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## 3.0 DISCUSSION

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Discussion of the results of the strategic sub-surface study of the study area must be preliminary at this stage pending the completion of artefact management.

Some conclusions may be drawn concerning macroscopic results of the study:

- [i.] There is no compelling evidence that miners' huts were located in the positions identified by survey. This is by no means a criticism of the survey/surveyor(s) but rather an indication that the positions shown on the plan of Greta Colliery, 1873, were rough indications of the existence of the huts but not their accurate locations. The scatter of artefacts at the MH11 survey site was an indication of episodic use, possibly for rubbish disposal, but not of residence.
- [ii.] The fact that no residue could be determined in relation to the positions of MH10 and MH6 raises a question as to the durability of the structures and the possibility that some of 'huts' may have been glorified tents, as had been the practise on the goldfields little more than a decade earlier.
- [iii.] The fireplace footing at MH11-E, on the other hand, provides substantial evidence of the existence of a hut at this location, while the assemblage of artefacts broadly confirms occupation by a miner. The fact that no evidence of post holes was found suggests that the dwelling may have been structured on bed logs, supported either directly on ground or by simple stumps or logs and otherwise constructed of split slabs. The recovery of iron residues including nails and spikes confirms timber fixing, although probably not flooring. The building would probably have been bark-roofed. The bricks of the fireplace footing were thrown with a long narrow frog that was common in the Maitland area in the third quarter of the 18<sup>th</sup> Century. A residual deposit of coal dust on the eastern side of the fireplace contributes to the confirmation of occupation of this hut by a miner (who probably brought home a bucket of coal each day from the mine). A larger deposit outside the presumed alignment of the eastern wall suggested the location of a home stockpile of coal.
- [iv.] The artefact scatter at MH10-E was the only indication of human recourse in the general area of MH10, and has been discarded as representing a dwelling site. Like the scatter at MH11, this scatter also probably represented a rubbish disposal site.
- [v.] The door sill and brick doorway apron at MH5-E also provided substantial evidence of the existence of a hut at this location, supported by a broad collection of artefacts including structural spikes and nails and of the residue household utensils and utilitarian items and a bone residue. Although it was relatively sparse, the broad disposal scatter of artefacts concentrated to the south-east of the doorway raised the possibility of disposal of unwanted items, thrown from the doorway by a left-handed person. Two of the bricks/brickbatts in the apron carried the definitive 'heart' frog of 'The Pack' period of brickmaking in Maitland which is tightly confined to the late 1860s. An example of this brick style was erroneously described at Figure 5-24 of the SKM report as 'probably a convict brick'<sup>2</sup>. In passing, we also located and secured a 'diamond' frog brick in the course of fieldwork.

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<sup>2</sup> SKM, 2010:46.

At present, only general comment is made concerning certain specific, readily identifiable artefacts.

[i.] At MH11-E:

1. The broken miner's pick head appears fairly definitive of the employment of (at least one) occupant of that hut.
2. The scrap of slate may suggest the presence of a child but may equally be the residue of a miner's tally slate.
3. The base of an Eley 12-gauge shotgun cartridge suggests opportunistic taking of game to supplement diet (caveat: dependent upon further analysis, the cartridge may prove unrelated to the period of occupation of huts by miner').
4. One fragment of glass bears the letters 'RILL' which may be capable of diagnosis.
5. One bottle fragment could be positively identified as part of a schnapps bottle, almost certainly "Wolff's Aromatic Schnapps", which may indicate this hut's occupant as having been of German origin.

[ii.] At MH5-E:

- The section of beef bone bears a fairly clear mark of butchery and is certainly saw-cut at both ends.
- One piece of ceramic bears part of a manufacturer's stamp, which may be diagnostic.
- The relatively high count of nails and spikes indicates timber fixing on site while the door sill and brick doorway apron raise the possibility of a timber floor.
- The fragment of a "SPERM SEWING MACHINE OIL" bottle raises interesting questions about the occupant(s) of the cottage (its American origin has already been established): is it possible that the hut was occupied by a married couple? Did they possess an early sewing machine? Or was the oil simply used as a light oil lubricant in the household (more probable)?
- One bottle fragment at this site could also be positively identified as part of a schnapps bottle, again almost certainly "Wolff's Aromatic Schnapps", and again possibly confirming this hut's occupant as having been German.

