ALKANE RESOURCES LTD

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Tomingley Gold Project

Cultural Heritage Assessment

October 2011

Prepared by

OzArk Environmental and Heritage Management Pty Ltd

Specialist Consultant Studies Compendium

Volume 2, Part 5

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Tomingley Gold Project

Cultural Heritage Assessment

Prepared for: R.W. Corkery & Co. Pty Limited
62 Hill Street
ORANGE NSW 2800

Tel: (02) 6362 5411
Fax: (02) 6361 3622
Email: mail@rwcorkery.com

On behalf of: Alkane Resources Ltd
65 Burswood Road
BURSWOOD WA 6979

Tel: (08) 93289411
Fax: (08) 9227 6011
Email: ichalmers@alkane.com.au

Prepared by: OzArk Environmental and Heritage Management Pty Ltd
PO Box 2069
DUBBO NSW 2830

Tel: (02) 6882 0118
Fax: (02) 6882 0630
Email: jodie@ozarkehm.com.au

October, 2011

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EXECUTIVE SUMMARY

Alkane Resources Ltd (Alkane) proposes to develop the Tomingley Gold Project (TGP). The TGP, should it be approved, would involve the establishment of mining, gold processing and waste management operations over an area of approximately 776ha ("the Mine Site") to the immediate south of the township of Tomingley (referred to as the Mine Site Study Area), a 46km water pipeline from the Mine Site to Narromine (referred to as the TNWP Study Area), and a 20km electricity transmission line to bring power from Peak Hill (referred to as the PHTETL Study Area) (**Figures 1** to **4**). OzArk Environmental and Heritage Management Pty Ltd (OzArk) was commissioned to undertake survey to assess the presence and distribution of Indigenous and European sites within areas of potential future disturbance within the three study areas.

Indigenous Heritage

A total of sixty (60) Aboriginal sites were recorded during Indigenous heritage component of the assessment.

Four recorded sites (TGP-OS2, TGP-ST7, TGP-ST10 and TNWP-OS1 with PAD) would be directly impacted by the TGP, with other sites requiring the implementation of mitigation measures to ensure their conservation. Recommendations for the management of these sites have been incorporated into a draft Cultural Heritage Management Plan (CHMP) for the TGP prepared in consultation with the Aboriginal community and the NSW Office of Environment and Heritage (OEH).

A summary of the proposed management measures for the identified Aboriginal sites that would or could be impacted by the TGP is as follows.

Mine Site Study Area

- Site TGP-OS2 is located along and adjacent to the proposed Main Site Access Road of the Mine Site and would require management as follows.
  - Geofabric followed by sand or gravel should be laid over the proposed Main Site Access Road to build up the ground surface to protect the deposits of TGP-OS2 below. This would ensure that the road does not physically impact the site and the artefacts that comprise it.
  - Hand planting native trees and shrubs alongside the access road. This would act as a preventative measure against vehicles going off the track and inadvertently damaging artefacts of site TGP-OS2.
- Site TGP-ST7 is the carved tree located within the footprint of the Wyoming One Open Cut. Due to the high significance of this site to the local community and beyond, and because the interpretation of this tree as a burial tree cannot be ruled out, the following measures are to be implemented.
  - With agreement of the Traditional Owners, it would be appropriate if the outer bark of the tree could be peeled off by a qualified arborist so as to determine whether or not evidence of carving is present, hence making a more accurate determination of whether the marks on the tree relate to carving, or are a combination of ringbarking marks and natural erosions into the heartwood.

- If the presence of carving can be more accurately determined, then the potential presence of burials can also be either be elevated or reduced accordingly.

Should the carving appear to have been a likely feature of the tree, the following management would apply.

- The opinion of a suitably qualified Ground Penetrating Radar (GPR) technician or geomorphologist, with appropriate experience in remote sensing technology, should be sought to make a decision as to whether GPR is likely to be effective in the identification of a burial within a c. 50 m radius of the tree (effectiveness is dependent on soil types, saturation, etc.). As research indicates the carving on the tree will be facing towards the burial if it is present, it is considered that a 180º sweep of the GPR should be adequate coverage, although a larger area may be assessed if desired.
- If GPR is employed and a positive result is forthcoming with respect to the likelihood of a human burial, further community consultation should be undertaken to inform all stakeholders of this result and then the following procedures should be employed.
  - Formal archaeological excavation for human remains should be completed over the area suspected of containing the burial for the exhumation of the remains. Notification of the NSW Police would be required and a formal determination made of the age of the remains to ensure they do not date to the last 100 years.
  - The remains should then be managed in accordance with the wishes of the Aboriginal community. This is likely to require ceremony and reburial at a nominated location.
- If GPR is not considered an effective tool for the identification of a burial location, or if the GPR results indicate no specific location as producing a likely signature for a burial, then the following ground surface disturbing works should be undertaken to physically determine the presence or not of human remains.
  - A grader should be used to strip off layers of soil, 5 cm at a time, within a 50 m radius of TGP-ST7. This should be undertaken in the presence of Aboriginal community representatives and/or an archaeologist who can inspect each pass of the grader for any evidence of human remains or other archaeological material. Sieves may be used to assess windrowed soil should there be concern that bone may be present within the removed deposits.
  - Once an area has been assessed in this manner, down to deposits deemed to be too deep to contain an Indigenous burial, the area can then be considered as clear of human remains.
- Once the issue of human remains and an inhumation[1] has been settled, then focus can shift to the removal of the tree. The following techniques may be the most appropriate, but would require further consultation and input at the time of finalisation of the CHMP.

[1] Inhumation is defined as: the ritual placing of a corpse in a grave.

- The exact method for the removal of this tree should be discussed by Alkane, the service provider for the tree removal, the Aboriginal community representatives and the archaeologist in a pre- tree removal meeting.
- The likely methods may be to first use a cherry picker to assess the large hollow high up in the tree to ensure that no burial present. (Although unlikely, Aboriginal community representatives did note that this was occasionally a location in which a burial may be placed.)
- Once sure that no burials are present, the upper branches can then be removed by an appropriately qualified operator.
- Once the trunk is shortened to an acceptable size, the tree may then be chain sawed at the base below the height of the scar and the final trunk portion transported to the location chosen by the Aboriginal community.

Should the carving appear to have been to have not been a likely feature of the tree, the following management would apply:

- A determination would be made with community representatives as to the likelihood of it being a scarred tree.
- If it is a scarred tree then it would need to managed as per other scarred trees within the project area that are to be impacted (ST10).
- If is not thought to be a scarred tree and carving has been discounted, then no further management will apply.

- Site TGP-ST10 is a possible scarred tree located within the footprint of Waste Rock Emplacement 3. As TGP-ST10 cannot be avoided, management for the removal of this tree would be required. Depending on the wishes of the Aboriginal community, the scarred portion of this tree may be removed to a keeping place (to be determined).

Site TGP-OS1 would not be directly impacted by the Main Site Access Road and could be managed through fencing off the northern gate area into the access track to the Mine Site. This very small eroded site is located west of this gate and if a temporary fence is erected while the access track is being constructed, it should ensure that no construction vehicles access this area.

- Sites TGP-ST8 and 9 are scarred trees close to the Newell Highway and in proximity to a section of the proposed amenity bund between the Mine Site and Newell Highway. To ensure these trees are not damaged by works in the area, they should be fenced off around the drip line for the construction period.

TNWP Study Area

- TNWP-OS1 with PAD on 'Woodlands' near Narromine was determined to require further assessment to determine whether archaeological deposits / burials were present and to characterise their likely nature, extent and integrity. Consequently, a limited programme of test pitting across the crest of the capped terrace landform and along the proposed impact footprint for the pipeline by an archaeologist and members of the local Aboriginal community was undertaken. Test excavations were undertaken on 1 and 2 February 2011 in six excavation pits confined to the area of TNWP-OS1 with PAD that would be impacted by the TGP water pipeline. Major findings of the archaeological test programme were as follows.
  - The lithic assemblage of the excavation consists of a total of 121 artefacts. One hammer stone was recorded, along with several cores.
  - No archaeological stratification was noted in any of the excavation pits.
  - Artefact densities ranged from medium to very low across the excavation area with maximum densities of 27.2 artefacts per cubic metre of excavated material.
  - The excavation assemblage is dominated by quartz with 71.1% of all excavated artefacts of this material. The other dominant raw material used was chert with 14% of the artefacts being from this material. The remaining 14.9% of material came from a mix of silcrete, rhyolite, mudstone, and other fine grained siliceous materials.
  - In most cases, the artefacts recorded in the excavations came from spit 1 (0–20cm) with a few artefacts from spits 2 and 3. Therefore it is evident that most of the material was concentrated close to the surface.
  - None of the test excavation squares excavated at site TWNP-OS1 displayed evidence of a complex site features. No features were recorded from the excavations.
  - The test excavation programme has established that site NTWP-OS1 with PAD has, at its eastern margins, a low artefact density, shallow deposits and a high likelihood of prior disturbance.
  - As such, in the area where the TNWP is proposed to be located, the site possesses low scientific significance and the findings demonstrate that further archaeological investigation is unwarranted.
  - Discussions on site with the representatives of the Registered Stakeholders who participated in the excavations established their agreement with these findings and with the recommendation that no further archaeological investigation of the site was warranted.
  - The test excavations did establish that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between the test excavation pits). These artefacts are likely to be in the top 20cm of soil. In light of this, the following recommendations are made in relation to the construction of the TGP water pipeline:

- When the water pipeline is excavated in the area of TNWP-OS1 with PAD, a suitably qualified person from the Aboriginal community should be in attendance to monitor the excavation and to retrieve any further Aboriginal artefacts;
- Care should be taken when excavating in the vicinity of TNWP-OS1 with PAD to ensure minimal disturbance to the ground surface beyond what is necessary to lay the pipeline;
- Cars and machinery should, as much as is practical, be confined to the dirt road when in the vicinity of TNWP-OS1 with PAD;
- Any soil excavated for the water pipeline should be replaced in the area and not removed to some other location;
- Should significant numbers of Aboriginal artefacts (i.e. a cluster of 100+ artefacts) be noted during construction, work should cease and the OEH Dubbo office (02 6841 0900; 8:30am–4:30pm, Monday–Friday) should be notified on how to best proceed; and
- Should human skeletal material be noticed, all work should cease and the local police contacted. If the skeletal remains are deemed to be historical, OEH and the Narromine LALC should be contacted to determine how to best proceed.

- It is noted that all recorded scarred trees along the TNWP route are able to be avoided. These sites should be identified in the field prior to any impacts occurring and a suitable curtilage (around the drip line of the tree) delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction for the pipeline.
- Possible Aboriginal camping area at Tomingley end of the TNWP:

The corner of land between Tomingley West Road, Gundong Creek and the Narromine Road has been identified as a possible camping spot (amongst others) for Aboriginal families in the late 1800's and early 1900's. Scarred trees have been recorded in this area, as they have in most areas of significant remnant bushland over the local area. As a precautionary measure, it is advocated that the proposed section of pipeline that runs through this area should be monitored by members of the local Aboriginal Stakeholders during construction. Should material potentially relating this camping be uncovered, works would need to cease in that area while an analysis of the material and its significance was undertaken.

PHTETL Study Area

- PHETL–ST1, ST2 and ST3 can all be avoided. These sites should be identified in the field prior to any impacts occurring and a suitable curtilage delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction for the project.
- For any additional impacts, e.g. new access tracks or any changes to the assessed easement, Alkane should ensure that previously avoided sites remain so and that if impacts are proposed to unassessed areas, these will require Aboriginal heritage assessment prior to construction.

General

- Staff and contractors should undergo cultural heritage inductions alerting them to the location of recorded cultural heritage sites within the study areas and to their legislative protection under the *National Parks and Wildlife Act 1974* (NPW Act). These inductions should be recorded in a register, with all those present signing their understanding and acceptance of these guidelines.
- Should the proposed impact footprint change, the Proponent must take care to ensure that sites currently avoided by the TGP remain undisturbed, and that impacts remain within previously assessed areas. Should impacts be altered, revision may be needed for the management measures proposed.
- Should any previously unidentified 'objects' or other Aboriginal sites (such as burials) be uncovered during the course of earthworks, work in that area should cease and the DECCW Western Regional Archaeologist (Dubbo Office) and local Aboriginal community contacted to discuss how to proceed.

European Heritage

Three of the eight identified European heritage sites would be directly disturbed, being site TGP-HS4, TGP-HS5 and TGP-HS6.

- TGP-HS4 is a coin found within the Wyoming One Open Cut area. This has already been collected for safekeeping.
- TGP-HS5 is agricultural machinery of low local significance, comprising common rural remains that are much damaged. Before they are removed, the following should occur:
  - archival recording through photography should be undertaken to document them in detail; and

    further consultation with local landholders to try to obtain any knowledge that may be associated with this machinery.
- Site TGP-HS6, the remains of a dwelling and associated material that may include some *in situ* deposits with relics beneath the mounded bulldozed material, is located within the Waste Rock Emplacement 3 area. Further research through landholder consultation has determined that these remains may be *in situ.* If avoidance of this site is not possible, the following management should be undertaken.
  - Assessment and archaeological investigation according the *Historical Archaeology Code of Practice*, published by the Heritage Office, Department of Planning (2006) and the Australia ICOMOS *Burra Charter* as 'good heritage practice' should be undertaken, with a possible eventual need to undertake limited excavations at the site so as to determine more about it and hence make a more informed assessment of its significance.
- TGP-HS1, TGP-HS2 and TGP-HS3 are beyond the proposed disturbance footprint and Alkane must take care to ensure they remain conserved within the parameters of the TGP.
- The surveyor's trees, TNWP-HS1 and TGP-HS2, are located within the TNWP study area but would not be impacted by the pipeline construction. Alkane should ensure these trees are fenced off during construction to ensure no inadvertent impacts occur.

1. INTRODUCTION

1.1 PROJECT SCOPE

This report was commissioned by R.W. Corkery & Co. Pty. Ltd. (RWC) on behalf of Alkane Resources Ltd (Alkane). OzArk Environmental and Heritage Management Pty Ltd (OzArk) was briefed to undertake survey to assess the presence and distribution of Aboriginal and European sites within areas of potential future disturbance associated with the Tomingley Gold Project (TGP), referred to hereafter as the "Project Site" (**Figures 1** to **4**).

This investigation included the following components.

- Searches of all relevant registers of information for Aboriginal heritage namely:
  - the NSW Department of Environment, Climate Change and Water (DECCW) Aboriginal Heritage Information Management System (AHIMS);
  - the NSW Heritage Office State Heritage Register and Inventory;
  - the Australian Heritage Database;
  - Environment Protection and Biodiversity Conservation Act 1999 online data-base (2008); and
  - the Parkes Local Environment Plan (LEP) 1990 and the Narromine LEP1997.
- Review of current legislation including:
  - the *New South Wales Heritage Act 1977* (HA 1977);
  - *New South Wales National Parks & Wildlife Act 1974* (NPW Act 1974);
  - *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999); and
  - *the Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Act 2005* (EP&A Act 2005).
- Review and synthesis of available relevant literature including previous Aboriginal heritage assessment reports, academic theses / articles and available works on the history and ethnography of the Narromine and Tomingley region.
- Consultation with the Aboriginal community as per the *Interim Community Consultation Requirements* (ICCRs) (DEC 2004) as referred to in the *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005)
- Pedestrian field survey to identify and record Aboriginal and European cultural heritage sites and relics over three distinct study areas of the Project Site.
- Undertake heritage sensitivity zoning of parts of the three study areas with poor visibility.

