



A.P.A.C. Ltd.

Archaeological Perspectives Analysis Consultancy

ARCHAEOLOGICAL

WATCHING BRIEF

WB04/AONB1/07



Angidy Ironworks, Tintern.

Wye Valley AONB



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Cover photograph. Angidy Ironworks

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1 Non Technical Summary

On the 17th July 2007, Dr N Phillips of A.P.A.C. Ltd commenced a watching brief at the Abbey Tintern Furnace Site, Tintern, Monmouthshire. An archaeological watching brief had been commissioned by Wye Valley AONB, and the resultant watching brief design; prepared by Dr N Phillips, concentrated on initial investigation work at the site; undertaken to assess the possibility of work to the original drainage structures connecting the furnace floor area to the race passing under the Devauden Tintern road. The work to uncover the original drainage services and their reinstatement was partially successful. Work was discontinued after four days due to heavy rain which seriously hampered the work. Although it is believed that the drain has been found it remains blocked. The work provided an opportunity to record other contemporary structures uncovered during excavation work.

2 Introduction

In February 2005 Monmouthshire County Council; owners of The Angidy Ironworks, commissioned a Conservation Plan Brief, for both Clydach and Angidy Ironworks the purpose of which was to provide a management strategy to promote and preserve these nationally significant, heritage assets.

The strategy compiled considers the site of The Angidy Ironworks as part of the wider tourism potential in this Area of Outstanding Natural Beauty, (AONB).

The Conservation Plan was prepared in anticipation of a bid, ‘*Over looking the Wye*’, to the Heritage Lottery Fund by a partnership of interested organisations led by the Wye Valley AONB Joint Advisory Committee. This seeks the enhancement and preservation of the key landscape and archaeological features of the AONB, whilst improving the visitor experience through the better interpretation and upgraded facilities.

(MCC 2005, 5)

The single consultative document was intended to provide:

- clear guidelines for testing an evaluation of material changes to the site or its structures
- preparing long-term conservation programs for the site and its components.
- making day to day decisions with regard to maintenance and repair.
- drawing up plans to enhance the potential contribution of the site in relation to the local community, the local economy and particularly the Wye Valley AONB.

(MCC 2005, 6)

In order pursue these aims a list of general conservation principles were included in the plan, (MCC 2005, 29-36).

Unfortunately, none of the work proposed for the Angidy Ironworks site; as laid out in (MCC 2005), is possible due to the presence of standing water over the lower floor, *see cover*. Indeed the presence of the standing water was causing problems as far back as the 1979-81 excavations, where ‘full excavation’ was impossible due to water levels, (Pikin 1982, 12 & Probert 1982, 26).

The purpose of this present undertaking therefore, is to clear the water from the site by locating, and reinstating the original drainage channel.



2.1 Location and scope of work

Angidy Ironworks, SO5200, is situated south of the Angidy stream, in the steep sided Angidy valley west of Tintern, Monmouthshire, *fig 01*. If travelling north from Chepstow to Monmouth on the A466, the first left turn after Tintern Abbey is the lane to Llanishen which passes by the furnace site after approximately 4 kilometres.

The Angidy Ironworks site is a Scheduled Monument, Cadw reference MM197. It is lozenge shaped measuring some 100m by 35m. However, excavation work undertaken during this watching brief was concentrated on private land adjacent to the Ironworks site; belonging to Mr and Mrs Saunders, Furnace Cottages, *fig 01*. The private land forms part of the garden area of Furnace Cottages and abuts the road opposite the Ironworks site. This land is at present outside of the scheduled area.

Work was concentrated here because ground features and topography suggested that the expected outfall of the drain from the ironworks wheel pit would open adjacent to the road in this area, plate 01. Trial pitting was employed to search for the drain but without success plate 02. A new test strategy was then employed using a representation of the drain on an early map, *fig 2*. The drain is depicted as an open channel running from the north east corner a cottage plot; south of the road.

As mentioned above, a set of policies have been drawn up regarding any work at the site. Policy 2.2 states: 'All work to Angidy Ironworks must be subject to a watching brief by a qualified archaeologist...' (MCC 2005, 30). It is in response to this policy that Dr N. Phillips, A.P.A.C. Ltd, was contracted to conduct the watching brief.