[iii.] Generally, however, the study area is also interesting for artefacts that were not observed and/or salvaged, the most notable being the total absence of fragments of clay pipes. At a time when pipe smoking was part of the workmen's way of life and the most popular pipe was the fragile but plentiful and cheap clay pipe, the absence of residue of such pipes in residential sites is surprising. One explanation may be that the workmen followed to dominant European (particularly German) practise of smoking briar pipes.

The following responses are made to the questions posed in the Research Design:

- |   |  |
|---|--|
| • Is there any material evidence for domestic occupation in the eastern part of the project area?               | Yes.   |
| • If so, are we able to determine the type of nature of construction? Are there any structural remains?         | No.  |
| • Is there any evidence of other domestic features such as gardens, privies, outbuildings, fencing or pathways? | With the exception of domestic rubbish disposal, No. |
| • Who lived here? Is there any  | Miners lived in two of the huts identified           |

evidence to support hypothesis that occupation was by miners? Or even German miners?	and there is some evidence to suggest they may have been of German origin.
<ul style="list-style-type: none"><li>• When was this area occupied?</li></ul>	Material evidence suggests as early as the 1860s.
<ul style="list-style-type: none"><li>• Can we distinguish any phases of use?</li></ul>	No.
<ul style="list-style-type: none"><li>• What activities were conducted on the site? Was the occupation purely domestic or is there a variety of uses?</li></ul>	Apparently purely domestic.
<ul style="list-style-type: none"><li>• What is the extent and integrity of archaeological deposits across the site?</li></ul>	Artefacts, mainly non-diagnostic ceramic and glass, are scattered thinly across the landscape. Some aggregations indicate disposal areas while specific scatters are associated with building residues: a fireplace footing was found identified as MH11-E and a stone door sill and brick apron at MH5-E. The condition of these building residues was 'Substantially Intact' (for what they represented) and their integrity was assessed as 'Minor Modification'.
<ul style="list-style-type: none"><li>• What is the geographical extent of activities?</li></ul>	Apparently limited to a strip beside the railway line.
<ul style="list-style-type: none"><li>• When was this area abandoned?</li></ul>	On present evidence, this cannot be defined.

Detailed analysis of artefacts may provide deeper insights into the nature of the huts' occupants and their way of life. On present indications, further excavation in search of miners' huts would not appear to be warranted.

In summary, the structural material evidence at sites MH5-E and MH11-E does little but confirm the survival of residue from two cottages. Based on artefact evidence, the cottages can be said with reasonable certainty to have been occupied by miners and they were probably of German origin. In this context the suggestions on Maitland's 1873 plan<sup>3</sup> appear to be generally validated, and the local belief of at least some of the miners' origins is supported. Otherwise, the material evidence at present makes little contribution to an appreciation of the lifeways and human condition of the early industrial workers. The study area may be viewed in common with the more substantial residual material evidence of the Greta Colliery, the known locations of Farthings Pit and the Anvil Creek Colliery, and the surviving evidence of railway connections and yards, to represent an early and evolving mining precinct. Within this precinct, however, the fragmentary nature of the material evidence and notable lack of structural evidence of the buildings (as opposed to that relating to building attributes) makes little significant contribution to the industrial heritage of the Greta locality and the wider South Maitland Coal Fields. In this context, the evaluation of cultural significance in the assessment report of SKM<sup>4</sup> appears to be supported.

<sup>3</sup> Whether Maitland actually indicated the locations of the cottages on his plan or alternatively the non-scale locations were marked by another person on a working plan, as an annotation.

<sup>4</sup> Op cit.

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## 4.0 REFERENCES

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# Appendix 1

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Copy of Phase 4: Archaeological Testing Methodology,  
Greta Train Support Facility, Greta NSW, (Version 3)  
by Sinclair Knight Merz



# Memo



**To** Kylie Seretis, Heritage Branch, Department of Planning      **Date** 18 June 2010

**From** Rose Reid      **Project No** VW04784

**Copy** Monteath-Powys, Pacific National, SKM

**Subject** **Phase 4: Archaeological Testing Methodology, Greta Train Support Facility, Greta NSW (Version 3)**

## 1. Introduction

Sinclair Knight Merz Pty Ltd (SKM) have been contracted by Pacific National to address historical heritage assessment and reporting requirements issued by the Director-General as part of the Environmental Assessment (EA) for the proposed Greta Train Support Facility (TSF), in Greta, New South Wales. The project is being conducted under Part 3A of the *Environment Planning and Assessment Act 1979*.