- Assessment of the significance of recorded sites and the formulation of appropriate management strategies.
- Completion of archaeological test excavation of one Aboriginal site to determine its nature, extent and integrity, so as to inform appropriate management.
- Completion of documentary evidence (e.g. DECCW site cards, NSW State Heritage site cards) for any sites/relics located during the survey for the notification of the relevant authorities.

1.2 TGP OVERVIEW

Alkane proposes to develop the TGP, which would involve the establishment of mining, gold processing and waste management operations over an area of approximately 776ha ("the Mine Site") to the immediate south of the township of Tomingley (referred to as the Mine Site Study Area), a 46km water pipeline from the Mine Site to Narromine (referred to as the TNWP Study Area), and a 20km electricity transmission line to bring power from Peak Hill (referred to as the PHTETL Study Area) (**Figures 1** to **6**). This report details the heritage assessment of these three study areas of the Project Site.

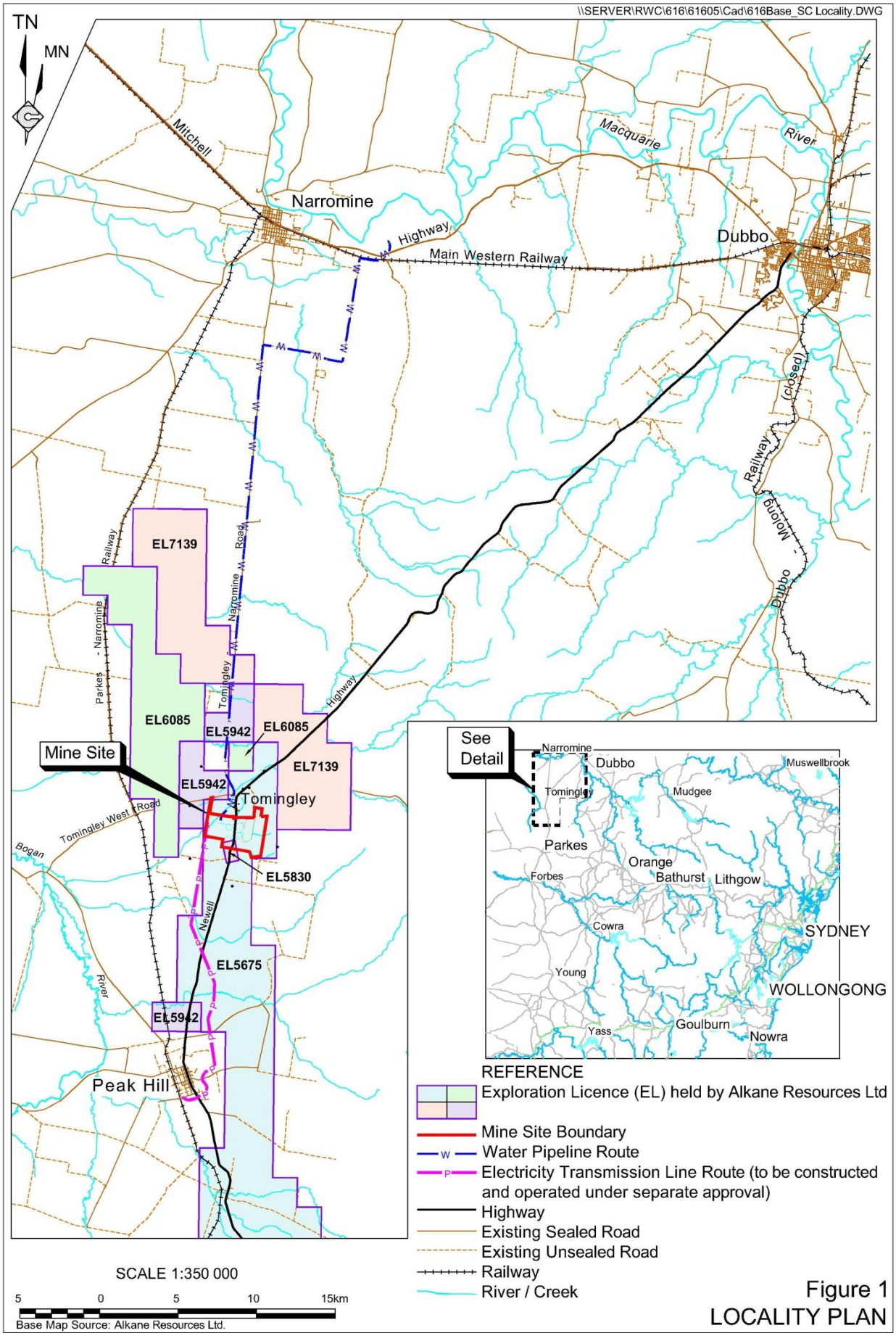
The life of the TGP would be approximately 8 to 11 years.

Mine Site Operations

All mining, processing and related activities would be undertaken within the Mine Site located to the south of Tomingley in Central West NSW (**Figure 1**). **Figure 2** presents the proposed locations of these activities including:

- four open cut mining operations (Caloma One [19ha], Caloma Two [maximum of 9ha], Wyoming One [19ha] and Wyoming Three [10ha]);
- one underground mining operation from the floor of Wyoming One;
- three waste rock emplacements covering a combined area of approximately 129ha;
- various haul roads, including an underpass under the Newell Highway, and a run-of-mine (ROM) pad;
- a processing plant, incorporating a crushing and grinding circuit, a standard carbon-in-leach (CIL) processing plant and associated infrastructure;
- a residue storage facility (approximately 49ha);
- an office area, incorporating site offices, workshops, ablutions facilities, stores, car parking, and associated infrastructure; and
- ancillary infrastructure, including the Main Site Access Road and intersection with the Tomingley West Road, soil stockpiles and surface water management structures.

The Mine Site Study Area covers approximately 776a, straddling the Newell Highway south of Tomingley (**Figure 2**). Specifically the Mine Site Study Area will traverse nineteen (19) lot and DP's and road reserve associated with the Newell Highway as shown in **Figure 3**.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MN
Mitchell
Macquarie
River
Narromine
Highway
Main Western Railway
Dubbo
Railway (closed)
Molong - Dubbo
Railway
Narromine - Parkes
Road
Tomingley
Highway
EL7139
EL6085
EL5942
EL6085
EL7139
Mine Site
EL5942
Tomingley
Tomingley West Road
Bogan
EL5830
Newell
Highway
EL5675
River
EL5942
Peak Hill
See Detail
Narromine
Dubbo
Muswellbrook
Tomingley
Mudgee
Parkes
Orange
Forbes
Bathurst
Lithgow
Cowra
SYDNEY
Young
WOLLONGONG
Yass
Goulburn
Nowra
REFERENCE
Exploration Licence (EL) held by Alkane Resources Ltd
Mine Site Boundary
W Water Pipeline Route
P Electricity Transmission Line Route (to be constructed and operated under separate approval)
Highway
Existing Sealed Road
Existing Unsealed Road
Railway
River / Creek
SCALE 1:350 000
5 0 5 10 15km
Base Map Source: Alkane Resources Ltd.
Figure 1
LOCALITY PLAN

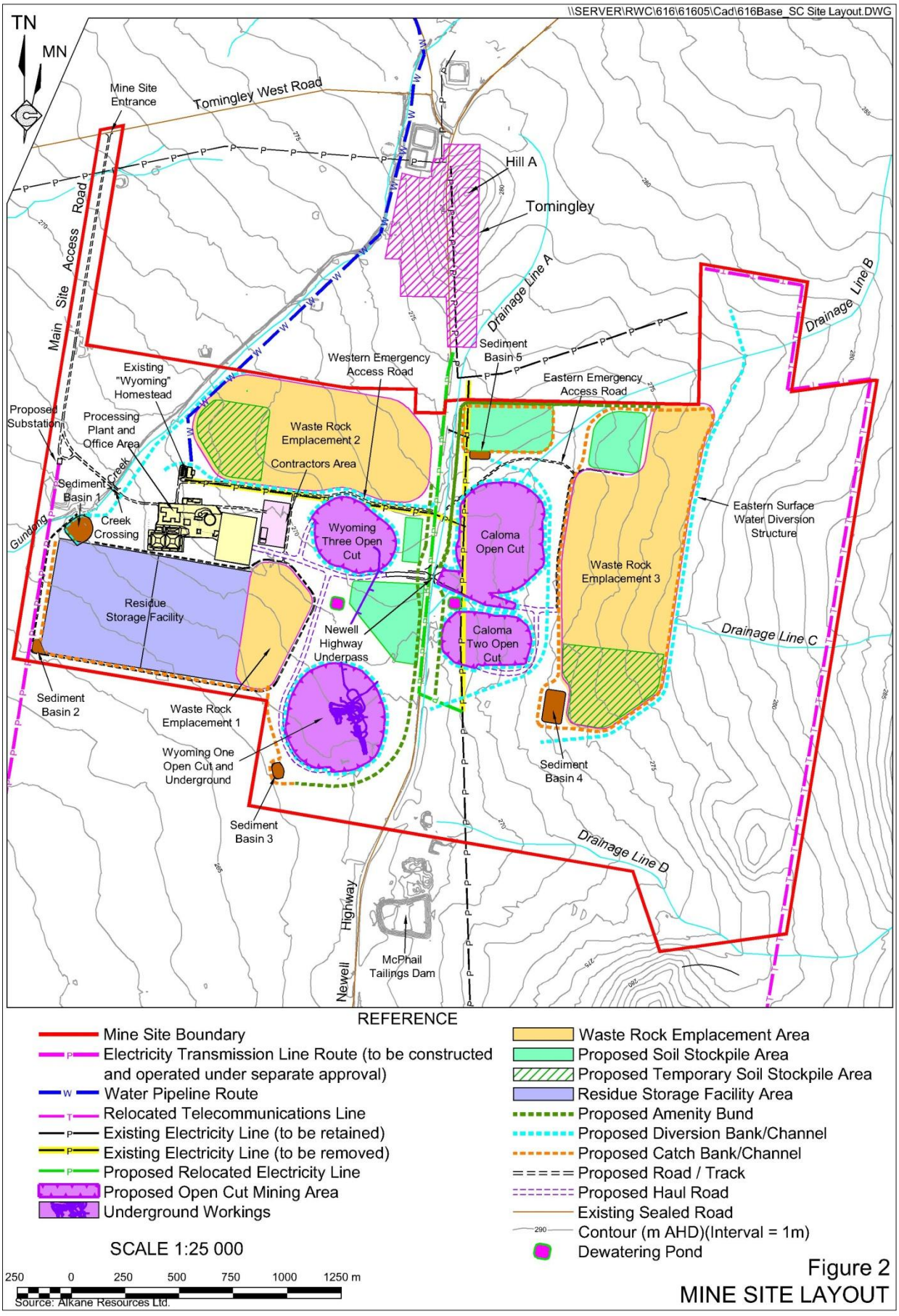


Figure 2
MINE SITE LAYOUT

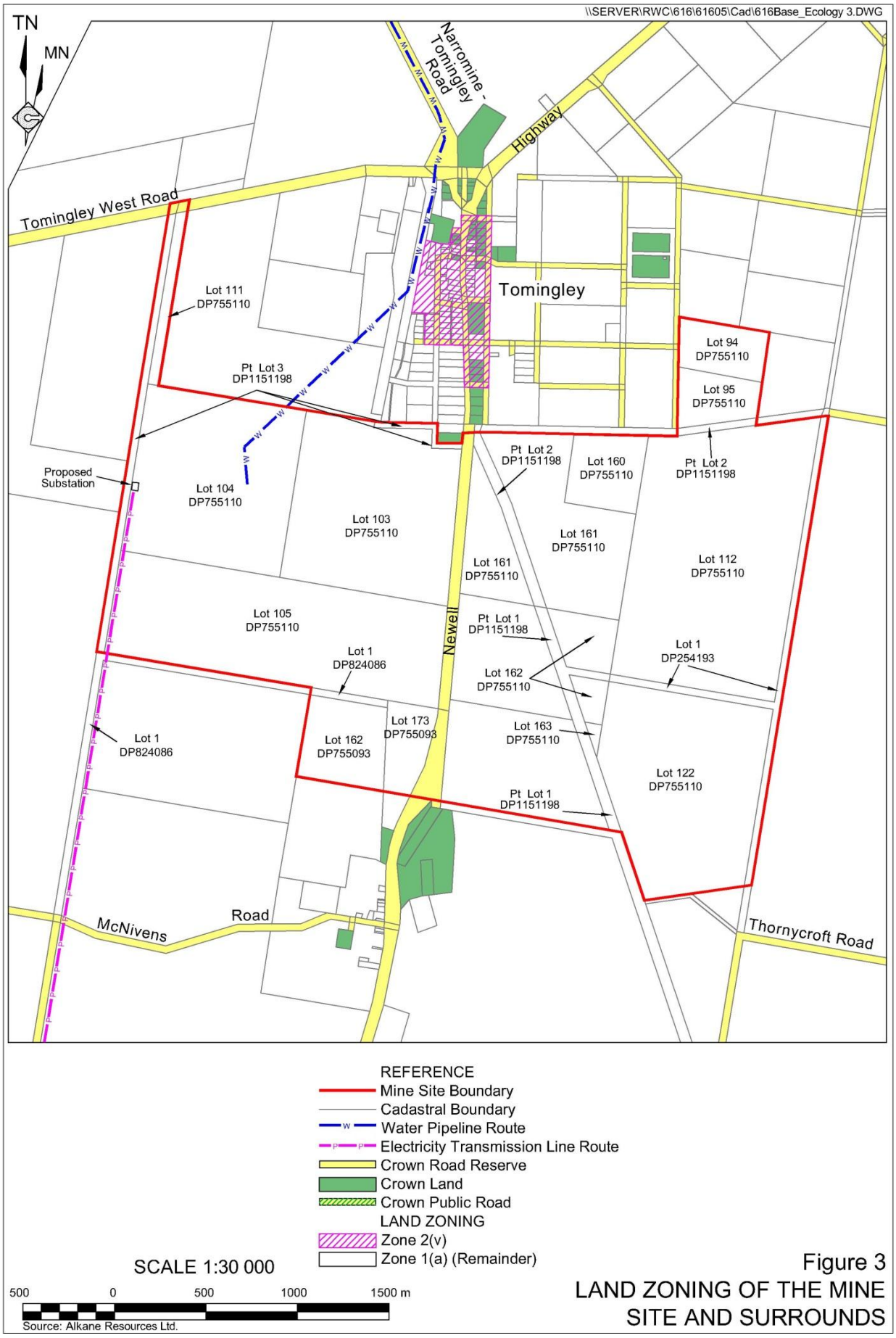


Figure 3
LAND ZONING OF THE MINE SITE AND SURROUNDS

Peak Hill to Tomingley Electricity Transmission Line (PHTETL)

This easement extends from Peak Hill Substation to Tomingley (east of Newell Highway and crossing to the west of Newell Highway midway to the Mine Site transformer). The proposed PHTETL would require the creation of a 30 m wide easement and will consist of 100 poles spaced at between 190 and 210 m. Further details of pole positions can be found in **Appendix 5** which provides the aerials used in the field assessment and the GPS positions of poles also use in the field assessment. The PHTETL Study Area is approximately 20km in length and 30m wide and incorporates all areas of the proposed electrical easement for the proposed power transmission line from the Peak Hill substation to the Mine Site (**Figure 4)**.

