit 20103 was analysed, following standard procedures. The assemblage was dominated by Quercus sp. (oak), with rare fragments of Alnus glutinosa (alder), Corylus avellana (hazel) and Maloideae group (hawthorn, apple, pear, rowan etc.). The condition was soft and crumbly, making fracturing difficult. Both heartwood and sapwood was noted in the oak fragments, along with some (incomplete) roundwood pieces.

<table>
<thead>
<tr>
<th>Feature type</th>
<th>Feature number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quercus sp.</td>
<td>20103</td>
<td>oak</td>
</tr>
<tr>
<td>Context number</td>
<td>20104</td>
<td></td>
</tr>
<tr>
<td>Sample number</td>
<td>20100</td>
<td></td>
</tr>
<tr>
<td>Alnus glutinosa Gaertn.</td>
<td>alder</td>
<td>1</td>
</tr>
<tr>
<td>Corylus avellana L.</td>
<td>hazel</td>
<td>1r</td>
</tr>
<tr>
<td>Alnus/Corylus</td>
<td>alder/hazel</td>
<td>2</td>
</tr>
<tr>
<td>Maloideae</td>
<td>hawthorn group</td>
<td>3</td>
</tr>
<tr>
<td>Indeterminate</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

There charcoal assemblage is typical of many of the sites on the pipeline and indicates the exploitation of oak-hazel woodland, with occasional use of wetland and scrub type habitats, which seems to have been common in all periods. The assemblage probably represents spent fuelwood from domestic waste and/or crop processing debris.

Discussion

Although the sampled deposit is undated by archaeological finds the radiocarbon results clearly indicate that the feature dates to the early medieval period sometime in the 7th to 9th centuries AD. The abundance of oat grains and awns present, a typical post-Roman crop in Wales, is consistent with these results.

The charred grain assemblage reflects a cleaned crop ready for consumption indicating, with the burnt stone and burnt bone, a probable domestic context for the deposit. The complete dominance of oats, although which species is not confirmed, suggests that the sample may derive from a single event in which a quantity of cleaned
oats were accidentally burnt, with the few barley and wheat grains reflecting contamination by previous cereal crops or accidental mixing at some stage during processing, cleaning, storage or discard.

The charcoal assemblage indicates the availability of oak, hazel, alder, and Maloideae (hawthorn type) trees locally, with a dominance of oak, which might reflect availability or preference.

Although the only feature excavated in this area the concentration of charred cereals and the few hazel nutshells implies occupation in the immediate vicinity, perhaps outside the easement. As a cleaned product ready for consumption the grain need not necessarily indicate local cultivation of oats.

The site lies adjacent to a minor road at 90m AOD on a south west facing hillside in a modern landscape of pasture fields, and no other features were observed on the easement on either side of the road crossing. The road follows a small dry valley up the hillside and may lie over a routeway of some antiquity. Several of the sites along the pipeline have proved to be ‘isolated’ with no other archaeological features nearby despite an apparent ‘domestic’ environmental assemblage. These have proved to be related to a variety of periods and could rather than reflecting permanent undiscovered occupation nearby indicate transient campsites being used or created by itinerants moving through the landscape. Alternatively they may be all that survives of farmsteads or settlements so insubstantial that they have left no other evidence on the easement after stripping. It may be appropriate at these sites to review the geophysics for evidence of features beyond the stripped area or not found after stripping.

APPENDIX C: RADIOCARBON DATES BY SEREN GRIFFITHS

For the analysis, radiocarbon measurements were produced on short-life, single entity charred plant remains. Samples with the ‘Beta-’ laboratory code were pretreated as detailed here http://www.radiocarbon.com/. Samples with the ‘SUERC-’ laboratory code were pretreated using an acid-base-acid process. Samples were combusted and graphitized and then dated by Accelerator Mass Spectrometry (AMS). The results are conventional radiocarbon ages, quoted according to the international standard set at the Trondheim Convention.

The results have been calibrated using IntCal13, and OxCal v4.2. The date ranges have been calculated using the maximum intercept method, and have the endpoints rounded outward to 10 years.

Two statistically consistent radiocarbon results were produced on samples of barley and oats from context 20104 from site 201 (SUERC-57307; SUERC-57308; T'=2.2; T'5%=3.8; df=1). These results could therefore be of the same actual age.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Context</th>
<th>Sampled material</th>
<th>Lab. Ref</th>
<th>Measured Age</th>
<th>δ13C</th>
<th>Calibrated date (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>201000</td>
<td>20104</td>
<td>Hordeum sp. grains</td>
<td>SUERC-57307</td>
<td>1243 ± 30</td>
<td>-23.5 ‰</td>
<td>Cal AD 670-890</td>
</tr>
<tr>
<td>201000</td>
<td>20104</td>
<td>Avena sp. grains</td>
<td>SUERC-57308</td>
<td>1306 ± 30</td>
<td>-23.5 ‰</td>
<td>Cal AD 650-770</td>
</tr>
</tbody>
</table>

Dating undertaken by Scottish Universities Environmental Research Centre
Milford Haven to Aberdulais pipeline
Felindre to Brecon pipeline
0-75m contour
75m contour
200m contour
400m contour
600m contour

Site location plan

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Milton Keynes: 01908 218320
Andover: 01264 326549
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

25km
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Site 201

Fig 2 Inset

South Wales Pipeline. Site 201, Land North of Gwempa, Llangyndeyrn, Carmarthenshire

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Milford Haven
Aberdulais
Felindre
Brecon
Gwendraeth Fach
Afon Llynfi
Rhyd
Gwendraeth Fawr
Eastern Cleddau
R Loughor
Taf
R Tawel
A Tawe
Afron Tywi
A Nedd
A Cynin
A Cywyn
Western Cleddau
CARMARTHENSHIRE
SWANSEA
NEATH
PEMBROKESHIRE
Section AA

Plan and section of pit 20103

South Wales Pipeline. Site 201, Land North of Gwempa, Llangyndeyrn, Carmarthenshire

PROJECT TITLE

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