The Greta TSF is a major rail development project for New South Wales and is considered to be critical major infrastructure. The TSF will include rail infrastructure, a site office and access road. The TSF is required to service and provision trains for the Pacific National coal freight business. The proposed works will include earthworks throughout the project area for the preparation of the site and construction of the infrastructure required to service locomotives and wagons as well as an administration facility and ancillary development associated with the project. The project will also include connection of the rail tracks within the TSF to the Main Northern Railway.

A Historical Heritage Assessment is required in order to determine the nature of any historical heritage within the project area, impacts to this heritage as a result of the proposed works

## 2. Results of Previous Investigations

Several investigations have already been undertaken at the project area. A summary of these and any relevant results are provided in the following sections.

### 2.1 Indigenous Cultural Heritage Assessment

The Indigenous Cultural Heritage Assessment included consultation, desktop assessments and field survey and sub-surface testing in accordance with the requirements of the *National Parks and Wildlife Act 1974* and the *Draft Community Consultation Requirements for Proponents, for Aboriginal Cultural Heritage* (DECCW 2005).

The project area is gently undulating plain in the south, and becomes undulating to rolling hills to the north of Sawyers Creek. Small outcrops of the sandstone bedrock outcrop in the drainage line at the north of the study area, and on the soft high ridge north of Sawyers Creek.

The results of the Indigenous Cultural Heritage Assessment determined that artefact scatters represent the most common Indigenous site type within the Hunter Valley, followed by isolated stone artefact finds.



To complement and test the findings of the desktop assessment, a field survey was undertaken. During field survey, a total of 151 flaked stone artefacts were identified, as well as two areas of Potential Archaeological Deposits (PADs).

Sub-surface test excavation was undertaken to explore the nature of PADs where works are proposed. A total of 125 test-excavations were undertaken as part of the Indigenous sub-surface testing program. As a result of the sub-surface testing a total of 90 new artefacts were recorded, 8 within PAD 1, and 82 within PAD 2. These artefacts form, with the results of the field survey, two discrete areas of past Aboriginal activity or archaeological cultural heritage *sites* (Sawyers Creek Artefact Scatter 1 [AHIMS# 37-6-2165] and Sawyers Creek Artefact Scatter 2 [AHIMS# 37-6-2164]).

Specific recommendations to manage Indigenous cultural heritage during the construction and operation of the TSF have been developed in the Indigenous Assessment report.

The following results of the Indigenous Cultural Heritage Assessment are relevant to the preparation of this methodology:

- A stratigraphic drawing of test pit TP2, located near to the proposed location of the miners houses, indicates that the surface soil is a light brown silty loam to a maximum depth of 15cm, underlain by mottled yellow and brown clay. Sandstone bedrock was encountered at approximately 20 cm below ground surface.
- Of the 125 test pits excavated during the Indigenous Assessment, 21 contained historic artefacts. All of the historic artefacts were located at depths of less than 20 cm.

## 2.2 Historical Heritage Assessment

A Historical Heritage Assessment has been undertaken which documents the results of background research, a field assessment (field survey and sub-surface testing), an assessment of heritage significance and an assessment of impacts to features within the TSF project area as well as an assessment of impacts to historical heritage places within 1km of the TSF.

The Historical Heritage Assessment has so far comprised three Phases, namely field inspection (Phase 1), pedestrian survey (Phase 2) and sub-surface testing (Phase 3).

The scope of sub-surface testing already undertaken in the vicinity of the miners houses includes the following:

- 38 shovel test pits (STPs), 50cm by 50cm, in five east – west trending transects. These STPs were excavated to determine the location of historical features in the central part of the project area. This is an area associated with a surface scatter of artefacts exposed by grader activity during the formation and maintenance of a trotting track. These historical artefacts may be related to occupation of the miners houses. Artefacts were found on the surface and at up to 10 cm below ground surface.