Tomingley to Narromine Water Pipeline (TNWP)

The potential easement for the water pipeline tracks a north-south direction from the "Woodlands" property approximately 8km east of Narromine, following the Narromine-Tomingley road reserve fence-line and is expected to be c. 46km long within road reserves associated with:

- the Mitchell Highway;
- Webb Sidings Road;
- Sunnyside Lane;
- Bootles Road;
- Pinedene Road;
- Narromine-Tomingley Road;
- Tomingley West Road;
- the easement for the Main Western Railway; and
- the private property "Woodlands" (**Figures 5** and **6**, detailed in **Appendix 5**).

The proposed pipeline (315mm OD poly) would be predominantly located on the eastern side of the road corridor from Tomingley to Narromine and require a disturbance area the width of a backhoe (c. 3 m) along its length. The pipeline would be buried approximately 1 m below the surface for the entire pipeline route. The only places the proposed pipeline will cross the road corridor will be near Backwater Cowal (just outside of Narromine) and near the junction with the Tomingley West road. Although the impact footprint is not very wide in comparison with the road corridor, the TNWP study area included the entire width of the road corridor as the pipe would be flexible and as such the alignment could be modified to avoid all large trees and substantive patches of vegetation. Only minor clearing would therefore be required.

Alkane would also construct and operate a water pipeline from the groundwater bore(s) located on the "Woodlands" property itself.

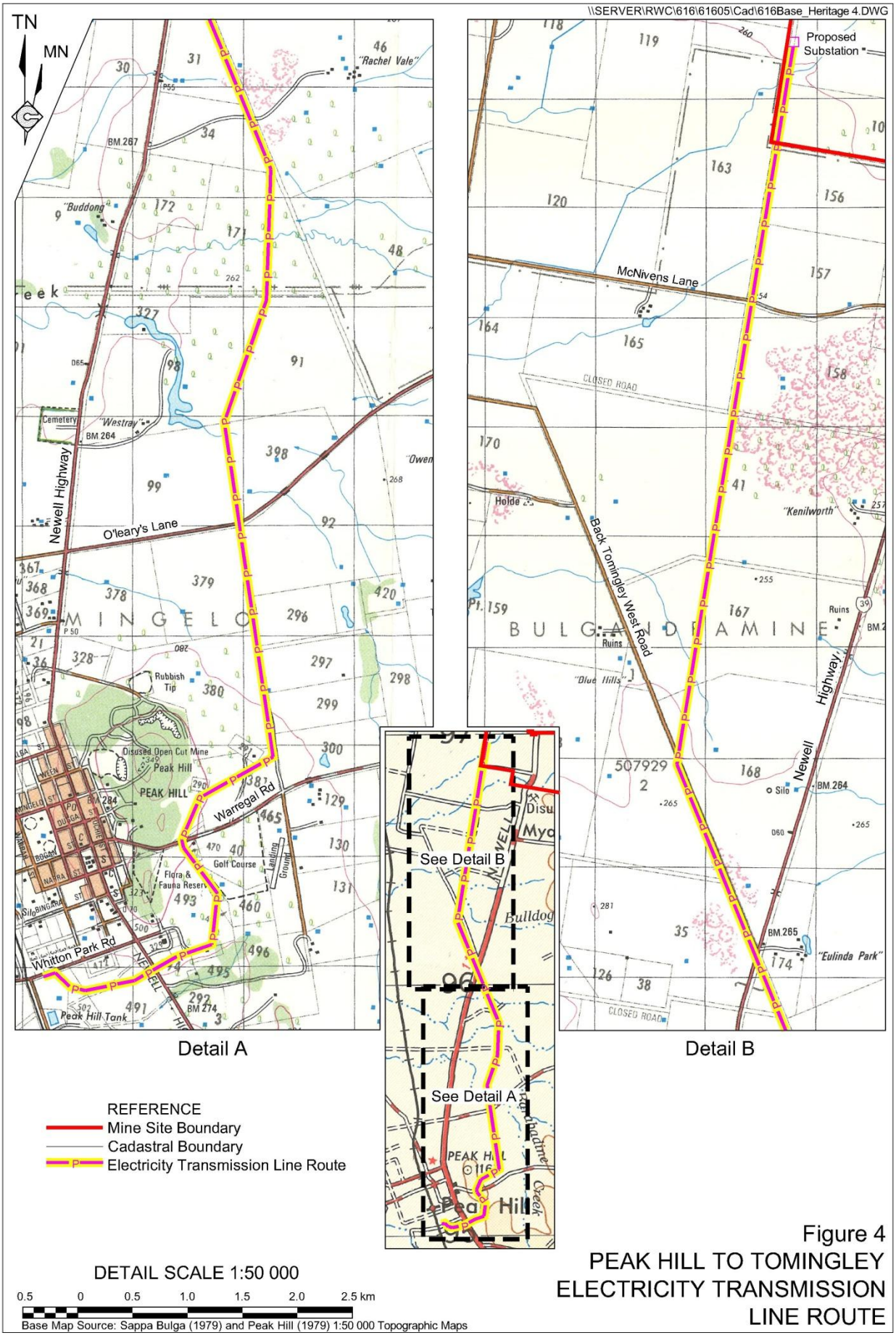


Figure 4
PEAK HILL TO TOMINGLEY
ELECTRICITY TRANSMISSION
LINE ROUTE

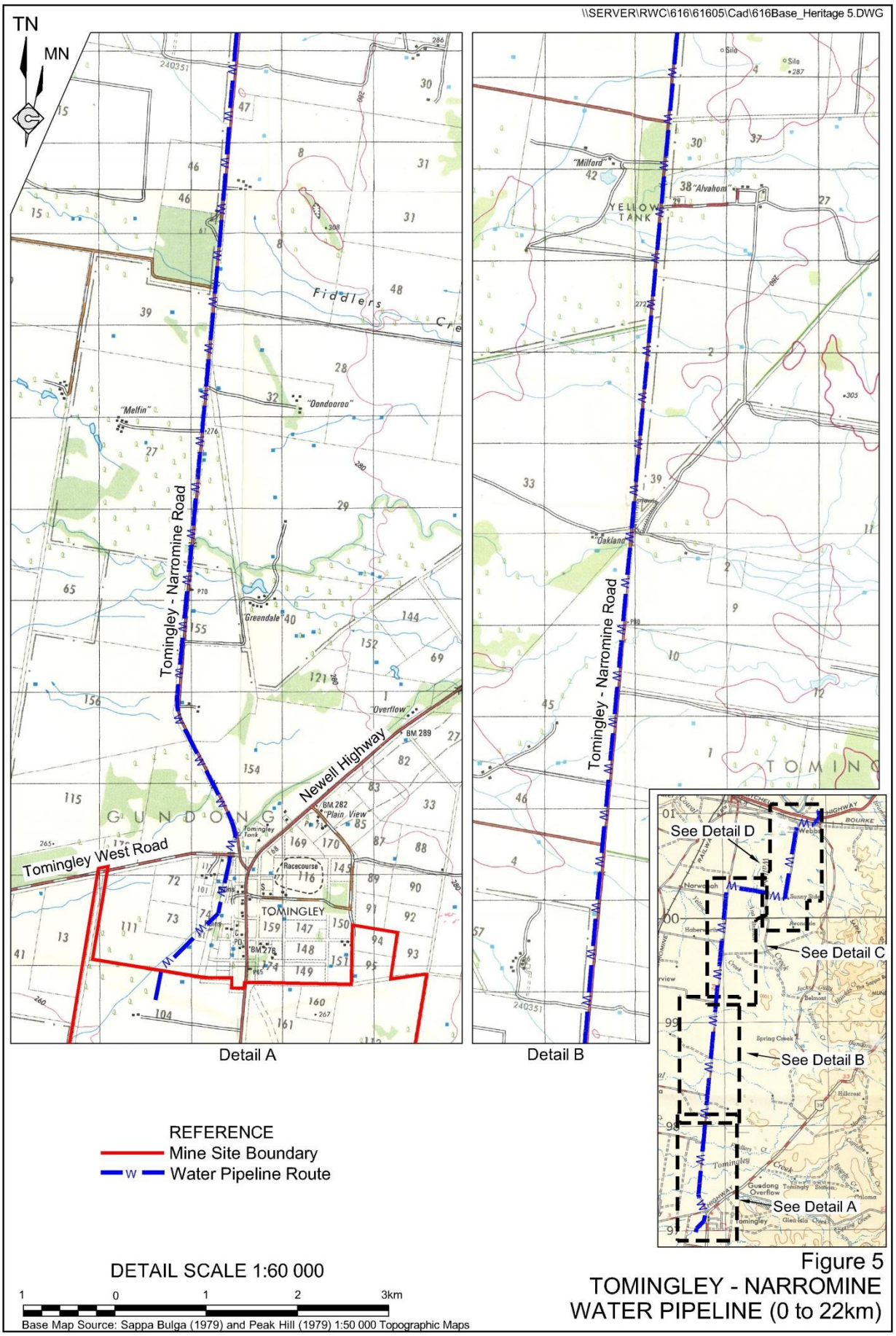


Figure 5
TOMINGLEY - NARROMINE
WATER PIPELINE (0 to 22km)

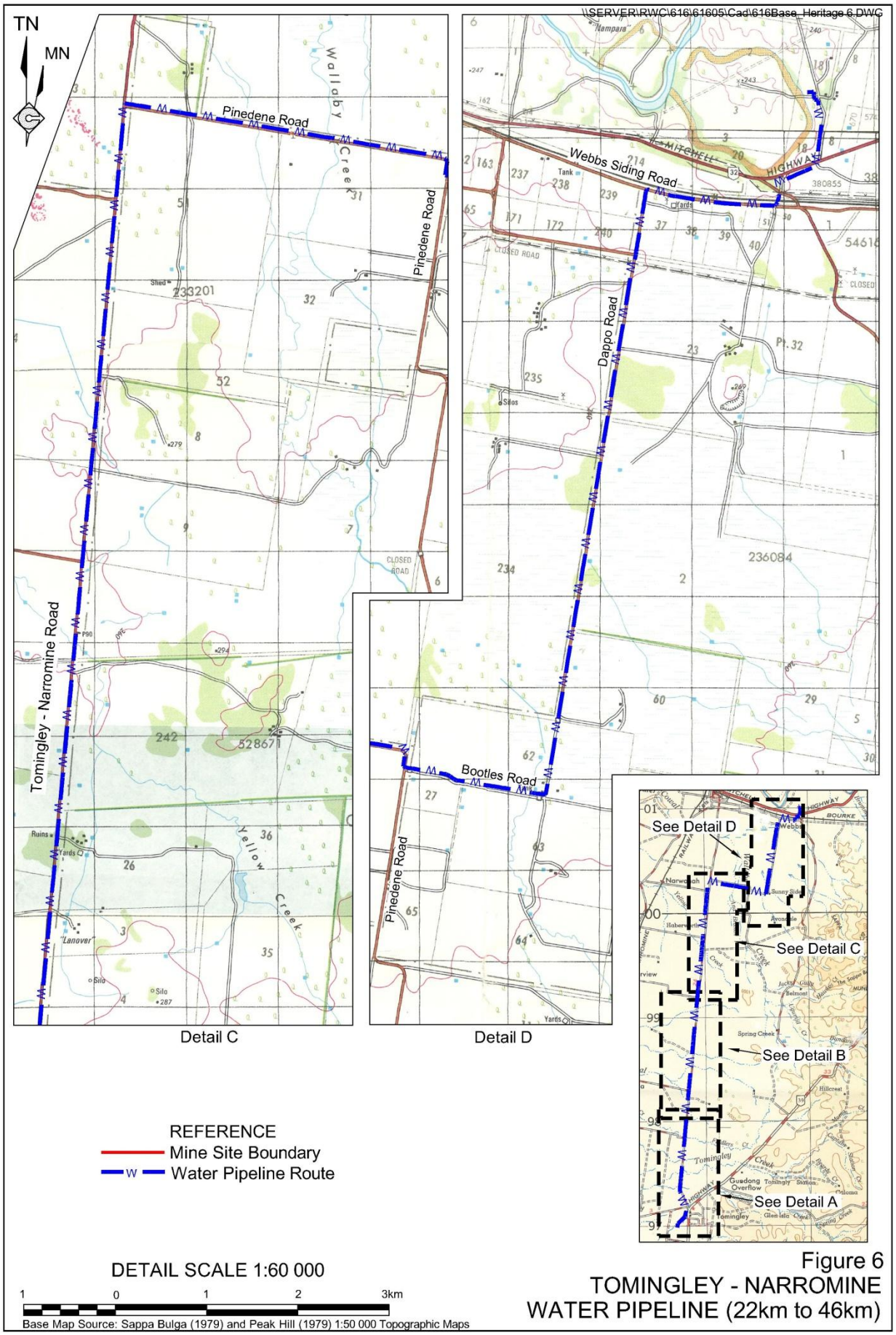


Figure 6
TOMINGLEY - NARROMINE
WATER PIPELINE (22km to 46km)

1.3 PROJECT CONSTRAINTS AND LIMITATIONS

1.3.1 Mine Site Study Area

The primary issue associated with the field inspection over the Mine Site Study Area was the sometimes limited ground surface visibility. West of the proposed Wyoming Three Open Cut, knee high crops / grass reduced ground surface visibility to almost zero. On the eastern side of the highway within the Mine Site Study Area visibility was higher as a result of more recently established crops, and exposed soil and erosion. On already formed tracks and along fence lines through the Mine Site Study Area visibility was high, c. 95 %.

The Mine Site Study Area was divided into paddocks delineated by fence boundaries and land features and numbered according to the survey sequence (**Figure 7**). This allowed assessment to be specific as to the proposed impact footprint and type of disturbance to each paddock within the Mine Site Study Area to form specific management recommendations. An original survey of Paddocks 1 to 16 was undertaken in August 2009. An additional parcel of land was added to the Mine Site Study Area in 2010 (Paddock 17) and surveyed in November 2010. The results of both surveys are included in this report.

It is noteworthy that survey had been previously undertaken of the Newell Highway road corridor along the length of the Mine Site Study Area (OzArk 2004) and this corridor was not resurveyed as part of the current assessment. Results of the original survey have been incorporated into this report.

1.3.2 PHTETL Study Area

Physical survey of the PHTETL Study Area was limited to a c. 20 m wide corridor along the proposed easement (**Figures 4** and **Appendix 5)**.

The PHTETL easement was plotted on a series of A4 aerial photographs supplied by Alkane, which indicated the location of pole positions (**Figure 4**). The GPS points of pole positions are definitive locations of ground surface disturbing activities and thus could be examined in detail[2]. The main constraint was that during field survey, some maps detailing pole numbers did not match GPS co-ordinates precisely and showed a deviation of the PHTETL across roadways.

OzArk attempted to access all areas along the PHTETL, however, permission for access was not provided by one landowner (between pole numbers 71 and 76 – see **Figure 4**). It is noted that this portion of the PHTETL easement would require full assessment prior to the construction of the electricity transmission line.