Although the area of excavation is not included in the scheduled area, it was to locate part of the scheduled works that the work was undertaken. With this in mind, the watching brief was designed to concentrate on any excavation work being undertaken.

2.2 Geology and topography

The site is located on the solid geology of the Upper Old Red Sandstone, Tintern Sandstone Group with a drift deposit of Alluvium (OS 1981).

The topography of the site location is a narrow steep sided, wooded valley, centred on the Angidy stream which generally falls in an easterly direction to the Wye at Tintern. The woodland, some of which is owned and managed by the Forestry Commission is a mixture of deciduous and coniferous trees. A broad fire break occurs south west of the site which opens up the aspect of the location.

The site is surrounded by SSSIs and LNRs but is itself not designated

2.3 Archaeological and historical background

There have been two archaeological episodes at the Ironworks site:

- the first excavation centred on the leat and the wheel pit and was undertaken by Parr and Tucker in 1975, (Parr & Tucker 1975 V9 .2).
- the second was a much larger scale excavation conducted by John Pikin for Gwent County Council between 1979 and 1981.



The later was recorded in *Excavation of Abbey Tintern Ironworks Angidy Valley 1979-1981*, an in house publication for Gwent County Council. Indeed, policy 5.2.1 (MCC 2005, 30), states that 'All work to the Angidy Ironworks should be carried out with reference to' this document.

The historical background to the site is also well documented in the above two reports as well as in the Monmouthshire County Council 2005 Angidy Ironworks Conservation Plan. Rees provides a very detailed account of the *Iron Works at Tintern* with good primary sourcing, (Rees) 1968. A more easily accessible, general background can be found in *The Water Powered Industries of the Lower Wye Valley*, Coates 1992.

A more specific history of the area of excavation; the private garden of Furnace cottages, can be best derived from cartographic evidence. Fig 2, as has been shown, shows the location of a cottage and open drain. Presumably the drain is that of the wheel pit outflow to the Angidy. The alignment of the cottage with the furnace buildings is interesting suggesting some sort of continuity of building. Conversely, the alignment of the north edge of the cottage with the road would tend to suggest discontinuity. Hence, the present road way is a later addition to the site than the cottage. This discontinuity of alignment is more accurately noted on the map progressions of 1840 and 1902 fig 03. Also shown is that the drain has become covered by 1840 and the ironworks partially disappeared. This is consistent with the date of 1826 for closure of the furnace (Parr & Tucker 1975, 5).

3 Aims and Objectives

3.1 Watching Brief

The aim of the watching brief was to preserve by record, within the resources available, any archaeological deposits uncovered during groundwork.

The watching brief would also ensure that: in the event of archaeological resources of significance being discovered requiring treatment beyond the remit of the watching brief; then steps would be implemented to ensure that their treatment would be undertaken within the standards recommended by the IFA.

4 Watching Brief Methodology

4.1 Fieldwork

The watching brief consisted of an archaeological fieldworker being present during groundwork at the site.

Initial work included the clearance of vegetation from a dry stone lined ditch, identified as an old watercourse, plate 01.

Groundwork entailed; the excavation, by mechanical digging equipment, of test pits to locate a drainage channel leading from the Angidy Ironworks to the Angidy stream fig 02.

4.2 Recording

All features uncovered were cleaned back to provide a reasonable surface for photographic recording. Such photographs included a scale and north direction arrow, where appropriate.



All photographs taken have been given a unique number and listed in the archive of this report. The archive, deposited at Monmouth Museum, includes a contact sheet and a digital copy of all the photographs.

All features were surveyed using a Topcon GPT 3007, reflector less Total Station. The raw data was initially processed in CivilCad 6, imported to Autocad 2000 and converted to Illustrator format for final presentation, fig 05.

All features uncovered were given a brief description in the site log. Any observation of interesting or anomalous data was also recorded for later interpretation.

4.3 **Finds**

A small representative selection of materials was collected, glass, ceramic and slag. These mostly consisted of surface deposits due to the difficulty of water logging and mud slurry during excavation.

5 **Watching Brief Results**

5.1 **Soils and ground conditions**

Work on the site was conducted over a four day period. Days one and three were dry and warm and ground conditions were good. Day two however, was quite wet and hampered the excavation operations. Heavy rain on day four brought the work to a halt as the downpour increased ground water levels beyond the ability of the pumps to be effective. Indeed at the beginning of day four there was more water in the furnace area, after some twelve hours of pumping than there had been before the work started.