The results of the Historical Heritage Assessment to date indicate the following:



- The background research did not reveal any additional information about the miners houses, other than the approximate location of the 11 residences, based on the historic map.
- There is little historical information available about the possible nature of construction of these houses, however, based on the location (rural), the era (1870s-1890s), the demographic (low working class) and the availability of housing materials, the construction was likely to be of timber, with or without posts, with a dirt floor and possibly a brick or stone hearth (see photo in Attachment 2). There may have been shallow drainage channels around each house to divert water away.
- The ground visibility during survey and previous sub-surface testing was poor (approximately 15%) in the approximate location of the miners houses.
- Parts of the project area have been subject to high degree of ground disturbance, in particular the trotting track area, which is regularly graded.
- Several scatters of historical material, mainly domestic, were found across the study area during different phases of the assessment. These scatters were located in areas recently disturbed by grading activities in the vicinity of the trotting track.
- Some anecdotal information has indicated that the houses may have belonged to German miners. However, the report concludes that there is little evidence within the study area to confirm the location, nature or significance of a row of miners houses, marked on some historical plans.

This methodology seeks to further investigate the location and nature of occupation of 11 historic miners houses, which accordingly to a historic map (1873) are potentially located in the eastern part of the project area, adjacent to the Great Northern Railway. Additional testing is proposed in order to determine the answers to some of the research questions posed in Section 3 of this methodology.

### **3. Research Design**

Archaeological research objectives are typically framed as a series of questions. The key questions relating to the miners houses are as follows:

- Is there any material evidence for domestic occupation in the eastern part of the project area?
- If so, are we able to determine the type and nature of construction? Are there any structural remains?
- Is there any evidence of other domestic features such as gardens, privies, outbuildings, fencing or pathways?
- Who lived here? Is there any evidence to support hypothesis that occupation was by miners? Or even German miners?
- When was this area occupied?
- Can we distinguish any phases of use?
- What activities were conducted on the site? Was the occupation purely domestic or is there a variety of uses?



- What is the extent and integrity of archaeological deposits across the site?
- What is the geographical extent of activities?
- When was this area abandoned?

These questions assist in the development of a methodology for the proposed excavation.

## **4. Proposed Archaeological Excavation Methodology**

### **4.1 Purpose of the Archaeological Assessment**

The purpose of this archaeological assessment is to:

- Evaluate the likely extent, nature and integrity of the archaeological deposit;
- Determine the significance of the resource; and
- Provide the appropriate management and mitigation measures.

### **4.2 Preparation for Fieldwork**

An Archaeological Excavation Permit, under Section 140 of the Heritage Act, 1977 may be required prior to the commencement of works.

Site conditions will dictate access to the site, as access requires a creek crossing. Heavy machinery (an excavator) will need to be mobilised to site, and the moisture levels on site may limit access for the excavator.

Prior to the fieldwork a safety plan will be prepared and authorised by the Project Manager (Jo Brooke) and Project Director (Vanessa Edmonds).

Potential constraints to the field program will include:

- The location and extent of the PADs identified during the Indigenous Assessment;
- The location and extent of registered Indigenous Sites;
- Ecologically sensitive vegetation, to be advised once the locations of the excavations are identified;
- Areas of existing ground disturbance;
- Adverse weather conditions (ie more than 1 day of rainfall)

The location and extent of the PADs, registered Indigenous sites and ecologically sensitive vegetation will be overlaid on the site plan prior to undertaking fieldwork to determine the limitations that these constraints may place on the location of archaeological testing excavations. If necessary the trench locations may be altered to accommodate these constraints.



### 4.3 Excavation Methodology

The project is being conducted under Part 3A of the *Environment Planning and Assessment Act 1979*.

Two areas within the eastern part of the study area have been selected for further investigation using excavation techniques. These areas are at the southern and northern ends of the supposed location of the miners houses (see map in Attachment 1).

