

South Wales Gas Pipeline Project Site 23.02 Land East of Ffrwd-y-drain Manordeilo and Salem Carmarthenshire

Archaeological Watching Brief

for

Rhead Group

on behalf of

National Grid

CA Project: 9150 CA Report: 13271 Event: DAT108797

July 2013

South Wales Gas Pipeline Project Site 23.02

Archaeological Watching Brief

CA Project: 9150 CA Report: 13271 Event: DAT102846

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date	30 April 2015
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date	
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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 23.02, Land East of Ffrwd-y-drain, Manordeilo and Salem,

Carmarthenshire

NGR: SN 6073 2374

Type: Watching Brief

Date: 20 April 2007

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: FTB07

An archaeological watching brief was undertaken by Cambrian Archaeological Projects, 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 hearth was identified and was associated with radiocarbon dates between the mid 15th and mid 17th centuries AD. These dates were consistent with a single sherd of pottery recovered from the hearth and with the cereal assemblage within it. The latter, along with a few fragments of burnt bone, suggests that the hearth was part of a domestic setting, rather than the remains of a field-based crop-drying oven but no further remains of this date are currently recorded in the immediate vicinity.

1. INTRODUCTION

- NACAP Land and Marine Joint Venture (NLMJV), on behalf of National Grid, 1.1 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. During 20 April 2007 CAP carried out an archaeological watching brief at Site 23.02, Land East of Ffrwd-y-drain, Manordeilo and Salem, Carmarthenshire (centred on NGR: SN 6073 2374; Fig. 1). The objective of the watching brief was to record all archaeological remains exposed during the pipeline construction. 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 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 Framework Document* (RSK 2007) and associated *Written Statements of Investigation* (WSIs) and *Method Statements*.

The site

1.3 The site is located within a field alongside the northern boundary of King's Lodge Wood (Fig 1). It lies on the floor of the valley of a minor tributary of the River Towy at approximately 45m AOD. The underlying solid geology of the area is mapped as the Nantmel Mudstones Formation of the Ordovician Period, overlain by superficial deposits of Quaternary Till (BGS 2013).

Archaeological background

1.4 No archaeological remains were identified within the site during the preliminary *Archaeology and Heritage Survey* (CA 2006). Remains were found along the pipeline route during the construction works (Fig. 1). Closest to the current site these included an undated burnt mound and an associated hearth at Site 22.09 and undated parallel ditches located close to current parish boundaries at Site 23.04.

Archaeological objectives

- 1.5 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

- 1.6 The fieldwork followed the methodology set out within the *WSI*. An archaeologist was present during intrusive groundworks comprising stripping of the pipeline easement to the natural substrate (Fig. 1). The feature exposed within the site was discovered during benching works, which were intended to level the natural valley slope within the pipeline easement.
- 1.7 The post-excavation analysis and reporting 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 2012b) 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 2006);
 - 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.

All monuments thus identified that were relevant to the site were taken into account when considering the results of the fieldwork.

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

2. RESULTS (FIG. 2)

- 2.1 This section provides an overview of the watching brief results; detailed summaries of the recorded contexts, finds, environmental samples (palaeoenvironmental evidence) and radiocarbon dates are to be found in Appendices A–D.
- 2.2 The natural geological substrate was cut by hearth 23.2.003, which was oval in plan, 0.65m long, 0.45m wide and 0.05m deep, with shallow sides and an uneven base. The surrounding substrate had been scorched (numbered in the field as 23.2.002) and the hearth was filled by black silty clay 23.2.001 which included charcoal and some large burnt stones, the latter probably the remains of a hearth lining. Samples from this fill yielded a few fragments of burnt animal bone as well as charred cereals. The fill also included a single sherd of North Devon Gravel-Tempered Ware, dateable to the 16th to 18th centuries Amongst the charred plant remains were barley fragments radiocarbon dated to cal. AD 1440–1640 and 1430–1620 (SUERC-57304 and -57305; 95% confidence), a date range consistent with the pottery and the charred plant assemblage (although a single possible grain of emmer within the fill was perhaps residual from earlier but unidentified activity).

Discussion

2.3 The hearth was found as an isolated feature, although it is possible that further remains survive beyond the stripped area. It is also possible that further features lay within the parts of the easement that were not benched, potentially sealed by colluvium from the valley sides or alluvium from the stream. The presence of mixed cereals and burnt bone is suggestive of domestic debris and the hearth may perhaps be the remains of a settlement rather than a field oven used for processing

crops away from habitation as seen on other sites along the pipeline. The radiocarbon dates, pottery and charred cereals all suggest that this putative occupation dates to the later medieval to early modern period but it is not known whether other remains of this date existed in the near vicinity; the nearest remains shown on the 1886-7 1st Edition Ordnance Survey map of the area are dwellings called New House and Pant-y-blodau 150m and 200m south-west of the site respectively.