1.3.3 TNWP Study Area

Full pedestrian survey of the TNWP corridor was undertaken. This enabled complete documentation of the heritage resource across the TNWP Study Area and the proposed impact footprint. There were few issues associated with the field inspection beyond limited ground surface visibility. It is noted that in two places the location of proposed road crossings provided initially by Alkane was not reflected in the final drawings provided.

[2] Pole positions are subject to final design detail to account for any heritage constraints brought to light during field survey.

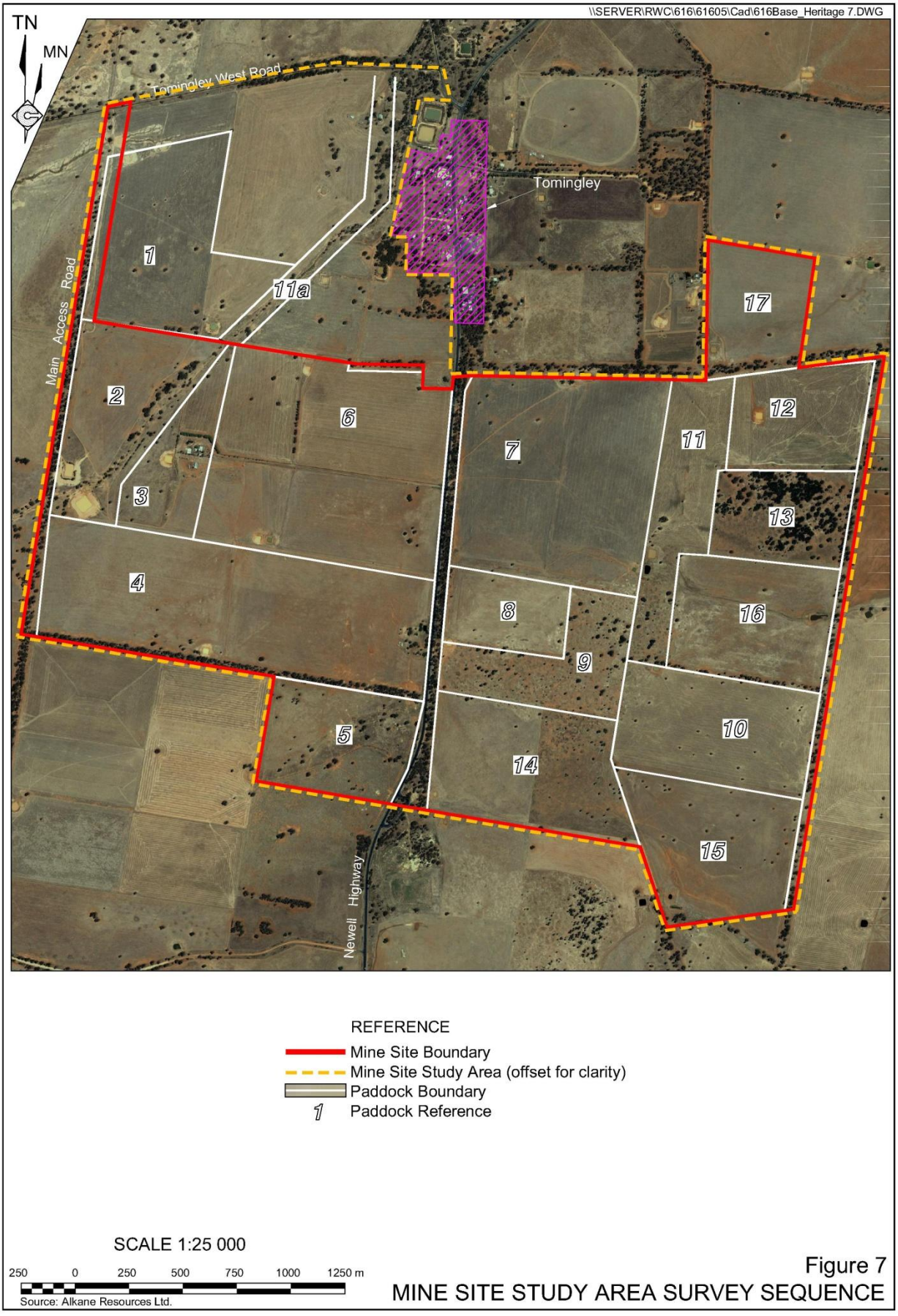


Figure 7
MINE SITE STUDY AREA SURVEY SEQUENCE

1.4 REPORT AUTHORSHIP

The Mine Site Study Area investigation was undertaken by Dr Jodie Benton, Cheryl Burke, Philip Cameron and Heidi Kolkert (OzArk Environmental and Heritage Management P/L).

The PHTETL Study Area investigation was undertaken by Dr Jodie Benton and Philip Cameron (OzArk Environmental and Heritage Management P/L).

The TNWP Study Area investigation was undertaken by Dr Jodie Benton and Heidi Kolkert (OzArk Environmental and Heritage Management P/L).

This report was written by Dr Jodie Benton and Heidi Kolkert, with input from Cheryl Burke and Belinda Burbidge (PhD Candidate in Anthropology, University of Sydney).

Thanks go to Mr Bruce Maclean for his assistance in discussions relating to the historic period remains.

2. COMMUNITY INVOLVEMENT

2.1 ABORIGINAL COMMUNITY CONSULTATION

2.1.1 General

The primary components of the TGP fall within the boundaries of the Peak Hill Local Aboriginal Land Council (PHLALC) although approximately half of the TNWP falls within the Narromine Local Aboriginal Land Council (NLALC) boundary.

Consultation with Aboriginal stakeholders has been undertaken in accordance with the Department of Environment and Conservation[3] *Interim Community Consultation Requirements* (ICCRs) (DEC 2004), as recommended in the *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (for Part 3A assessments) (DEC, 2005).

The ICCR's were initiated from project inception. Advertisements appeared in the Parkes Champion Post and the Narromine News on the 22nd of April 2009. Letters were also sent to the Peak Hill and Narromine LALC's, DECCW, Narromine Shire and Parkes Shire Councils and the Register of Aboriginal Owners. A second round of letters were then sent to additional groups identified as a consequence of the first round of advertising and agency contact. As a result of these processes, the following organisations / individuals formally registered interest by the close of Stage 1:

- Narromine LALC (Narromine LALC);
- Peak Hill LALC (Peak Hill LALC);
- Little Burning Mountain Aboriginal Corp (LBMAC);
- Mooka Traditional Owner Corporation (MTOC);
- Wiradjuri Council of Elders (WCE);
- Trevor Robinson (individual); and
- Peter Peckham (individual).

[3] Now NSW Office of Environment and Heritage (OEH).

A search of the National Native Title Tribunal website (last updated 31 December 2010) revealed that there are currently no native title claims over the any of the three study areas.

ICCR Stage 2 letters describing the proposed heritage assessment methodology were sent to all stakeholders with a request for any specific cultural information (should any be available), as well as inviting comment / input on the methodology proposed. Feedback from the Stage 2 letters has been incorporated into the assessment design prior to fieldwork being initiated. Responses to the Stage 2 letters can be found in **Appendix 2**.

As a result of a project information session held by Alkane in Peak Hill, two additional groups then registered interest to be consulted as stakeholders, namely:

- the Bogan River Peak Hill Wiradjuri Aboriginal Corporation (BPHWAC); and
- Bulgandramine Youth Development Aboriginal Corporation (BYDAC).

Several positions were made available for Aboriginal community representatives to participate in the heritage assessment fieldwork. These were chosen from the pool of registered stakeholders. Choice of possible participants was based on several factors including experience with and local knowledge of Aboriginal heritage places / sites in the Tomingley area, provision of relevant Workers Compensation insurance documents and breadth of representation in relation to group membership. Irrespective of which representatives participated in the field survey, all groups who have expressed interest in being part of the consultation process have been kept informed of the results, invited to attend meetings and to comment on draft documents prepared for the project. In late 2010, contact was again made with the Registered Stakeholders to invite Aboriginal community representatives to be involved in the survey of the additional land parcel along the northern boundary of the MLA Study Area. The survey was undertaken on 30th November 2010. Sections 2.1.2 to 2.1.4 provide further information on community involvement in these surveys.

A meeting was held on the 9th of September 2009, to which all TGP Registered Stakeholders were invited, to discuss the management of sites within the TGP Project Site. Minutes from this meeting can be found in **Appendix 2**. The carved tree recorded in the Mine Site study area, consumed the majority of meeting focus as the tree is considered by the community to be very significant. Consensus was that it could represent a burial (nearby or inside the tree itself). Due to the importance of the carved tree, the TGP Registered Stakeholders wished to defer further discussion about its management until they had an opportunity to hold their own community meeting.

Following an in-house Aboriginal community meeting on the 14th of September 2009, another meeting was held between the this group and Alkane on the 17th of September 2009 to discuss the establishment of a Peak Hill Wiradjuri Reference Group, i.e. a forum through which Alkane can present proposed impacts on, and management of cultural heritage and the Aboriginal groups and individuals can respond.

Aboriginal stakeholders representing a number of registered Aboriginal organisations in Peak Hill provided Alkane with an “issues for negotiation paper” (presented in **Appendix 2**). This was subsequently formalised into a Community Engagement Protocol (CEP) between Alkane and the Peak Hill Wiradjuri Aboriginal groups. The CEP was signed by the Managing Director of Alkane and representatives of the following six registered organisations on 15th June 2010 (**Appendix 2**).

- Peak Hill LALC.
- Little Burning Mountain Aboriginal Corporation.

- Bogan River Peak Hill Wiradjuri Aboriginal Corporation.
- Bulgandramine Youth Development Aboriginal Corporation.
- Warramunga Community Advancement Co-operative Society Ltd.
- Peak Hill Aboriginal Medical Service.

This document essentially captures the mining company's objectives, Aboriginal people's aspirations and principles for negotiations. Heritage management is only a component of this document. The six registered organisations are described as the Peak Hill Aboriginal Reference Group (Reference Group)

Since the CEP was established two individuals (Diane and Dorothy Stewart) from Dubbo have expressed an interest in the Tomingley Gold Project heritage matters. The Stewart family are direct descendants of Michael Mickey (born 1851 at Bulgandramine) and Mary Ann Peck (born 1842 in Tomingley).

Alkane convened a meeting in Peak Hill with the Reference Group (including the Stewarts) on 13th October 2010. This meeting was convened to advance some community development opportunities that would likely flow from the Tomingley Gold Project. Negotiations are ongoing.

Alkane convened a community meeting at Tomingley Memorial Hall on 31st January 2011. The purpose of this meeting was to inform the Tomingley, Peak Hill, Narromine and Parkes communities of the findings in the *Environmental Assessment*. Peak Hill and Dubbo-based Wiradjuri people attended this meeting. Attendees were encouraged to participate in follow up consultations by registering on the night.

Narromine LALC was contacted to supply four members to work on an archaeological dig on the proposed water supply pipeline route along the "Woodlands" driveway on 1st and 2nd February 2011. A local Aboriginal man, Paul Brydon also worked on this excavation. Narromine LALC and Paul Brydon were considered the most appropriate Aboriginal stakeholders given the location of the site (within Narromine LALC's boundary) and participation on the previous TNWP survey.

In April 2011, a final draft version of this report, or a letter of its availability, was distributed to all Registered Aboriginal Stakeholders. It was noted in the accompanying letter (presented in **Appendix 2**) that comment was requested by May 2nd 2011, but that if an extension was required to facilitate comment, that could be arranged. The letter also noted that no comment or call in relation to the report was taken to mean that the stakeholder was happy with the content of the report. No response was received from any of the stakeholders in relation to the draft report provided. On the 19th of September 2011, this report was also sent out to any stakeholders that had not already received it, being those that had been sent a letter of its availability.

A copy of the draft test excavation report was distributed to both Narromine LALC and Paul Brydon on May 13th 2011 (being those Aboriginal stakeholders who assisted during the test excavations), and comment was invited within a three (3) week time frame which extended to June 3rd 2011. No response was received from either stakeholder in relation to the draft report provided. It is noteworthy that a CD copy with a final PDF version of the test excavation report was sent to all remaining registered Aboriginal stakeholders on October 28th 2011 for their records.

Alkane arranged a Registered Aboriginal Stakeholder meeting at the Peak Hill AIF Hall on September 28th 2011 to discuss the draft Cultural Heritage Management Plan (CHMP, which had been distributed to all Registered Stakeholders on September 19) and update Stakeholders on the progress of the TGP approvals process. Minutes from the meeting are presented in **Appendix 2**. The dominant issue at the meeting was the significance of the Project Site to the local Indigenous community and the importance of the TGP-ST7, the potentially carved tree. To confirm whether TGP-ST7 is a carved tree, stakeholders assented that the best way forward would be to engage an arborist to remove the bark. Subsequently the CHMP would be guided by this analysis and updated to incorporate all known project impacts.

2.1.2 Aboriginal Community Involvement for Mine Site Study Area Survey and Assessment

The following organisations / individuals were formally invited to participate in the fieldwork for the TGP Mine Site:

- Little Burning Mountain Aboriginal Corp (LBMAC);
- Wiradjuri Council of Elders (WCE); and
- Peak Hill LALC.

Anthony Wilson, John and Ken Robinson and Shani Hando representing LBMAC participated in the survey of the Mine Site Study Area on the 5th, 6th, 7th of August 2009 and the 1st and 2nd of September 2009 with the OzArk team. Representatives from Peak Hill LALC chose not to participate in the field work. Robert Clegg representing the WCE was invited to take part in the field assessment, but eventually declined the offer.

Additional fieldwork over Paddock 17 (see **Figure 7**) was undertaken on 30th November 2010 with Ken Robinson and Francis Robinson of LBMAC participating.

2.1.3 Aboriginal Community Involvement for the PHTETL Study Area Survey and Assessment

The Bogan River Peak Hill Wiradjuri Aboriginal Corporation (BPHWAC) was formally invited to participate in fieldwork.

Melvin Keed and Karryn Schaefer representing BPHWAC participated in the survey of the PHTETL Study Area on the 26th of August 2009.

2.1.4 Aboriginal Community Involvement for the TNWP Study Area Survey and Assessment

The following organisations / individuals were formally invited to participate in the field work for the TNWP Study Area:

- Narromine LALC; and
- Peak Hill LALC.

Tom Peckham[4] representing Peak Hill LALC and Paul (Midnight) Brydon representing Narromine LALC participated in the survey of the TNWP corridor on the 1st and 2nd of July 2009.

Discussions were held in the field at the location of each site between archaeologists and the Aboriginal representatives to define and develop requirements for mitigation or management measures. These helped develop the management measures documented in this report.

Appendix 2 shows correspondence with the Aboriginal communities while **Appendix 3** provides a register of all consultation with Aboriginal groups.

2.2 OTHER COMMUNITY INVOLVEMENT

The Peak Hill Historical Society, offered to send OzArk some documents in relation to McPhail Mine, however, OzArk has not received this information. Trevor Robinson from the NSW Heritage Office and the Australian Heritage Office was contacted in relation to an Aboriginal Place on the Australian Heritage Register that is recorded as being in Peak Hill itself. No further information has been forthcoming in relation to the whereabouts and nature of this listing.