The process for excavation will involve the following:

- 1) A local survey datum, keyed to Australian Height Datum will be established to record the location and levels of extant deposits and features;
- 2) Marking of the two large areas to be excavated (each approximately 50m×50m), and recording of the extent of the areas on differential GPS;
- 3) Detailed pedestrian survey of these areas, GPS recording, retrieving and bagging of any historical artefacts detected on the surface.
- 4) Machine stripping of overburden, mainly grass, covering the areas;
- 5) Detailed examination of the topsoil once overburden has been removed to determine areas of interest. Additional overburden removal may be required to allow the extent of the houses (should structural features be identified) to be planned within the area investigated.
- 6) If any features are revealed these should be cleared by hand. Excavation will be by archaeological (stratigraphic) context. Any features detected will be recorded on a detailed site plan.
- 7) Marking of locations of approximately four 2m×8m trenches, in areas of interest, two in each 50m×50m area. The exact location of these trenches will be determined once the overburden has been removed. Should structural features be identified, the trenches will be located to allow investigation of the extent of the features and establish the integrity of the deposits within the larger context.
- 8) Excavation of trenches by archaeological context to maximum depth of 30cm (the base of historic artefacts identified during previous investigations).
- 9) Detailed manual investigation (using hand tools) and archaeological documentation (per standard methods) of specific features identified the excavated areas.
- 10) Collection of soil samples will be undertaken if a privy is encountered during the excavation. These will be sent to a NATA accredited laboratory for appropriate analysis.
- 11) On completion of the excavation, any archaeological features identified will be covered with geofabric and the area will then be backfilled with the overburden previously removed.

The objective of this work will be exposure of historical features for (i) recording, and (ii) to facilitate decision-making re their future management.

If evidence of the houses or other structures and significant relics are uncovered then the NSW Heritage Branch (Department of Planning) and Infrastructure Projects will be notified.



#### **4.4 Contingency for the discovery of Indigenous cultural heritage material during works**

At any time during the historical archaeological excavation, if Indigenous cultural heritage material, features and/or deposits are found, all works that could potentially harm the cultural heritage must cease (including stopping all works within at least 10 m). Only works that are required to comply with occupational and environmental health and safety standards and/or to protect the cultural heritage should occur. Excavation works may recommence when the Field Supervising Archaeologist has deemed that appropriate mitigation or salvage has occurred.

Where Indigenous cultural heritage material is discovered in the works area, Pacific National must engage an archaeologist to record in detail the location and context of the material and decide if the material forms a new site or is part of a previously recorded site. The archaeologist must complete and submit relevant AHIMS recording forms to DECCW. The archaeologist should facilitate the involvement of the registered Indigenous stakeholders and in consultation decide the most appropriate course of action for the material. This may include reburial of the material in a durable container to an area unlikely to be disturbed. If reburial is undertaken, the location of this should be recorded and all documentation provided with an updated AHIMS site card.

If the cultural heritage material and/or deposits found are deemed to be *in situ* and of moderate or higher significance, it is preferable to avoid impact if possible. If avoidance is not possible, a suitably qualified and experienced archaeologist must be engaged to conduct salvage excavation. The archaeologist must facilitate the involvement of the registered Indigenous stakeholders and develop a suitable methodology for salvage excavation in consultation with them. This may include, but not be limited to, a 1m x 1m manually excavated trench (or more trenches of differing dimensions where appropriate and necessary) surrounding and encompassing the material/deposit, proceeding stratigraphically where possible and if not, in 5cm spits. This should also include, where possible and appropriate, collection of samples suitable for radiometric dating.

The archaeologist and the registered Indigenous stakeholders should then agree on the most appropriate course of action for the salvaged material and appropriate custodianship.

#### **4.5 Recording**

All historical artefacts or structural remains will be recorded in accordance with the NSW Heritage Office publication *Archaeological Assessments* (1996), in the following manner:

- All the location (x, y, z) of all historical artefacts will be recorded on a field context recording sheets for each trench.
- Scaled site plans and profile or cross-section drawings will be prepared showing the location of all archaeological deposits and features revealed by excavation. These will be located relative to the site datum;
- The location, dimensions and characteristics of all archaeological features and deposits will be recorded on sequentially numbered context recording sheets;
- A stratigraphic matrix showing relationship of context will be prepared; and
- Colour digital photographic recording of all phases of the work will be undertaken.



#### **4.6 Analysis, Conservation and Storage of Artefacts**

In accordance with the NSW Heritage Office publication *Archaeological Assessments* (1996), all artefacts collected during the fieldwork will be recorded in an artefact catalogue, which detailed location, provenience, depth, material and datable information where available.