3. PROJECT TEAM

Fieldwork was undertaken by Cambrian Archaeological Projects. This report was written by Christopher Leonard and Peter Busby with comments by Jonathan Hart and 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 CAP by Kevin Blockley and the post-excavation work was managed for CA by Karen Walker.

4. REFERENCES

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- 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
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 Document, v7. Nacap Land and Marine Final, RSKENSR Environmental Ltd

APPENDIX A: CONTEXT DESCRIPTIONS

Туре	Fill of	Context	Description	L	W	D
		interpretation		(m)	(m)	(m)
Fill	23.2.003	Fill of hearth	Black silty clay with occasional	1.05	0.6	0.05
			large, burnt stones			
-	23.2.003	Scorched	Red-orange silty clay with	0.65	0.45	0.00
		natural	occasional small stones			
Cut		Hearth	Irregular oval, shallow sides and	0.65	0.45	0.05
	Fill	Fill 23.2.003 - 23.2.003	Fill 23.2.003 Fill of hearth - 23.2.003 Scorched natural	Fill 23.2.003 Fill of hearth Black silty clay with occasional large, burnt stones - 23.2.003 Scorched Red-orange silty clay with occasional small stones	interpretation (m) Fill 23.2.003 Fill of hearth Black silty clay with occasional large, burnt stones - 23.2.003 Scorched Red-orange silty clay with occasional small stones Cut Hearth Irregular oval, shallow sides and 0.65	interpretation (m) (m) Fill 23.2.003 Fill of hearth Black silty clay with occasional large, burnt stones - 23.2.003 Scorched Red-orange silty clay with occasional small stones Cut Hearth Irregular oval, shallow sides and 0.65 0.45

APPENDIX B: THE FINDS

Post-Roman Pottery (Courtney and McSloy 2013)

A bodysherd (14g) in fabric NDGT (North Devon Gravel-Tempered Ware) was recorded from fill 23.2.001. It dates in the 16th to 18th century range.

APPENDIX C: THE PALAEOENVIRONMENTAL EVIDENCE BY JAMES RACKHAM

Animal Bone

Animal bone was recovered from sample 2323000, context 232001. The assemblage comprised three tiny unidentifiable fragments of burnt bone (<1g) and a small burnt shaft fragment (0.1g) from a sheep sized animal.

Environmental soil samples

Two samples were taken, from 232001 and from 232002 (Table 1). The samples were processed in the manner described in the assessment report (Carruthers 2008). The residue for one of the two samples was located and refloated and the second float noted on Table 2. The residue of this sample, 2323000, was checked for magnetic material. Sample 2323001 produced no residue and no flot. This sample was recorded as burnt clay and is described as the scorched substrate of the hearth, and the lack of residue and flot suggests that it was the burnt 'natural', consistent with this interpretation. Only material from sample 2323000 was therefore available for further study. The residue produced a little burnt bone and a small magnetic component composed of ironstone and concretions with little evidence for burnt mineral material. The small flot included a small assemblage of identifiable plant macrofossils.

Table 1. Bulk environmental sample from Site 23.02

Sample no	Context no	Feature	Description	wt kg.	vol. l.*
2323000	232001	232003	Dumped/fill deposit over hearth	0.4	1.5
2323001	232002	232003	Scorched substrate – hearth basel	1.5	3

^{*} volume recorded on site - not accurate

Table 2. Data for the environmental sample from Site 23.02

Sample no	Context no	wt kg.	Residue wt g.	1st flot vol ml	2nd flot vol ml	Burnt clay	Magnetic	Bone
2323000	232001	0.4	23	30	1		0.5g	1g
2323001	232002	1.5	none	0	0	+		

Plant macrofossils (Wendy J. Carruthers)

The small charred botanical assemblage from the only flot from this site, the fill of hearth 232003, has been analysed for this report.

Methods

Sorting was carried out using an Olympus SZX7 stereoscopic microscope. Flots were first separated into 3 fractions (minimum mesh 250 microns) to facilitate sorting. All modern material was removed prior to measuring the flot volume. Stace (2010) and Zohary and Hopf (2000) were used for nomenclature. It should be noted that some changes to the identification and interpretation may be made once all of the Milford Haven site data has been gathered together.

Results

The charred plant remains were generally poorly preserved, being encrusted with silts, vacuolated and distorted. This made cereal identification difficult – hence the frequent use of 'cf.'. Despite this, the small soil sample was relatively rich, producing a concentration of 115 charred items per kilogramme of soil processed. It is likely that the charred plant remains had accumulated in the base of the hearth and so may have been repeatedly subjected to heat, resulting in their poor condition.