5.2 **Descriptions**

Test pit 1

Test pit 1, plate 02, was excavated by mechanical digger to a depth of 1.4 m below ground level. The excavation was undertaken with a non-toothed bucket, and produced a trench 0.8m x 1.4m.

Water was encountered at a depth of 0.35m beneath the ground level and filled the trench quite rapidly. It was not possible to investigate the resultant excavation with any accuracy due to the water level.

Stratigraphic layers that were observed consisted of the topsoil [001], a variable lens of red sandy sediment [002] followed by dark brown soil with lenses of powdered plaster, sherds of glass, ceramics and lumps of furnace slag [003].

The ceramic and glass finds within [003] were non abraded and dated to the 19th and early 20th century.

Test pit 2

Test pit 2 was excavated alongside the road retaining wall, just to the north east of test pit 1. Its excavation was in response to an eyewitness account of an archway in the vicinity, Saunders B., *pers com*. A vertical line of masonry was the initial focus of interest, plate 03.

The trench measured 0.8 x 1m and revealed a compacted floor with high iron content [004] just below the surface.



The floor surface was trowelled for recording and remains in need of further investigation.

No brick arch was found and there were no finds in this area.

Test pit 3

The excavation of test pit 3 was initially carried out by mechanical digger fitted with a narrow grading bucket. Unfortunately, the surface water present did not allow for any investigation of the sub-surface archaeology.

The excavation was stopped after a few buckets of soil were removed and a rod was used to test the depth. The rod struck a solid bottom at around 1.8m beneath the surface.

The hard surface was revealed to be the cellar of a cottage previously excavated by the owners of the site; Mr & Mrs Saunders, plate 05.

Test pit 4

The location of test pit 4 was identified from the 1821 estate map, fig 02. Its excavation was carried out by mechanical digger fitted with a grading bucket.

The line of the west edge of the trench followed the line of the surviving cottage wall as shown on fig 02. The northern edge was restricted by the proximity of the road which, at this point appeared to be supported by a poorly constructed dry stone revetment, plate 06. Both the width and length of test pit 5 were largely dictated by the manoeuvrability of the mechanical digger and health and safety issues resulting from the poor ground conditions. Fully extended, the digger arm reached a depth of about 1.5m below ground surface but was unable to locate any opening for the drain.

As with test pit 3, the ingress of water seriously prevented any detail recording of the excavation and also made it impossible to assess the success of the search to locate the drain out flow.

At the end of the present excavation of test pit 4, a length of the south eastern cottage wall had been uncovered revealing a plastered or rendered surface. A section of masonry, at a slightly different alignment and build runs from the northeast corner of the cottage into the bank of the road.

In order to remove the water from test pit 4, it was decided to dig a channel to the stream. The position for the trench was the line of a modern road drain which can be seen in plate 08.

The ground through which the trench was excavated consisted of modern backfill associated with the road drain.

Due to worsening weather, the excavation was stopped with no plans to return at the present time.

6 Discussion and Interpretation

6.1 Reliability of field investigation

The watching brief was conducted at periods of active excavation and the initial findings were promising as regards impact to archaeological resources. Unfortunately, the ability to monitor the excavation deteriorated



rapidly with the weather and ground conditions making it difficult to record any thing with any degree of certainty.

6.2

Interpretation

Test pit 1

The location for test pit one was proposed due to the existing stone lined channel and its direction of fall within the topography. It was later discovered, that its line of fall took it under the floor of a known cottage thereby, necessitating a channel depth too deep for practical drainage purposes. Clearance of the channel revealed that the dry stone wall linings were quite shallow, approximately 0.4m and probably aesthetic features rather than structural. The excavation showed that the walls rested on a sediment lens [002] under which was back fill containing 19th/20th century, domestic debitage. This area does not form part of the drainage channel from the furnace.

Test pit 2

The location of test pit 2, to find a reported arch position through the road revetment was unsuccessful in achieving its purpose but has provided an interesting area for further investigation. The feature, partially revealed within test pit 2 is a heavily compacted surface with a high visible ferrous content. It appears to be either a flow formation, or the remnants of a deposition episode. It has a rectangular break of surface which may be the ghost impression of an associated object; now gone. The surface appears to be contained along the northern edge by vertical edges of masonry now incorporated into the road revetment.