Temporary storage of artefacts recovered will be at SKM offices, Armadale Victoria. All artefacts will be labelled and stored in a locked secure storage area. Post-excavation analysis will be undertaken by appropriately qualified staff, namely Peter Holmes or Rose Reid depending on the classes of artefacts recovered.

Greta Historical Museum has indicated that it will be the custodian for the historic material.

If significant finds requiring conservation are uncovered the need for and cost of conservation will be determined and a decision made in consultation with the Heritage Branch.

The packing and labelling of the collection will be to specified standards agreed with the receiving institution.

#### **5. Reporting**

The draft Historical Heritage Assessment report will be updated to include the results of the additional excavation as proposed. The report will meet the requirements of section 4.11 of the Heritage Office publication *Archaeological Assessments* (1996).

#### **6. Project Team**

We propose to undertake the project using the following team:

- Project Director: Vanessa Edmonds;
- Project Manager: Rose Reid
- Field Supervising Archaeologist: Robyn Jenkins
- Field Archaeologists: Vanessa Edmonds, Joseph Brooke, Rachel Loizou.

##### **Rose Reid**

*Project Manager*

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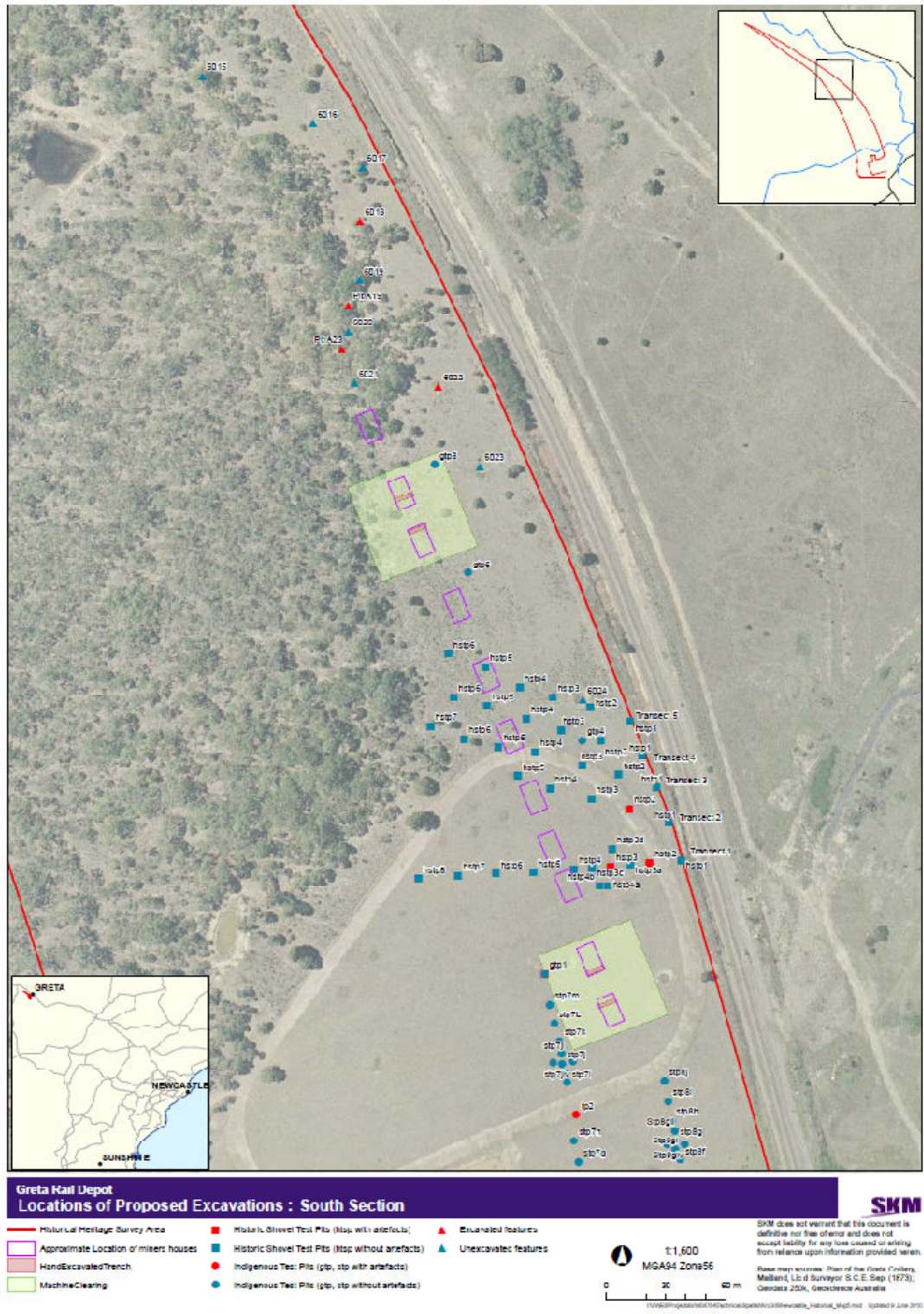
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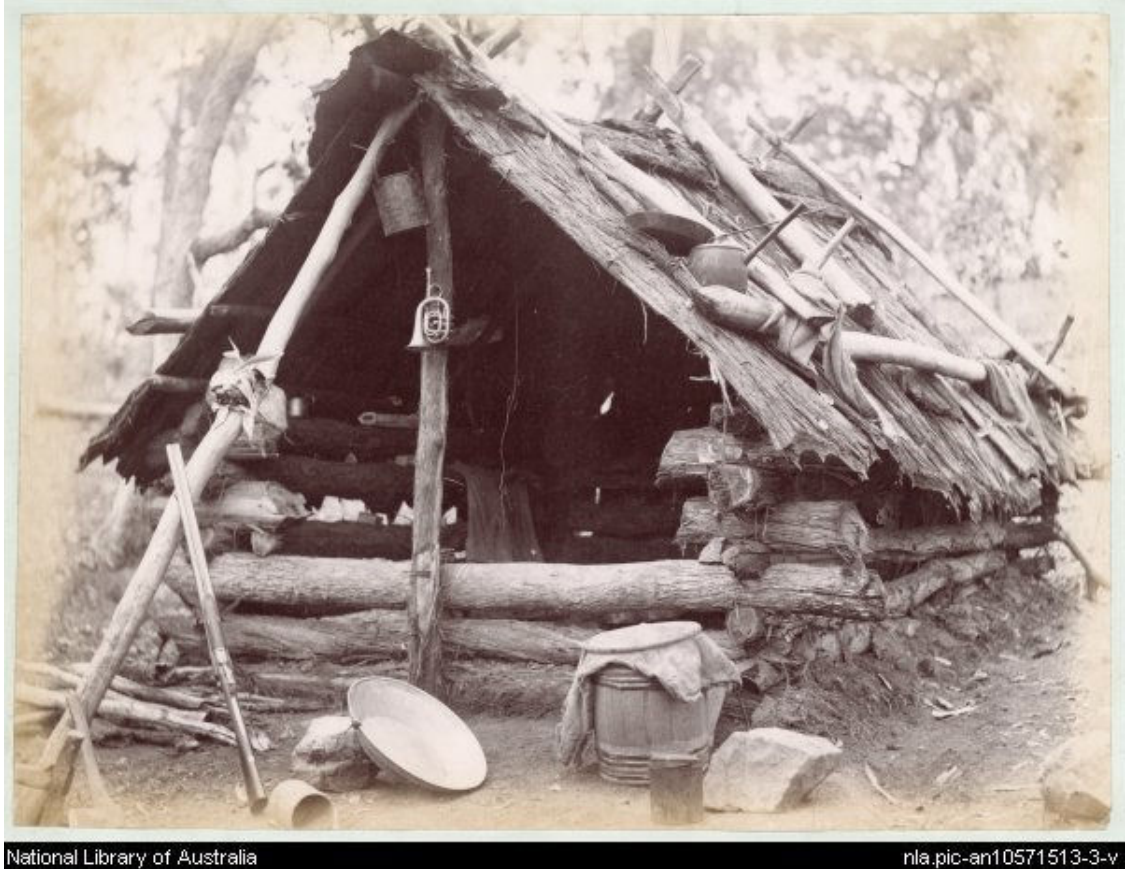
### Attachment 1: Map of Proposed Excavation Locations







## Attachment 2: Sample Photos of Miners Huts



Miners Hut, East Maitland, NSW





## Appendix 2

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Copies of Field Records