3. THE STUDY AREA

3.1 TOPOGRAPHY, HYDROLOGY AND CLIMATE

The Peak Hill area is situated in the physiographic region known as the central-west slopes of New South Wales. It is located just west of the border between the Upper Macquarie River and the Western Plains which is a transitional zone between the Great Dividing Range to the east and the plains of the Darling River to the west (Koettig 1985: 12). In general the topography can be described as flat to the west and gently undulating to the east, a terrain which provides no physical barriers to movement across the landscape.

More specifically, the landscape surrounding the three study areas is flat and relatively low-lying. Elevations do not vary greatly from 260 m Australian Height Datum AHD.

Gundong Creek traverses the northern portion of the Mine Site Study Area west of the Newell Highway, flowing southwest and draining into the Bogan River. It is noteworthy that historically Gundong Creek terminated in Tomingley as a spring, but was diverted through channelling in the nineteenth century and it is this recent creek portion that traverses the current study area. A very minor 1st order drainage feature traverses the eastern portion of the Mine Site Study Area.

The PHTETL Study Area tracking north from Peak Hill intersects two named drainage lines, Burrabadine and Bulldog Creeks, as well as a couple of minor drainage features.

The TNWP Study Area heading north from Tomingley will intersect several named creeks – Tomingley, Fiddlers and Yellow Creeks, as well as Brady's and Backwater Cowal's. These features tend to drain in a westerly direction at the end of the water pipeline, shifting to northwest towards Narromine. The northern most / terminating point of the water pipeline traverses floodplain associated with the Macquarie River.

[4] Tom Peckham works with both Peak Hill and Narromine LALCs.

Climate statistics from the Peak Hill Post Office show the area experiences warm to very warm (hot) summers, with an average rainfall of 559 mm, predominately occurring in summer. The average summer maximum temperature (calculated over 42 years of averages) is 32.3°C and maximum winter temperature 16.1°C (Bureau of Meteorology 2009).

3.2 VEGETATION

Prior to European occupation, the three study areas would have been consistent with the Floodplains Transitional Woodlands vegetative formation as described by Keith (2004). Tree species included *Eucalyptus microcarpa* (Grey Box) and *E. populnea* subsp. *bimbil* (Bimble Box) throughout with *E. melliodora* (yellow box) and *E. conica* (Fuzzy Box) occurring in the 'damper areas', and *E. camaldulensis* (river red gum) occurring on creek banks. Elevated red soiled gravel ridges supported *E. dwyeri* (Dwyer's red gum), whilst drier soils may support an occasional *Brachychiton populneus* (kurrajong), *Allocasuarina cristata* (belah) or *Allocasuarina luehmannii* (bulloak) but are mostly dominated by *Callitris glaucophylla* (white cypress pine) with localised dominations on red soils near Narromine of *E. sideroxylon* (mugga ironbark).

Both sides of the Newell Highway have been partially cleared of native vegetation. However, remnant vegetation is well represented, and in general, representative of unmodified vegetation communities of the Brigalow Belt South Bioregion (BBSB). This remnant vegetation includes Box spp, intermittent White Cypress Pines (*Callitris glauca*) and many exotic Pepper trees (*Schinus molle*). A dense layer of weeds dominates the remainder of the road corridors, especially Paterson's Curse (*Echium Plantagineum*).

3.3 GEOLOGY AND SOILS

The area of Tomingley is situated just west of the Yeoval granites in an area of undifferentiated quaternary alluvium comprising soil, clay, sand, silt and gravel. Pockets of Ordovician era metamorphosed rocks (such as slate, andesite and conglomerate) form a belt from Peak Hill through to Narromine, most of which is covered by soil. These formations have no formal name due to a lack of investigation (Holmes 1984: 7). Gold occurs in quartz reefs within the sub-surface slates of the Ordovician period. The soils in this area are primarily derived from the alluvium of the quaternary period.

The Mine Site is located near the northern end of a narrow belt of early Ordovician to early Silurian-aged submarine volcanic and shallow intrusive rocks of the Junee-Narromine Volcanic Belt within the Lachlan Fold Belt. Within the Mine Site, the basement geology is dominated by the late Ordovician to early Silurian Mingelo Volcanics (R.W Corkery 2009).

3.4 EXISTING LEVELS OF DISTURBANCE

3.4.1 Mine Site Study Area

The Mine Site Study Area has undergone considerable disturbance as a result of agricultural activities and historic mining exploration. To varied extents the Mine Site has been cleared, logged, cultivated, grazed and had waterways / surface flows modified through dam construction and channel excavation. It has been subject to mining related activities, as well as road and building construction. An existing homestead, ancillary buildings and access roads exist in Paddock 6 (**Figure 7**). Natural disturbance processes including erosion (accelerated by human activity) and bioturbation have also been active (**Plates 26**). The dominant agricultural

use of the area was, and remains, grazing (**Plate 56**) and cropping, which involves ploughing or scarification (**Plates 2**, **3**, **41, 51** to **53**). Experiments have shown that the destructive effects of ploughing may be relatively localised and that a wider sampling strategy in ploughed areas may produce useful archaeological results. Some areas have not been cultivated (i.e. along fence lines and specifically in Paddock 13, **Plate 75**) and had higher levels of ground surface visibility and hence greater potential for finding less disturbed sites if present.

Several existing dams are scattered throughout the Mine Site Study Area (**Plates 1**, **36** & **51**). Dams are highly destructive of the archaeological record, as they invert and mix stratigraphy. To the south of the Mine Site Study Area is the old McPhail tailings dam of the McPhail mining era, with remnants of prior mining activities scattered over the Mine Site Study Area.

Portions of Gundong Creek were severely disturbed with eroded banks in the Mine Site Study Area indicating that ploughing and grazing have occurred right up to the creek banks (**Plates 70**, **72** & **73**).

3.4.2 PHTETL Study Area

The easement for the PHTETL Study Area runs primarily through agricultural land that has suffered similar disturbance as the Mine Site, through the construction of dams (**Plate 93**), ploughing (**Plates 78** & **90)** and grazing (**Plate 92**). Disturbance is mainly limited to farming activities (ploughing and grazing), reducing the potential for sites to remain *in situ*. Patches of remnant vegetation were mostly adjacent to fence lines between paddocks and often had areas of good ground surface visibility. Ground subsidence associated with the old mining shafts adjacent to the easement east of Peak Hill allowed determination of 'A' horizon quality (**Plate 91**).

3.4.3 TNWP Study Area

The majority of land comprising the TNWP Study Area consists of road reserves bordering private agricultural property. A small portion of the TNWP corridor at the Narromine end falls on private property, 'Woodlands', bordering the Macquarie River. This portion of the water pipeline traverses heavily grazed palaeochannels of the Macquarie River and has little ground surface visibility (**Plates 147** to **149**) except adjacent to the pipeline on the eroded terrace edge. Along the rest of the water pipeline, disturbance has occurred through the development of roads, rail and agriculture (**Plates 175** to **176**). The alignment of the existing Newell Highway has also caused considerable disturbance (**Plates 132**, **133**, **137** & **138**) as has the Telstra cable that pipeline will follow for much of the route.

The Tomingley-Narromine Road corridor is home to some of the most substantial remnant vegetation within the greater TGP Project Site (**Plates 100**, **102**, **163**). The majority of the road corridor within the TNWP Study Area consists of mature trees, with only a few stretches that have been heavily cleared. Sites have a relatively higher potential to be present within the undisturbed portions of the TNWP Study Area through parts of the road corridor that have not been cleared. However, the previous impacts of road construction and buried infrastructure cables (Telstra) mean that this area has also suffered disturbance that will have impacted on sites if present (**Plate 119**). Although the majority of the TNWP Study Area is to be located along the eastern side of the Tomingley-Narromine Road, which is comprised of high quality remnant box woodland, it will follow a disturbed easement that has been cleared and excavated for a Telstra cable for the majority of the route.

All areas surrounding creeks or waterways were often disturbed by cattle treadage and eroded (**Plates 116** to **118**).

4. ABORIGINAL HERITAGE

4.1 ETHNOHISTORIC SOURCES OF PAST ABORIGINAL CULTURE

The TGP Project Site is situated within the territory of people belonging to the *Wiradjuri* tribal and linguistic group (Tindale 1974). The Wiradjuri tribal area is situated within the Murray Darling Basin, covering three primary physiographic divisions (White 1986):

- the riverine plains in the west;
- the transitional western slopes in between; and
- the highlands or central tablelands in the east.

The TGP Project Site falls within the central division, being the transitional western slopes into the central tablelands, the heart of Wiradjuri territory. More specifically, the local landscape of the TGP is considered to be that of the Bogan River Wiradjuri people, whose range included Tomingley and was bounded to the east by the Hervey Ranges (as named by Oxley) now known as Goobang, from the Aboriginal original name for ranges.

Episodes of early contact between Aboriginal and European cultures from the nearby Lachlan Valley (c. 30kms south) were documented by the explorers Oxley and Cunningham in 1817. On the return journey from exploration of the Lachlan, the explorers tracked north of Lake Cargelligo and Condobolin to the west of Parkes before bearing more northeast towards Peak Hill and Tomingley (Whitehead 2003: 290-296). On the 10th and 11th of August the group set up camp west of the Bogan River near Gobundry Mountains along Genaren Creek, reaching almost the Bogan River by the 12th of August and arriving just north of Tomingley on 13th August.

Relating to the travels of August 10, Oxley writes:

> *We have hitherto seen no other signs of this being inhabited country than the marks usually made by the natives in ascending the trees, and none of these were very recent. It is probable that they may see us without discovering themselves…..* (Whitehead 2003: 298).

While Cunningham (1817) reported that:

> *..we halted and pitched our tent on the site of an old native encampment. Here we saw quantities of horse-mussel shells with which the creek had furnished them and some stones on which they had been sharpening some weapons or instruments, perhaps their mogos or stone hatchets* (Whitehead 2003: 299).

Heading east from Genaren Creek on the 11th August, Oxley notes that they came across many transitory encampments of the 'natives' that did not appear to have been used for 4 to 6 months and many with mussel shell scatters in association.

August 13 was spent traversing the landscape from Genaren Creek to Tomingley, hoping to intersect the Macquarie River at any moment (although they were further from it than they realised). It appears that it had rained in the preceding days and water still lay in creeks of the area and they camped just north of Gundong Creek near Tomingley Creek, where they note the presence of a spring. Oxley writes of their approach to the area that:

> *On the banks of that burn (*Scottish for creek)*, many heaps of the pearl muscle-shells were found, and marks of flood about eight feet. We have for several days past seen no signs of any natives being recently in this part of the country;*

> *the marks on the trees, which were the only marks we saw, being several months old, and never seen except in the vicinity of water. Marks of the natives' tomahawks were to us certain signs of approaching water* (Whitehead 2003: 303).

To the south of the TGP Project Site and somewhat later (1835) are accounts of contact with native groups by the Mitchell expedition, which had set out to explore the Bogan River in 1835 (Unger undated: 3; Kass 2003: 6). In April 1835 Mitchell's party encountered a group of natives on the eastern outskirts of what is today the town of Parkes. From this meeting, Mitchell learned that what had been named the Hervey Range by Oxley in 1817 was in fact known to the locals as 'Goobang', which derived from the Aboriginal word Coleong Coobung, which meant place of many wattles (Kass 2003: 9). Mitchell's group camped within earshot of the Aboriginal camp and his account is quoted by Unger (nd: 4):

> *The natives who we met here were fine looking men, enjoying contentment and happiness within the precincts of their native woods. Their enjoyment seemed so derived from nature, that it almost excited a feeling of regret, that civilised men, enervated by luxury and all its concomitant diseases, should ever disturb the haunts of these rude happy beings. The countenance of the first man who came up to me, was a fine specimen of man in an independent state of nature. He had nothing artificial about him, save the badge of mourning for the dead, a white band (his was very white), round his brow. His manner was grave, his eye keen and intelligent, and, as our people were encamping, he seemed to watch the moment when they wanted fire, when he took a burning stick, which one of the natives had brought, and presented it in a manner expressive or welcome, and an unaffected wish to contribute to our wants. Sat a distance, their gins sat at fires, and we heard the domestic sounds of squalling children.*

When Mitchell's party left their camping spot, several natives reportedly followed them, one of whom speared a large kangaroo, while others used new tomahawks to extract honey from tree branches. It is recorded that the natives accompanied the expedition for four days before retreating upon the appearance of further natives. This was interpreted by Mitchell as the original group of natives having reached their tribal boundary (Unger nd: 5).

Upon reaching the headwaters of the Bogan (southwest of Peak Hill), Mitchell records encountering the tribe of 'Bultje', said to be composed of up to 120 natives of considerable intelligence who could speak some English. He describes that this tribe remove one of the two front teeth of males aged over 14 (Unger nd: 5). Mitchell's accounts of the 'Bogan blacks' provide excellent detail on subsistence, describing this tribe to be reliant more on possums, kangaroo and emus than the lower Darling Aboriginal groups, but with a significant input from freshwater mussels. The root of the 'tao' plant are said to have comprised much of the children's diet.

As in most parts of NSW, white diseases were a precursor to white settlement and the population encountered by early settlers was already impacted by this. Tales of early white settlement include stories of clashes including massacres of the natives and revenge attacks.

While it is most likely that the name – Tomingley – was a variant on the name Tom Inglis, who was a stage coach driver between Dubbo and Parkes, it is also possible it was a local Aboriginal word. Garnsey, an ethnographer, who recorded extensive details about Aboriginal people in Dubbo, noted the word Tomingley is an Aboriginal word for death adder, although; he had never seen or heard anyone refer to a death adder in the region (Garnsey n.d. 62). It is most likely he found this information in Walker, who recorded the Wiradjuri language in this region. Walker noted that 'Tomingley' means 'deaf adder country' (Walker 1904: 90).

Anthropological or ethnographic research ceased in the Peak Hill and Tomingley region during the 20th century. Section 4.2 reviews the historic and oral information provided by local Aboriginal and non-Aboriginal informants regarding Aboriginal occupation of Tomingley.

4.2 HISTORICAL AND ORAL SOURCES OF PAST ABORIGINAL CULTURE

As with most parts of regional southeast Australia, historical records concerning Aboriginal people prior to the 20th century are sparse and incomplete. The following historical information, regarding Aboriginal presence in Tomingley, was uncovered during historical research completed with over 40 records, including published references, unpublished manuscripts, archival – including educational and police indexes and specific Aboriginal Board of Protection records, information held by NSW Land and Property Information (NSW LPI) and oral history accounts.

The first historical reference to Aboriginal people appeared in the Peak Hill Express in 1905, which reported on the beginnings of Bulgandramine Mission. The article states:

> "*For many years about 25 Aborigines – the last of their tribe – have been camped about Tomingley, and it has now been decided to reserve for them a permanent village within the boundaries of which they will be able to discuss local government matters and reflect upon the past glories before the advent of the white man.*
> *With this object in view, Sub-Inspector Kenny and Sergeant Brayne selected a fresh reserve between Tomingley and Bulgandramine about a mile from the Bogan River. We understand the Government will supply wire netting with which to enclose the reserve, thus enabling the dusky Australians to cultivate the soil and make a permanent home. By the way, the blackfellow does not look upon the rabbit as a curse, but rather a blessing undisguised*" (Peak Hill Express 1905).