Test pit 3

Test pit 3 was abandoned quite quickly as a search location, highlighting as it did the existence of the cottage remains and the records of its previous excavation by Mrs J Saunders, *pers com*. It did however, lead to further credence of the early map which led to the position of test pit 4.

Test pit 4

At close of excavations on the 20th July 2007, the masonry wall, to the north east of the cottage wall in test pit 4, would appear to be associated with the drain outfall from the furnace floor. This interpretation cannot be shown archaeologically at present but has been arrived at through documentation, survey and observation. In keeping with the cartographic history mentioned above, 2.3, the ground between the stream and the cottage consists entirely of made up ground. Arguably, a lot of the fill equates to the modern pie trench but there is no discernable stratigraphic separation between its cut and the background fill.

Finds

As noted above; finds retrieval was complicated by water and mud on the site; however, some samples were collected. Ceramic sherds samples were represented by domestic ware: cups and plates; mostly transfer printed, and kitchen ware, internal and external glazes. A large quantity of roofing pan tiles were present also.

Glass fragments were represented by window glass 2mm and 3mm, dark green and brown bottle sherds, and one piece of soda lime, heavily bubbled from a two piece mould. The pottery and glass would tend to suggest a 19th and early 20th century date.

Slag from the former iron processing associated with the nearby site is fairly ubiquitous. Its forms are very glasslike and come in a variety of colours: green, red, and blue. It appears to be present at all depths that were excavated again verifying the nature of the ground as having been made up.



6.3 **Overall interpretation**

It remains seen as to whether the overall aim, to find the drainage channel has been successful at this point. However, the objectives of preservation and recording have been met.

7 **Acknowledgements**

Thanks to Mr and Mrs Saunders for access to their land and their wealth of knowledge about the site. Further appreciation goes to the ground workers (Berriges, contractors) who extended every effort to contribute to the efficient and effective outcome of the undertaking. Thanks also to Sue Middleton AONB and Martyn Western (OPUS0 for their assistance.