The dominance of barley in this sample is of interest, as is the absence of definite free-threshing wheat or definite hulled wheat remains (although a tentative distorted emmer/spelt wheat grain was present; *Triticum dicoccum/spelta*). In addition, none of the weed seeds were significant in terms of dating, since all were probably from native species. The radiocarbon dates on the barley and cf. pea indicate that the feature dates to the late medieval period. The possible presence of a rye grain, fits neatly with this date.

Interpretation

The weed taxa are indicative of either grassy habitats or arable fields, although the few *Brassica/Sinapis* sp. seeds could have been from drying a crop of mustard or seeds being prepared for oil extraction. The fine reticulum on the *Brassica/Sinapis* sp. seed coats and small seed size suggested that either wild cabbage (*Brassica oleracea*) or wild turnip (*B. rapa* ssp. *campestris*) might have been present. Assemblages containing frequent brassica seeds, possibly representing oil production, have been found on sites dating from the late Bronze Age onwards, although most have been LBA, IA or Roman in date (e.g. IA Biddenham Loop, Beds (Pelling 2008)).

Table 3. Identified charred plant remains from sample 2323000

	1 st & 2 nd flot
Context	232001
Sample	2323000
Sample wt kg	0.4
Flot vol. ml	39
COMMON NAME	
cf. emmer/spelt wheat grain	1f
cf. wheat grain	1
straight hulled barley grain	2
twisted hulled six-row barley grain	1
indeterminate barley grain	13
oat/brome grain	2
cf. rye grain	1
indeterminate cereal grains	11
2mm vetch tare CDG	4
cf. pea / large pulse	2
medick seed 2.5mm GD	1
hazelnut shell fragment HSW	2
charlock, mustard etc. CD	4
ribwort plantain seed Go	1
	46
	115
	20ml
	Sample Sample wt kg Flot vol. ml COMMON NAME cf. emmer/spelt wheat grain cf. wheat grain straight hulled barley grain twisted hulled six-row barley grain indeterminate barley grain oat/brome grain cf. rye grain indeterminate cereal grains 2mm vetch tare CDG cf. pea / large pulse medick seed 2.5mm GD hazelnut shell fragment HSW charlock, mustard etc. CD

HABITAT/SOIL KEY TO TABLES: A = arable; C = cultivated; D = disturbed; E = heath; G = grassland; H = hedgerow; M = marsh/bog; P = ponds, ditches etc.; S = scrub; W = woods; Y = wavsides

a = acidic soils; b = basic soils; d = dry soils; o = open ground; s = sandy soils; w = damp to wet soils f - fragment

Charcoal

Despite the radiocarbon date obtained for hearth 232003 the charcoal assemblage is fairly small so no detailed study has been undertaken.

Discussion

The sampled feature is thought to have been a hearth, and the burnt stones may derive from an associated structure. The botanical remains are consistent with this suggestion and indicate the burning of cereals, pulses and their associated weeds in the feature. The hazel nutshells reflect the discard of material probably after the roasting or consumption of the nuts.

Radiocarbon determinations on the barley and cf pea from the deposits indicate a late medieval/Tudor age for the feature. The tentative identification of emmer/spelt suggests a residual grain from Roman or earlier activity (Greig 1991) on the site, but an assumption that such activity was present should not be made on the strength of a tentative identification of a single grain fragment.

The environmental evidence gives no 'clear' indication as to function and character of the hearth. The mix of cereal grain, pulses, *Brassic/Sinapsis* seeds and hazel nutshell, with a little unidentifiable burnt bone would suggest a domestic context and the disposal of food waste or accidental charring during food preparation or processing. The weed content is low and no chaff was recorded, but barley chaff rarely survives and as the dominant cereal, the absence of chaff cannot be used to entirely rule out crop processing debris.

The site lies just a few metres south of the road between Pant-y-blodau and Pen-y-banc with recently drained damp marshy ground immediately to the south and a recent (20th century) extension to King's Lodge Wood beyond. The field is currently unsuitable for cereal cultivation and comprises poorly drained rough pasture and marsh subject to seasonal flooding on the southern side of the easement, but drier in the northern half adjacent to the road (Rackham and Scaife 2009), so a field processing area for cereals is unlikely.