The article suggests that an original mission site for Tomingley may have been intended before the Bulgandramine site was selected, yet the exact location of such a possible site is unknown. There has been no historical information uncovered to suggest there was a formalised mission or government reserve located in Tomingley. The closest reserve recorded was the Bulgandramine Mission opened in 1907 and closed in 1941. Bulgandramine Mission was located about 22 km northwest of Peak Hill on the Bogan River, where it was met by Gundong Creek, another camping place previously used by Aboriginal people. According to local Wiradjuri woman, Valda Keed, when Bulgandramine ran out of water people would walk back to Tomingley, to camp at more permanent water sources there. People would walk back along the Gundong Creek and sometimes camp along the way, and also along the Tantitha Road on the way to Wellington (Interview with Valda Keed: 27 September 2011).

The 1919/20 street map of Tomingley (**Figure 17**) includes an Aboriginal Reserve within the corner of land created between the Narromine and Bulgandramine Roads (site 1, **Figure 8**). A land title search for the relevant lot numbers, and inspection of the historical crown plans and parish maps for this area, notes the area was leased from the crown under mining licenses, though the records prior to the 20th century are incomplete. There is no historical information to suggest this site was an Aboriginal Reserve, although the records suggest that there were Aboriginal people camped around Tomingley prior to and during the Bulgandramine Mission years and Valda Keed remembers this site as being one of those places. Valda remembers walking to Narromine and going through Tomingley with her mother and grandmothers. Her grandmothers, Mary Wighton and Caroline (Carrie) Dargan, told her people camped in Tomingley in three main places. These were the places mentioned above: the fork of land in between Narromine Road and the Newell Highway; south of the orchard where there was a well (site 2, **Figure 8**); and east of the highway along Gundong Creek (site 3, **Figure 8**), which runs close to Obley Road, heading towards Goobang and Yeoval (Interview with Valda Keed: 27 September 2011).

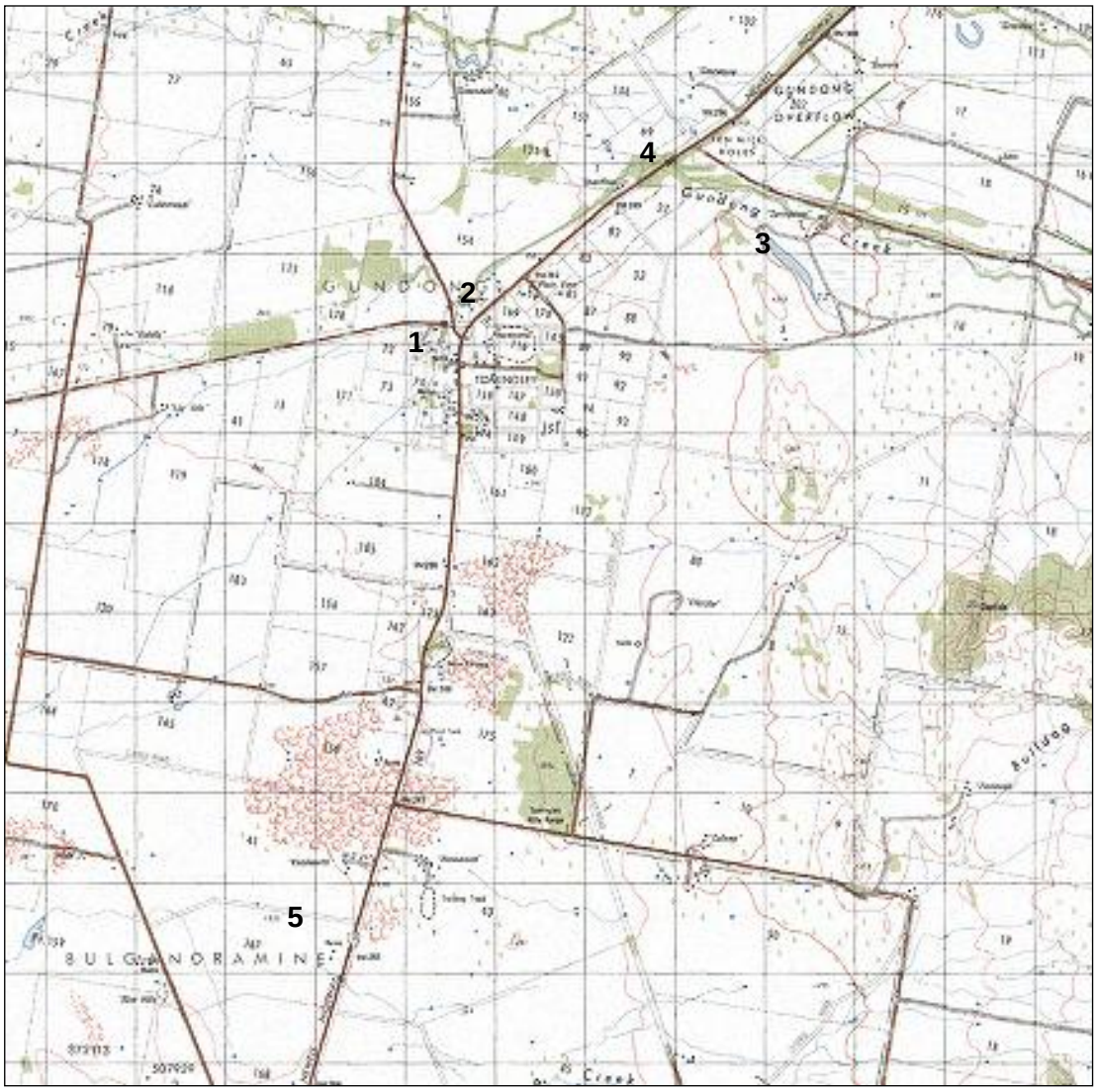


Figure 8
MAP SHOWING LOCATION OF AREAS MENTIONED IN THE ORAL HISTORY OR HISTORICAL RESEARCH

An additional camping place (site 4, **Figure 8**), which was known as the Tomingley Meeting Place, was recorded in 1995 by a local Wiradjuri elder, now deceased. She described this site as a place where Wiradjuri people would camp when travelling in this area, along Gundong Creek.

Another traditional water source is located south of Tomingley (site 5, **Figure 8**) and was recorded in 1995. A senior Wiradjuri man, now deceased, along with other members of the community have been told that this place was used as a water and food source for people travelling between Bulgandramine and Tomingley.

The Peak Hill Express in 1906 reported:

> "*This district has to lament the loss by death of the last of the kings. The said king, commonly known as "One-arm Jimmy," was well-known about Tomingley and McPhail. He was, as far as I can make out, the sole survivor of a long race of monarchs, who ruled over this district in the happy days of long ago, when there were no Trades' Unions, no Arbitration Courts, and no Tattersall's Sweeps. There were no land agents in those days for then they had land nationalisation and no policemen, for there were very few laws to break. Jimmy's ancestors were kings, but Jimmy himself was a king without a kingdom. He had to descend from the throne of his fathers and take up the humble and degrading of black tracker at one time. Recently, he had been living as a retired gentleman, drinking beer and smoking "bacca," generously donated to him by the white man, who had robbed him of his dominions. He was buried at Tomingley on Sunday, September 30, by the remnants of his sorrowing tribe, and in the presence of a large number of his white admirers, and friends. Probably, he and all other kings will meet on the level of the Never Never"* (Peak Hill Express 1906).

According to Valda Keed, One Arm Jimmy's name was Jimmy Ryan (Interview with Valda Keed: 27 September 2011). His family also lived in Peak Hill and their photo (**Figure 9**) was recorded in the bicentenary book, A History of Peak Hill and District.

Some early inhabitants at a gunyah on the flat below the town. In centre, John Gilmour (Genanagie Jack); extreme right front row, "One-armed Jimmy." The small boy seated on log was afterwards Private Alfred "Tiny" Ryan, of the A.I.F., and gave his life in Flanders.

Figure 9
'ONE ARM JIMMY' AND HIS FAMILY IN PEAK HILL. SOURCE CHAPPEL 1989

In 1907 the Anglican Parish recorded the baptism of Sam and Nellie Towney, children of William and Elizabeth Towney at the Aboriginal Camp at Tomingley. The Towney family are a Wiradjuri family, whose descendents currently reside in Peak Hill today. This was also reported in the Peak Hill Express, as well as the Anglican Parish records. The exact location of this camp is unknown. Valda Keed remembers that this family were not allowed at the Bulgandramine Mission because they were too fair skinned, so they lived in Tomingley. William Towney had a large family, some of which later lived in Peak Hill and others moved away, such as Charlotte Towney, who moved to Newcastle (Interview with Valda Keed: 27 September 2011).

From Tomingley, there is a photograph of school children from about 1909. In the front row of the photograph are six Aboriginal children, one of whom is Jackie Peeler, and the others are believed to be of the Andrews family (Mewburn 1982: 42). Again it is unknown where in or around Tomingley this family resided. Valda Keed knows from her mother that Jackie Peeler lived at Tomingley as well as Bulgandramine Mission, although his mother, May Peeler moved to Trundle. She also recalls being told that Jackie Peeler spent time with Jackie Melrose, who also lived at Tomingley in the early 20th century (Interview with Valda Keed: 27 September 2011).

Miss Taylor was a missionary at Bulgandramine, who was once also at Tomingley, possibly there with the Aboriginal Martell family. Miss Taylor recorded:

> *"This poor man, Tommie Martell, was one of the seeking ones, and was learning to read so that he might read the Bible... He had not touched drink for a long time, and had not gambled for some time, but a little time ago he did so. His wife tells me when he did anything wrong he would immediately ask Jesus to forgive him. She used to read the Bible to him... His wife was a widow with five children when he married her, and it was this couple that had that dreadful walk with their dying child when we were at Tomingley"* (Taylor 1921: 4-5).

It is clear from her statement that Miss Taylor was at Tomingley, though not so clear where the walk she refers to occurred, nor where the Martell family lived before Bulgandramine Mission.

It can be concluded that the historical information examined supports the claim that there was most likely not a formalised, government or church funded Aboriginal mission at Tomingley. The Aborigines Protection Board, which later became the Aborigines Welfare Board, was operational during this period but no records concerning the Aboriginal families or camps in or around Tomingley has been uncovered within their files, presently held and indexed with the NSW state archives. Although the historical and oral information provided suggests that there were a number of Aboriginal camps in use long before and during the time of Bulgandramine Mission.

As Tomingley was in decline after Bulgandramine closed, people did not return to the township, instead took up residence on the hill and along the flat at Peak Hill, and in other neighbouring towns.

4.3 REGIONAL ARCHAEOLOGICAL CONTEXT

The most relevant research-based studies were undertaken by Pearson (1981)[5] and Koettig (1985). Together these provide baseline data for placing past Aboriginal sites within a regional landscape context. Following is a summary of the salient points learned from these studies:

Pearson (1981) worked primarily in the Upper Macquarie region, the western boundary of his Study Area being Wellington. The general proximity of his study area makes the findings of this work relevant. The majority of Pearson's field coverage was directed by information from informants and was thus skewed toward large or obtrusive sites, which had been recognised by local residents. Pearson excavated three rock shelter sites (Botobolar 5, and Granites 1 and 2) which provided a regional record of Aboriginal occupation dating back to around 5,000 years before present. Pearson's analysis of the patterns of Aboriginal occupation involved an examination of site location characteristics in four sample areas.

According to Pearson archaeological sites could be divided into two main categories, occupation sites and non-occupation sites (which included grinding grooves, scarred or carved trees, ceremonial and burial sites etc.). An analysis of the location of these sites led him to build a model for site prediction along the following lines (Pearson 1981: 101).

- Site distance to water varied from 10 to 500 m, but in general larger sites are found closer to water.
- Good soil drainage and views over watercourses are important site location criteria.
- Most sites were located in contexts, which would originally have supported open woodlands.
- Burial sites and grinding grooves were situated as close to habitation areas as geological constraints would allow.
- Ceremonial sites such as earth rings ('bora grounds') were located away from campsites.
- Stone arrangements were also located away from campsites in isolated places and tended to be associated with small hills or knolls or were on flat land.
- Quarry sites were located where stone outcrops with desirable working qualities were recognised and were reasonably accessible.
- Based on ethnohistoric information, Pearson suggests that Aboriginal campsites were seldom used for longer than three nights and that large archaeological sites probably represent accumulations of material over a series of short visits.

The location of non-occupation sites was dependent on various factors relating to site function. For example, grinding grooves only occur where there is appropriate outcropping sandstone, but as close to the occupation site as possible. Modified trees were variably located with no obvious patterning, other than proximity to watercourses, where camps were more frequently located.

[5] M. Pearson's 1981 study is an unpublished PhD thesis from the ANU. The authors have been unable to directly access this work and rely heavily on summaries presented in Koettig (1985).

Although a useful study, Koettig (1985: 49–50) considered Pearson's findings as preliminary, mainly due to the unsystematic nature of the recording of most sites used in the analysis. In her view, this would have skewed both site type (obvious manifestations) and location (areas of disturbance), therefore biasing the sample. Further the sample size of both the Wellington and other areas were considered too small to yield significant results.

Koettig (1985) undertook a comprehensive study of evidence relating to Aboriginal occupation within the Dubbo area, including c. 5km around the city limits. As a result of the desktop component of this study, Koettig (1985) determined there was need for systematic survey to ensure that all topographic landform units and different stream order associations were explored in terms of site type and location. This field work included detailed recording of various site types, ensuring the presence of comparative, quantifiable data. The field survey was undertaken by dividing the broader Dubbo Study Area into five sample survey areas covering the three major physiographic zones, but was constrained by time and an inability to access privately owned land.

As a result of this study, Koettig (1985: 81–82) arrived at the following conclusions.

- Aboriginal sites may be expected throughout all the landscape units surveyed.
- The most frequently occurring site types were open artefact scatters, scar trees and grinding grooves.
- The location of sites and their relative size were determined by various factors, predominantly environmental and social. Although social factors cannot be explained through archaeological research, some of the environmental issues may be. These are:
- Proximity to water: the largest campsites were located close to permanent water, nonetheless, sites were found all over the landscape including hills and ridges away from obvious water;
    - *Geological formation:* Certain sites require specific conditions, e.g. grinding grooves occur where appropriate sandstone outcrops, quarries are found where suitable stone resources are accessible, burials tend to be found in sandy sediments such as alluvial flats etc.; and
    - *Availability of food resources:* The widest range of potential foods was found along the main water courses due to the supply of permanent water. Some foods would have been seasonal and required foraging away from water courses.

In predicting intensity of occupation, Koettig (1985) suggests that larger and more constantly occupied sites are likely to occur along permanent watercourses, while less intense and sporadic occupation evidence is seen along ridge tops or temporary water sources e.g. creek headwaters.

The predictive model for site location developed as a result of this study can be summarised as follows:

- all site types can be found along watercourses;
- stone arrangements occur most frequently on knolls or prominent landscape features;

- larger campsites are most frequent along permanent watercourses, near springs or wetlands, although small campsites may be found anywhere. Because occupation was more intensive along major watercourses, more site complexes will be found there;
- modified trees may be found anywhere there are remnant stands of native trees;
- campsites would become smaller and more sporadic near the headwaters of creeks;
- grinding grooves are most frequent in association with appropriate sandstone;
- quarries may be found wherever there are reliable sources of suitable stone; and
- Shell lenses (midden material) would only be found along the rivers or 4th order streams.