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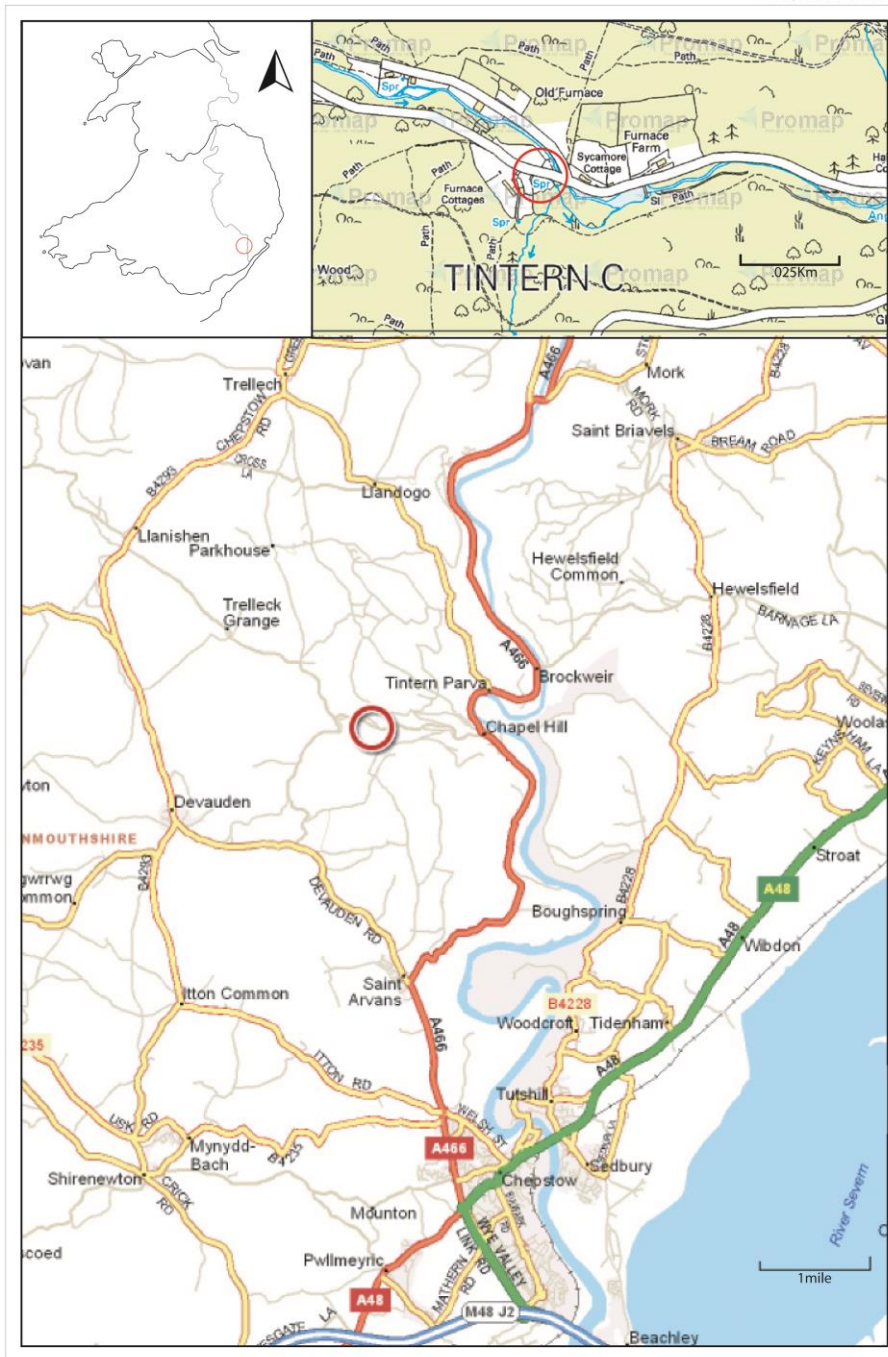
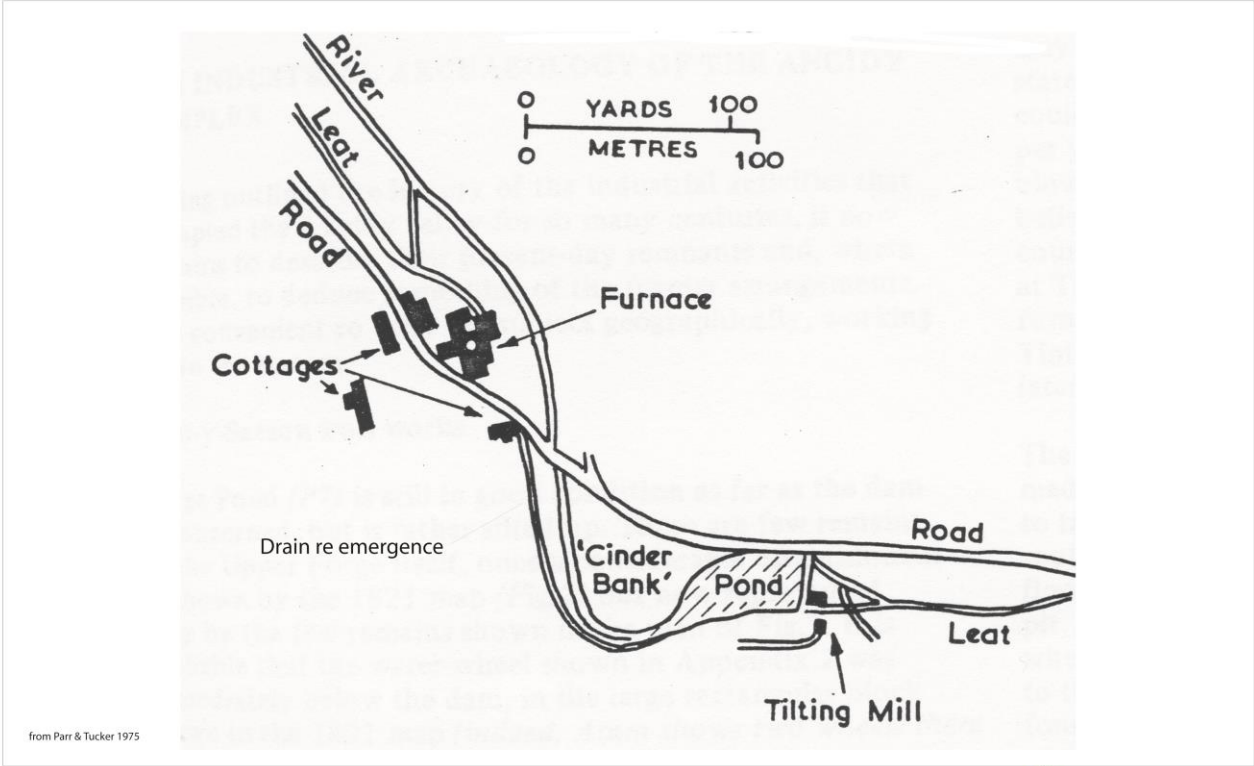