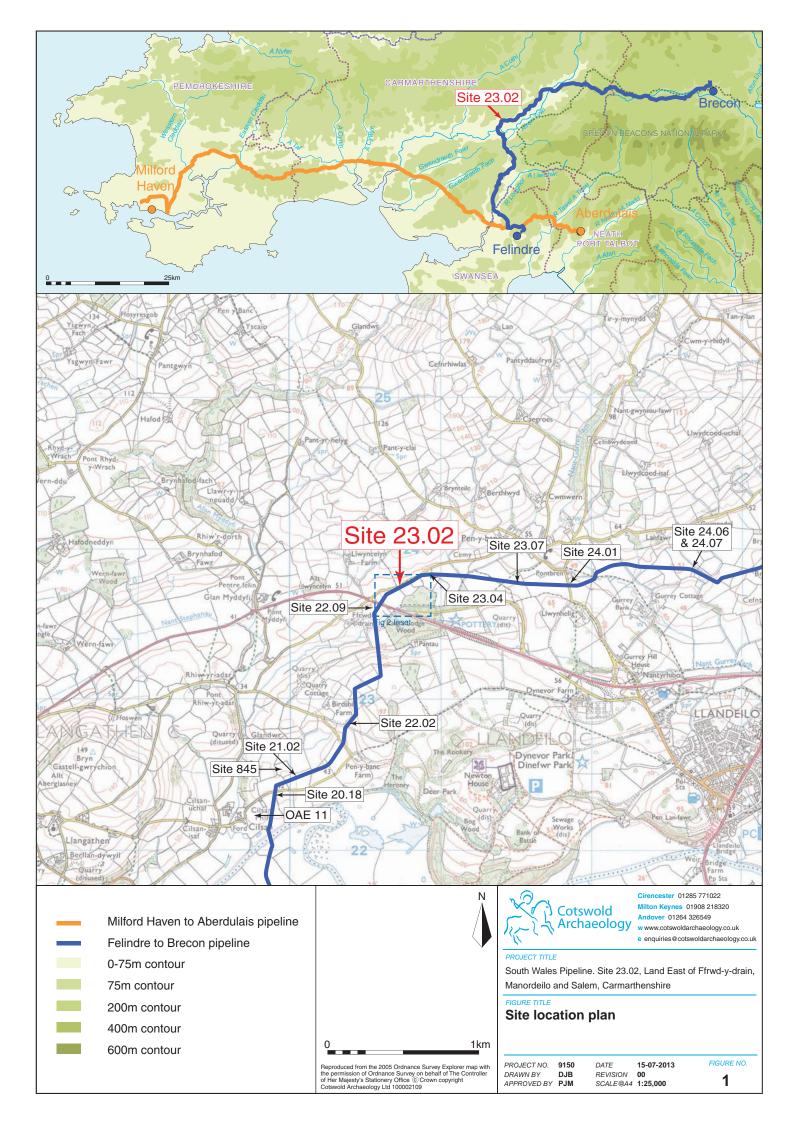
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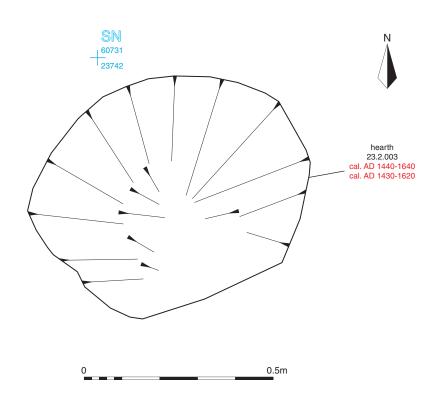
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- Zohary, D. & Hopf, M. (2000) *Domestication of Plants in the Old World*. Oxford: OP, 3rd Edition.**Table 1.**Radiocarbon samples from environmental samples from the scheme.

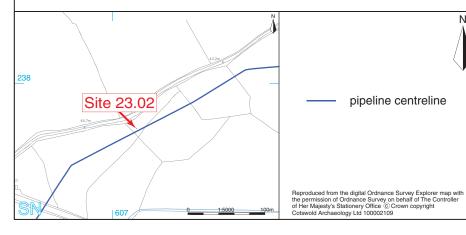
APPENDIX D: THE RADIOCARBON DATES BY SEREN GRITHIFFS

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.

Sample	Sample ID	Context ID	d13C	Lab code	Result	Calibrated date range (95% confidence)
charred plant remains; hulled	2323000	232001	-23.6 ‰	SUERC-	382 ±	1440-1640
barely grains x3				57304	30	AD
charred plant remains; cf.	2323000	232001	-24.0 ‰	SUERC-	397 ±	1430-1620
Pisum sativum x1				57305	30	AD







pipeline centreline

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South Wales Pipeline. Site 23.02, Land East of Ffrwd-y-drain, Manordeilo and Salem, Carmarthenshire

Plans of layer 23.2.001 and hearth 23.2.003

PROJECT NO.	9150	DATE	15-07-2013	FIGURE NO.
DRAWN BY APPROVED BY	DJB PJM	REVISION SCALE@A4		2