4.4 DEVELOPMENT DRIVEN STUDIES

Wiradjuri heritage in the Parkes – Peak Hill – Narromine region has also been documented through many development-related heritage assessment projects. The following review of studies undertaken over this region help to provide a backdrop for the type of sites likely to occur within the TGP Project Site.

4.4.1 Northparkes Mine

A large development of the local region is Northparkes Mine (NPM), situated west of Peak Hill close to the headwaters of the Bogan River and in a generally similar environment to that of the TGP Project Site. Assessment of this area commenced in 1986 with survey over the Goonumbla Mining Lease as it was then known (Stone 1986). A total of 16 sites were recorded as a result of this assessment consisting of 14 open artefact scatters, of which one was associated with a modified tree, and one further isolated find. Overall, sites were noted as being small and in poor condition, either disturbed by ploughing or erosion. Fifteen of these sites were located along the Bogan River or one of the two tributaries assessed during the study. Seven of the sites were within 1km of the confluence of Goonumbla Creek and the Bogan River.

Subsequent survey at NPM was undertaken (Nicholson 1990) to assess new proposed impacts to an area not previously assessed by Stone (1986). The Study Area comprised flat to gently undulating land at the north-eastern boundary of the mining lease over previously cleared paddocks that had been either ploughed or grazed. Dense grass reduced visibility and hence site detection and as a result, survey was focussed on fence lines and the areas around dams which provided limited windows of visibility and resulted in coverage of c. 4% of the impact area. No archaeological sites were recorded as a result of this assessment. The lack of sites was not considered surprising due to the distance from permanent water and the type of landscape assessed.

Again, to facilitate continuation of operations at NPM, Aboriginal heritage assessment was required over areas proposed as extensions to the existing mining operations, predominantly over portions of Limestone National Forest and adjacent agricultural lands (Appleton 1996). The survey area was noted as comprising about 60% cypress pine, although it was likely to have been box dominated dry sclerophyll open woodland in prehistory. The area contains an elevated depression in the northern portion and undifferentiated gentle slopes down towards Goonumbla Creek in the southern. Prior land-use impacts within the survey area were noted as including logging, grazing, and in some locations, ploughing. Survey effort was focussed on areas around such features as erosion scars, tracks etc., anywhere that offered greater than 25% visibility, and despite the variable visibility, survey coverage was assessed as effective. Four archaeological sites were recorded as a result of this assessment, three being isolated finds and one being a possible modified tree. The overall paucity of archaeological material was interpreted as relating to the fact that the study area was dry sclerophyll woodland with no specific water source or other resources that would concentrate Wiradjuri occupation and was more likely used for activities such as foraging.

In 2006 reinvestigation was again required (Paton 2006). The aims of this assessment included the relocation and assessment of previously recorded sites, survey of areas to be impacted by the current proposal and the delineation of zones of potential archaeological sensitivity within the study area. The study area was noted as being highly modified with the only area not completely cleared and disturbed being that of the Limestone National Forest, despite it having been logged in the past. Survey was undertaken in transects which targeted the zones. Overall survey coverage of the proposed impact areas was determined as high, being 45–50%. Three new sites were recorded as a result of this assessment, one small open camp site and two isolated finds.

In terms of zones of archaeological sensitivity, Paton divided the mine site into four zones): Zone 4 — zero sensitivity (disturbed by mining impacts); Zone 3 — very low sensitivity (flat waterless terrain – 35% of site); Zone 2 — low sensitivity (Limestone National Forest – 10% of site) and Zone 1 — medium sensitivity (Goonumbla Creek – 5% of site). It was noted that the Zone 1 area provides potential for sites close to the water course on flat, elevated terrain. These are most likely to be surface scatters although there is an assessed low potential for stratified sub-surface archaeological deposits.

4.4.2 Other Development Driven Projects

Moving to the Parkes area, firstly to the north of Parkes, two modified trees were recorded (#43-2-0017 and #43-2-0018) for private reasons adjacent to Goobang Creek near where it is crossed by the Parkes-Wellington Road. These are both box trees and during the attempted relocation of these sites as part of the preliminary assessment, several other scars were noted on mature trees near watercourses in this area. Further south along this road, is another modified tree recorded as a result of the same project (#43-2-0016).

Assessment for a 66kV electricity easement from Parkes to Peak Hill undertaken in 1977 (Moore 1977) recorded one site near Trewilga, being a basalt quarry site (#35-6-0002). Intact bi-facial choppers are said to have been recorded here with numerous broken choppers and flakes.

Brayshaw (1993) undertook archaeological survey for a proposed water pipeline from the Northparkes Mine. The Study Area began at the northern edge of Parkes and extended for 22km northwest of Parkes along the Bogan Road, and continued for about 27km to the south

of Parkes. Two open camp sites and an isolated find were identified. One is a small open camp site located 3.1km north of the Bogan Road turnoff (#43-3-0019). Present were a quartz flaked piece with retouch and use wear on one edge situated within a disturbed context adjacent to an unnamed ephemeral drainage line. The second open camp site is located south of this by several hundred metres, on the Bogan Road verge. The isolated find[6] (IF), an indurated mudstone flake, was located 5km south of Parkes near Bartley's Creek, also within a disturbed context.

A further four modified trees were recorded along the Newell Highway north of Parkes, (#43-3-0065 and 0066). These were identified during assessment for the proposed realignment of the Newell Highway north of Parkes (Appleton 2003). Both trees are box species (possibly fuzzy or apple box).

In 2004 archaeological assessment was undertaken for the 'Parkes Hub' project (Comber (2004a). Three modified trees were recorded (# 43-3-0059, 0060 and 0061) all to the north / west of Parkes. All were Grey Box trees and during recent attempts to locate one of these trees (# 43-3-0059), it was unable to be located and has been felled or the co-ordinates are erroneous (OzArk 2006).

In 2008 OzArk EHM conducted a preliminary heritage assessment of the corridor options for the proposed Manildra–Parkes 132kV Electricity Transmission Line (ETL) which is located to the south and east of the TGP Project Site (OzArk 2008). It was noted that twenty six (26) sites had been previously recorded over all potential corridors being studied (of which 80 % were modified trees), although it is noteworthy that this project did not include a survey component.

Within the confines of the current TGP Mine Site Study Area, an EIS was prepared in 1995 for the proposed reprocessing of tailings from the original McPhail Mine (JM Cook 1995). No physical heritage assessment was undertaken in the face of this proposal due to the conclusion that the site of the tailings had already been substantially disturbed during original mining operations hence leaving a low likelihood for the presence of archaeological remains (JN Cook 1995: 21). The fact that the site contained no surface water and no evidence of 'native activity' (JN Cook 1995: 21) was also mentioned. Further disturbance is noted to have occurred to the land upon which the proposal was focussed, in the form of bulldozing by the Rural Land Protection Board in 1987 for the purpose of removing noxious weeds and rabbit habitat.

4.4.3 Research Projects

In 1998, assessment of the cultural heritage of a large part of the Hervey Ranges as a precursor for the development of a Plan of Management for the Goobang National Park (gazetted in 1995) was undertaken (English 1998). Results of this assessment recorded 30 open camp sites representing both short and long term occupation sites. Artefacts from these sites numbered 928 and were predominantly made from volcanic stone and quartz.

[6] Not registered on the AHIMS database as isolated finds generally weren't in that era of recording.

Also recorded were 28 modified trees, thought to not represent all likely to be present considering the wooded nature of the NP and thus reflecting the amount of coverage feasible over such a large area (42, 080 ha). One large axe grinding groove site was recorded comprising 13 elongated grinding grooves over three outcropping boulders, assessed as a significance site as it is the only one recorded in the NP and is in good condition. A quarry site accessing volcanic stone identified as rhyolite was also found (NSW NPWS 2001: 27-28).

The site of Snake Rock (Lambert 2004), west of Peak Hill was recently made into an Aboriginal Place and an area of 60 ha surrounding it conserved. This site includes a pecked engraving of a snake as well as rock shelters, artefacts and grinding grooves.

4.5 LOCAL CONTEXT DESKTOP RESULTS

A search was undertaken of the DECCW AHIMS database encompassing two areas: a 10 x 30km area north of Tomingley and a 20 x 30km area centred on Tomingley. The first search revealed five (5) previously recorded sites while the second revealed 41 recorded sites. It is important to note, however, that one site in the latter group has been erroneously registered on the AHIMS thereby plotting it to within the current searched area when it is in fact in the Menindee Lakes area (# 31-6-0036). This site will omitted from further analysis, and cumulative number of sites provides a total of forty five (45) previously recorded sites.

Although modified trees are the most frequently recorded, there is a diversity of site types known for the area (**Table 1)**. **Figure 10** provides the location of these sites.

Looking more closely at these site recordings and the assessments that recorded them provides a clearer picture of the level assessment the area has undergone and the range of sites recorded, the landform they were recorded on, disturbance levels etc. Review of these sites is provided from Narromine in the north to Peak Hill in the south.

Table 1
Previously Recorded Sites within the Narromine-Tomingley Searched Area

Site Type	Number	*% Frequency*
Modified Tree	26	*58*
Open Site /Artefacts	9	*20*
Isolated find	6	*13*
Burial/Mod Tree	3	*7*
Quarry/Artefact	1	*2*
Total	***45***	***100***

Located just south of Narromine is a modified tree (# 35-3-0140) recorded in 1998 during assessment for an optic fibre cable that extended along the Warren Road from Narromine to the Buddah exchange. Nearby to the east and adjacent to a road, is an open camp site recorded by Navin Officer, although under what auspices is uncertain.

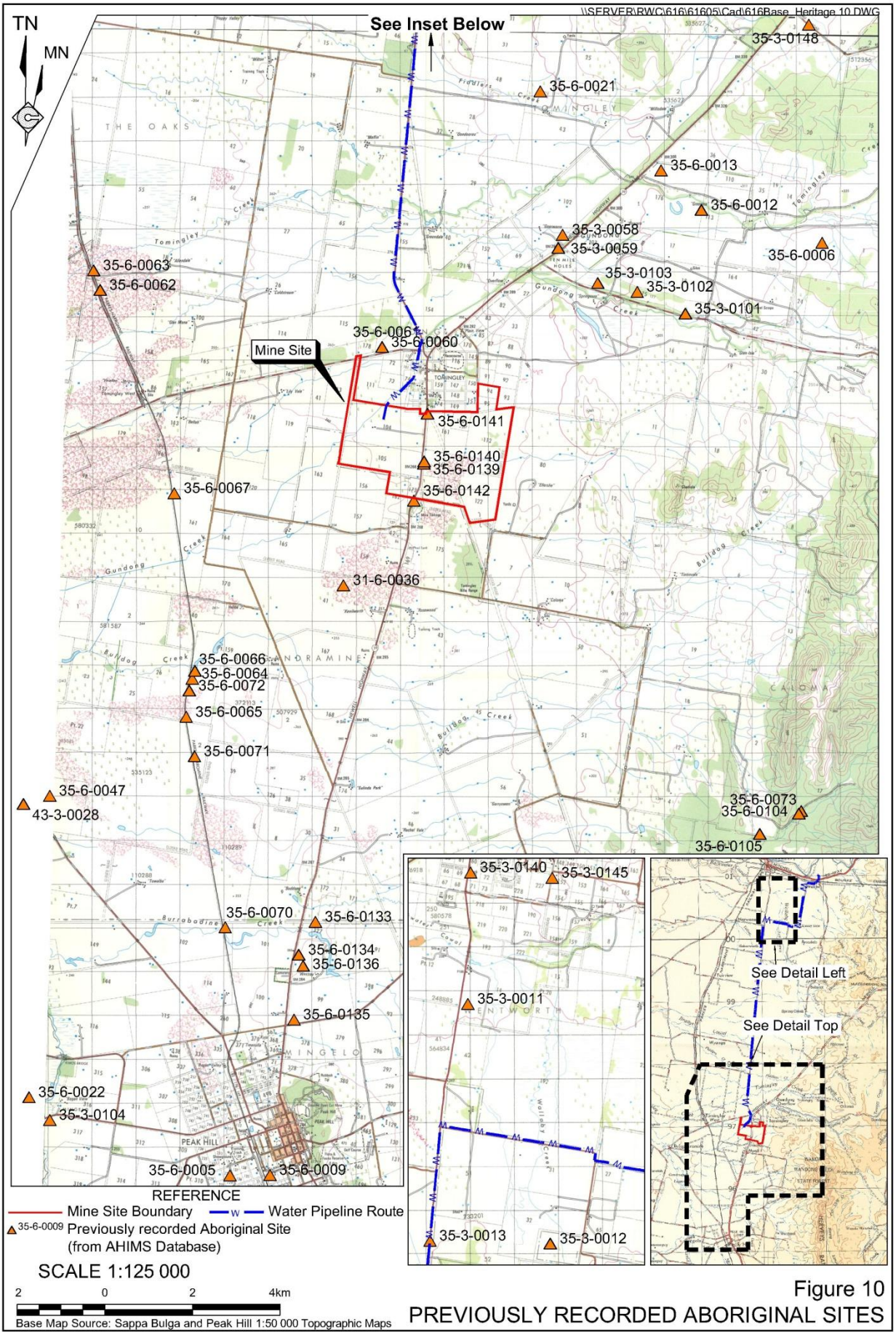


Figure 10
PREVIOUSLY RECORDED ABORIGINAL SITES

The other three sites located south of Narromine (# 35-3-0011, 0012 and 0013) are all carved trees interpreted as burial markers and recorded by Etheridge in the early twentieth century. The northernmost (# 35-3-0011, ID 33) was first noted in 1895, it being reported that two trees on a sandy ridge bore carvings. These were interpreted at the time by an old Macquarie tribesman known as 'Eurombedah Dick', who remembered that one of the black fellows buried there was mortally wounded in a fight between his tribe and the Bogan men. He was said to have been the most noted boomerang thrower of this tribe and the unusual semi-concentric incisions on one of the modified trees was intended to record this fact (Etheridge 1918: 46). The second carved tree of this recording was of the rhomboid type, one of the most common motifs, with repeating rhomboids in a quincuncial arrangement (Etheridge 1918: 20). These two trees are noted as having been removed to the Australian Museum and are hence no longer present in the landscape. Relevant to this discussion is that a carved tree called 'Euromedah' is recorded as a registered site on the Register of the National Estate (ID 13714), entered on the register in 1991. It is uncertain whether this carved tree is therefore *in situ* or in the Australian Museum, as the photograph on the Australian Heritage Database is inaccessible. The trees were unable to be located in the field and were either outside the TGP Project Site or have been removed.

To the south a little further is another carved tree (# 35-3-0012, ID 34), recorded along Wallaby Creek approximately 3km east of the Tomingley-Narromine Road. This carved tree over a grave is said to be the scene of a fight many years ago and glyphs are present on either side of the tree. Although one is harder to discern than the other, they both appear to be of the rhomboid type described above (Etheridge 1918: 46). OzArk did not attempt to relocate this site as it is well outside the TGP Project Site.