Fig 01: Location



from Parr & Tucker 1975

Fig 02.1821 map

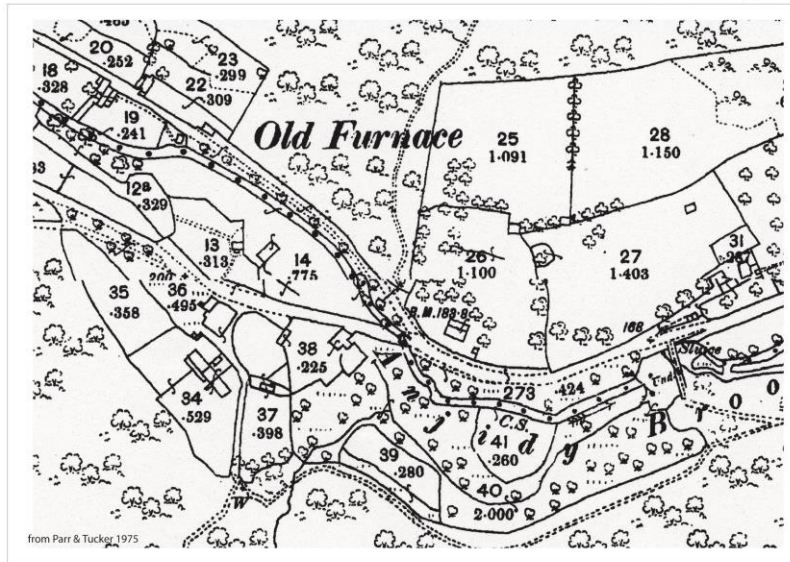


Fig 03: 1840

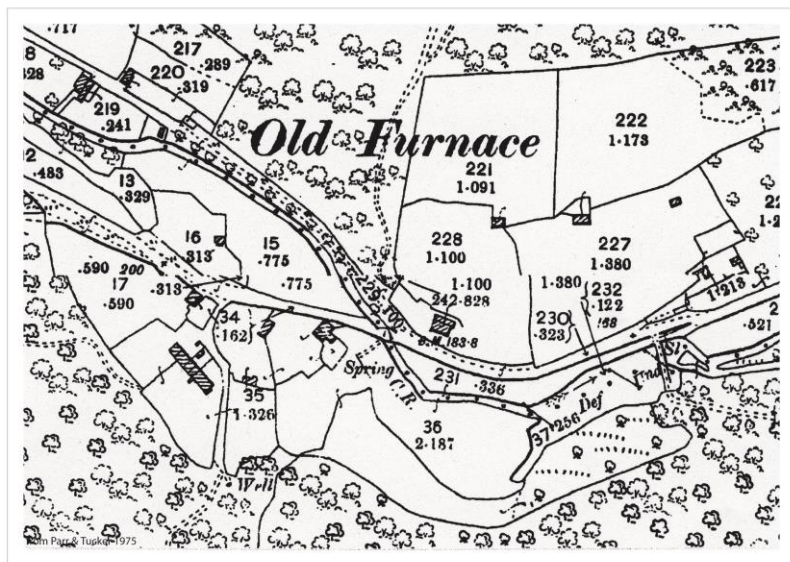
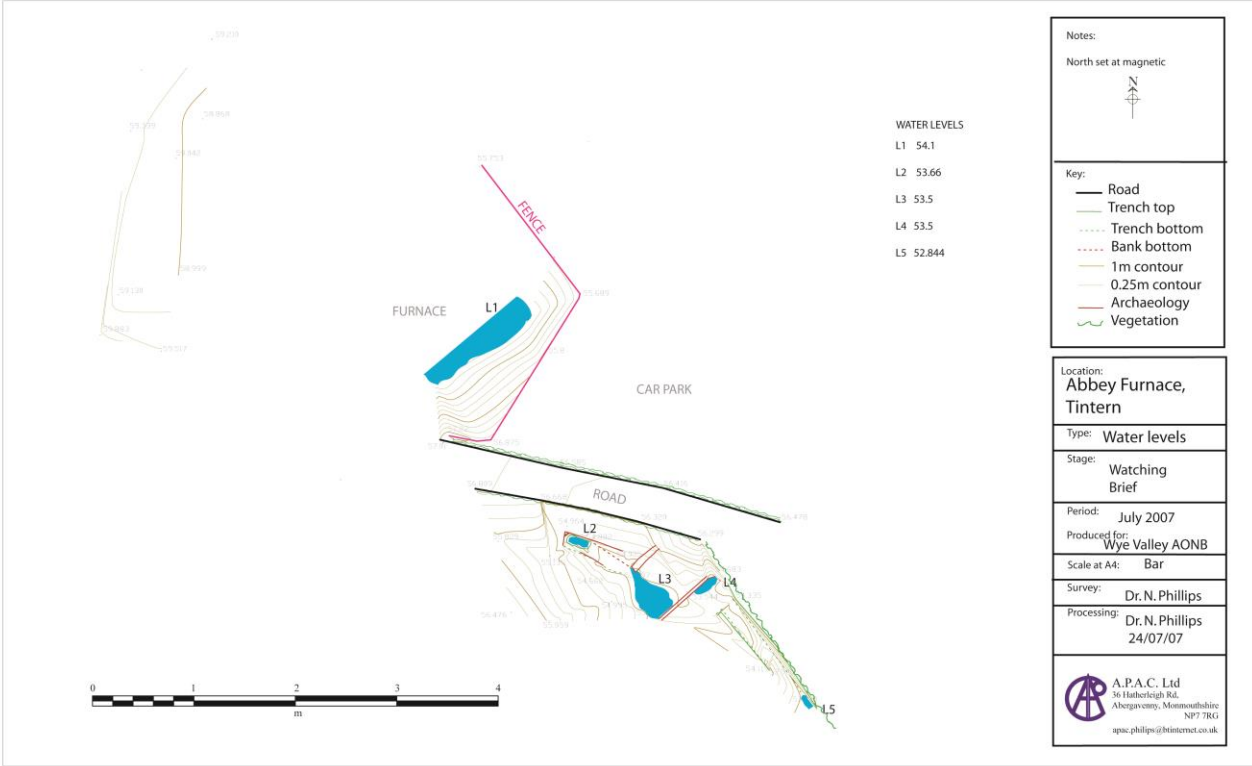


Fig 04: 1900



WATER LEVELS
 L1 54.1
 L2 53.66
 L3 53.5
 L4 53.5
 L5 52.844

Notes:
 North set at magnetic

Key:
 — Road
 — Trench top
 - - - Trench bottom
 - - - Bank bottom
 — 1m contour
 — 0.25m contour
 — Archaeology
 — Vegetation

Location:
**Abbey Furnace,
 Tintern**

Type: **Water levels**

Stage: **Watching
 Brief**

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Fig 05: Partial Topographic Survey



Plate 01: Predicted drain position



Plate 02: Test pit 1



Plate 03: Test pit 2



Plate 04: Test pit 3

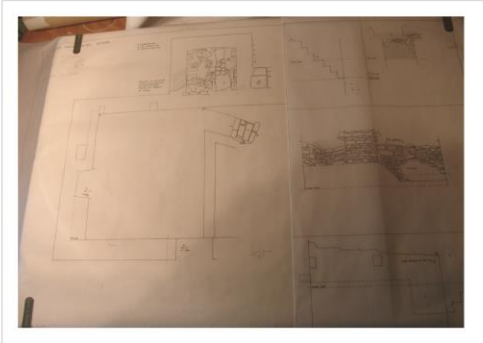


Plate 05: Excavation plan (Mrs J Saunders)



Plate 06: Test pit 4, road revetment



Plate 07: Test pit 4, cottage & drain



Plate 08: Pipe trench