Shown to be within the Tomingley-Narromine Road corridor (and noted as being west of the Wallaby Ranges and south of Narromine) is the final carved tree recording of this series (# 35-3-0013, ID 35), which is said to have been over a grave at the scene of a fierce fight between whites and blacks in the first days of settlement (Etheridge 1918: 46). The glyph on this tree is again the repeating, concentric rhomboid pattern. Also noted for this location are a further four carved trees surrounding an internment, one tree to the north, east, south and west of the burial. An old man of the Bogan tribe told the story of these trees through an interpreter, relaying that the deceased was a 'doctor' of this tribe. The head man of the Macquarie tribe was taken seriously ill and the local 'doctor' could do nothing for him, so the Bogan practitioner was summoned. The head man recovered, but the Bogan doctor caught the disease and died. In his honour the four glyphs are said to have been carved, the east and west trees by the Bogan blacks and the north and south trees by the Macquarie blacks. The amicable relations between the tribes described here are noted as not always prevailing and the tribes are said to have frequently met for battles of 'mortal conflict' in the vicinity of (to the west of) the Wallaby Ranges. The Wallaby Ranges discussed here are thought to be the Sappa Bulga ranges east of the Tomingley to Narromine Road. Attempts were made to revisit this site during the current TNWP Study Area survey. OzArk is not confident that this site does exist within the road corridor, however, in the approximate location of these site coordinates exists a tree with a possible scar that is completely closed. This tree is further discussed in the survey results section of this report.

Relevant to this discussion is that a carved tree called 'Narromine' is recorded as a registered site on the Register of the National Estate (ID 17639), entered on the register in 1991. It is uncertain whether this carved tree is one of this group and therefore *in situ* or in the Australian Museum, as the photograph on the Australian Heritage Database is inaccessible. Of these six trees, none are recorded as having been removed, although only one illustration shows a living tree, with the remaining five being illustrated by drawings supplied to Etheridge by Milne.

Within the searched area the most northeastern occurring site (# 35-3-0148) is a modified tree occurring on the AHIMS as a one-off recording by Stapleton along Momo Road. The auspices of this recording are uncertain, but it may have been documented by an amateur, thus possessing no associated report.

A few kilometres to the south there are several carved trees recorded along Tomingley and Fiddlers Creeks (# 35-6-0006, 0012, 0013 and 0021). Three of these four were registered by Bell, while the fourth was recorded by Edmonds. Of these, two of the Tomingley Creek modified trees (# 35-6-0012, 0013) and possibly also the third (# 35-6-0006) are likely to be those first referred to by Etheridge in 1918. Against his recording of Tomingley Creek, Etheridge notes that three carved trees were recorded for this locality and that the area is said to have contained a large number of graves. The trees were apparently removed to the Australian Museum, however, records as to which trees these were have not been kept and hence there is no further data available on the glyphs these trees possessed (Etheridge 1918: 41).

Slightly to the south is a group of three modified trees (# 35-3-0101, 0102 and 0103) recorded by Bluff, an interested amateur, along the road to Obley, with a further two recorded on the Newell Highway near the Obley turn-off (# 35-3-0058 and 0059). It is believed that the latter two trees have had Section 90 permits enacted for their removal and they are currently residing in shelters by the side of the road.

A series of eleven sites recorded by Navin Officer extend along the Marsden to Dubbo natural gas pipeline, which follows the Narromine to Parkes rail line, within the current searched area, that runs from north to south along the western margins of the searched area (# 35-6-0062, 0063, 0064, 0065, 0066, 0067, 0068, 0069, 0070, 0071 and 0072). These sites comprise six isolated finds and five open camp sites. Permits to impact these sites were issued prior to construction of the pipe line.

Immediately north of Tomingley and slightly west along a road reserve a further two modified trees were recorded by NPWS. These trees appear to have the same co-ordinates on the AHIMS, although the fact they are referred to as ST1 and ST2 respectively indicates that there are two trees present, maybe simply very close to one another. These trees are along the road adjacent to the northern boundary of the TGP Mine Site and apparently bear canoe scars.

To the south of Tomingley along the Newell Highway (and within the TGP Mine Site Study Area) a further four modified trees (# 35-6-0139, 0140, 0141 and 0142) were recorded in 2003 (OzArk 2003). The trees were located along the eastern side of the Highway in the remnant vegetation present and all were on Grey Box species. The lack of trees to the west of the highway alignment is a result of almost complete clearance of this side of the road corridor. The location of these trees is included in the Survey Results section and **Figure 10**, as they lie within the MLA Study Area.

South and west of Tomingley is a modified tree (# 35-6-0047) recorded along the Bogan River by Bluff, which plots to not far from an open camp site called Conmomugul Lagoon (# 43-30028), apparently recorded by Kingham as part of the Goobang National Park assessment. A group of three sites recorded south and east of Tomingley fall within the Goobang National Park. These comprise two open camp sites and one modified tree (# 35-6-0073, 0104 and 0105).

A group of four sites (# 35-6-0133, 0134, 0135 and 0136) all apparently modified trees along / near the Newell Highway immediately north of Peak Hill were recorded by Mills. Again the auspices under which these sites were recorded is unknown.

In Peak Hill itself is an old recording of a quarry site (# 35-6-0005) shown to be located in the western portion of the township and a few streets away is a modified tree record lodged by Bell (# 35-6-0009). West of the Peak Hill township are two final sites, a modified tree recorded on the Bogan Road by Bluff (# 35-3-0104) and a carved tree also on the Bogan River and registered with AHIMS by Bell. It is quite likely that this latter carved tree is one that was first recorded by Etheridge in 1918, and noted as being on the east side of the Bogan River on Mungery Holding (informant Milo Mungery). The AHIMS record is called ‘Mingelo’ which may be a mix up of Milo and Mungery. Four carved trees are said to have occurred in this location, surrounding the grave of a ‘doctor’. Mr Milne is recorded as having exhumed the skeleton, finding a rush basket containing the rock chips under the skull (Etheridge 1918: 41). The glyphs on these trees were all different and included wavy lines as well as joined concentric ellipses.

Of this suite of sites, those most directly relevant to current study are all modified trees within the Newell Highway road corridor in the centre of the TGP Mine Site. The recording of other carved trees between Tomingley and Narromine and in the surrounding areas indicates the previous presence of these sites in the landscape, although the likelihood of these trees remaining extant is low.

4.6 PREDICTIVE MODEL FOR SITE LOCATION

Proximity to a permanent water supply is the primary factor appearing to determine the location of Aboriginal camp sites. In the Sydney region, stream ordering has been used to predict the potential for site occurrence, as well as to indicate the possible nature of these sites in terms of their complexity. Results of an integrated series of studies including a serious excavation component (Jo McDonald CHM, 1997), suggests a high correlation between the permanence of a water source and the permanence and/or complexity of the areas’ Aboriginal occupation. This was further reflected in the lithic assemblages from sites close to permanent water, which suggested that a greater range of activities were represented (e.g. tool use, manufacture and maintenance, food processing and quarrying). Sites near ephemeral water sources had evidence for one-off occupation (e.g. isolated knapping floors or tool discard), and creek junctions were also proven to be foci for site activity.

Using the concept of stream ordering, the results of the predictive models outlined in Section 4.2, and the limited knowledge gained from a review of the local context in

Sections 4.3 and 4.4, the following general predictions can be made regarding the nature of sites and their potential location within the Project Site.

- In the vicinity of second order creeks (such as Gundong Creek, Fiddlers Creek and Wallaby Creek), archaeological evidence may be sparse, but may indicate focussed activity (one-off camp sites / knapping events). With specific reference to Gundong Creek, this was historically a spring culminating in Tomingley itself and historic records suggest the portion of this Creek that runs to the southwest from Tomingley began through channel cutting activity in the 1800's. If this creek portion is 'new' then the likelihood of recording camp sites along it is low.
- On flat plains over 200 m from water, archaeological evidence is likely to be sporadic if present at all.

From the known sites outlined previously in Section 4.4, it is possible to say that the most likely sites to be encountered within the Project Site are as follows.

- Modified trees – scarred or carved (frequently close to creeks and rivers but also found further afield). The extensive clearing of the majority of the Mine Site Study Area lowers the likelihood for this site type within this study area and the Newell Highway corridor has already been assessed. There is high potential for modified trees along the TNWP Study Area in portions possessing remnant vegetation.
- Open camp sites (within 150 m of waterways). Few waterways exist in the Mine Site Study Area (Gundong Creek issues have been mentioned above). The waterways traversed by the linear impact corridors (TNWP and PHTETL Study Areas) have potential for sites to occur along them, although the narrow nature of these easements means that the actual area of their intersection with creek banks is small and hence intersecting sites that may be present is less likely.
- Isolated finds may occur anywhere, especially in disturbed locations near water sources or in areas close to ephemeral water – i.e. headwaters.

If present, sites over the Mine Site Study Area have a low likelihood of remaining intact due to the considerable disturbance this area has undergone from agricultural activities and historic mining exploration. Sites have a relatively higher potential to be present within the undisturbed portions of the TNWP Study Area through parts of the road corridor that have not been cleared, however the previous impacts of road construction and buried infrastructure cables (Telstra) mean that this area has also suffered disturbance that will have impacted sites if present. The easement for the PHTETL Study Area runs primarily through agricultural land that has suffered similar disturbances as the Mine Site Study Area. Wherever the TNWP or the PHTETL Study Areas cross creeks, these locations have the highest potential for either open sites or modified trees to be present.

For the purposes of the current study, site type definitions can be found in **Appendix 4.**

5. SURVEY METHODOLOGY

Field assessment of each of the three study areas comprising the Project Site was undertaken separately and is discussed respectively below.

5.1 MINE SITE STUDY AREA

Heritage assessment over the Mine Site Study Area (Paddocks 1-16) was undertaken using six surveyors over five days resulting in 30 person days being expended in site identification and recording. Field officers were spaced c. 10m to 20m apart in grassed areas with lower ground surface visibility and were spaced c. 5m apart along tracks and areas of high ground surface visibility. Paddock 17 was surveyed at a later date (November 2010) using the same methods, although rain did impede progress.

The Mine Site Study Area was divided into paddocks (delineated by fence lines and landscape features), numbered according to survey sequence (**Figure 7**) and each was traversed using pedestrian transects. During survey, many paddocks were covered in crops of various heights or heavily grassed. Where crops were low, visibility of the disturbed deposits was very high. Exposed creek banks and eroded dams etc. provided a window to other disturbed ground surfaces.

The vegetated margins of various paddocks, along the Mine Site Study Area boundaries or fence lines, contained mature trees of an age to possess cultural scars. All such trees were assessed.

As survey of the entire Newell Highway road corridor within the boundaries of the TGP Mine Site had already been the subject of archaeological and cultural heritage assessment in 2003, it was agreed by all that this area did not require re-survey. The four modified trees recorded (# 35-6-0139, 0140, 0141 and 0142) are summarised in Section 6.

5.2 PHTETL STUDY AREA

The PHTETL Study Area was surveyed on foot and was covered in one pass (from south to north). The team split up unto two groups, each with an Aboriginal community representative, GPS and maps. The easement was traversed in sections with the surveyors between 5 and 10 m apart.

5.3 TNWP STUDY AREA

The TNWP Study Area field assessment was undertaken using four surveyors over one day and five surveyors over a further day, resulting in nine person days being expended in site identification and recording.

The entire study area was walked and covered in one pass starting from Tomingley moving north towards Narromine on day 1 and then on day 2 from the ‘Woodlands’ property in the north moving south and meeting up the day 1 endpoint. The team split into two groups, each with an OzArk representative, an Aboriginal community representative, a GPS and maps. The Study Area was traversed using pedestrian transects with the surveyors no more than 5 to 10 m apart. Two small areas (c. 400 m each) along the TNWP Study Area with dense ground cover and no mature trees were not assessed as there was low potential for Aboriginal sites being detected.

5.4 EFFECTIVE SURVEY COVERAGE

5.4.1 General

Ground surface visibility does not affect the detection of all site types. It is predominantly open sites, isolated finds, deposits associated with shelters and to a lesser degree grinding groove sites that are impacted by this factor. For these sites, the degree of ground surface visibility combined with archaeological post-formation processes (i.e. whether sites are obtrusive as a result of factors that have occurred since they were formed) will both influence the effectiveness of archaeological field survey. Consequently, it is considered important to document and assess variables associated with ground surface visibility in relation to the landforms surveyed (**Table 2**).

Table 2
Estimated Effective Survey Coverage

Page 1 of 2

Study Area	Landform	Paddock # (see Figure 7)	Paddock Component description / disturbance	Overall exposure %	Sites recorded
Mine Site	Flat open.	1	Medium height crop area – 80% Dams x 3 – 5% Tracks – 5 % Vegetated boundary -10%	30% 80% 90% 80%	1 1 0 6
Mine Site	Flat open.	2	Medium height crop area – 60% Dams and surrounds – 15% Tracks – 5 % Vegetated boundary -10% Creek line – 10%	30% 80% 90% 80% 70%	0 0 0 1 0
Mine Site	Flat open.	3	Uncropped – 90% Dams and surrounds – 10%	30% 80%	0 0
Mine Site	Flat open.	4	High height crop area – 85% Dams– 5% Tracks – 5 % Vegetated boundary -5 %	20% 80% 90% 80%	0 0 0 0
Mine Site	Flat open.	5	V. low height crop area – 40% Uncropped – 40% Dams, bunding– 10% Vegetated boundary -10 %	80% 60% 90% 70%	0 2 0 1
Mine Site	Flat open.	6	High height crop area – 75% Dams– 5% House n yards – 10% Tracks – 5 % Vegetated boundary -5 %	20% 80% 40% 80% 80%	0 0 0 0
Mine Site	Flat open.	7	Low emerging crop -35% Knee high crop – 55% Dam – 5% Tracks – 5 %	80% 20% 80% 80%	0 0 0 0
Mine Site	Flat open.	8	Low crop – 100%	80%	0
Mine Site	Flat open,	9	Gilgai country – 100%	40-80%	1
Mine Site	Flat open.	10	Low ground cover- grazing – 95% Vegetated boundary -5 %	80%	0 0
Mine Site	Flat open.	11	Low crop – 95% Small tree patches – 5%	80 % 70%	1 0
Mine Site	Flat, Creek line	11a	Gundong Creek and banks – 100%	80%	4
Mine Site	Flat open.	12	Low ground cover- grazing –95% Vegetated boundary -5 %	80 % 70%	0 0
Mine Site	Flat, pocketed with gilgais.	13	Partially vegetated gilgai country – 100%	95%	1
Mine Site	Flat open.	14	Gilgai country – 30% Low crop – 70%		0 0

Table 2 (Cont'd)
Estimated Effective Survey Coverage

Page 2 of 2

Study Area	Landform	Paddock # (see Figure 7)	Paddock Component description / disturbance	Overall exposure %	Sites recorded
Mine Site	Flat open.	15	Low ground cover- grazing –95% Vegetated boundary -5 %	40 % 70%	0 0
Mine Site	Flat open.	16	Low crop – 70%	40%	0
Mine Site	Flat open.	17	Low crop – 70%	30%	0
				Mine Site Subtotal	**19**
PHTETL	Flat open	N/A	Varied – grazed, some cropped	20-80%	3
				PHTETL Subtotal	**3**
TNWP	Creek 'River banks	N/A	Within road corridor Woodlands property Some erosion provided visibility	40%	24
TNWP	Flat Plain	N/A	Within road corridor – cleared Within road corridor - vegetated	40% 20-40%	14
				TNWP Subtotal	**38**
				Total	**60**

5.4.2 Mine Site Study Area

Ground surface visibility was variable across the Mine Site Study Area due to differences in vegetation, recent land use and the timing of crop establishment. Much of the Mine Site Study Area had crops of ankle to knee height; some paddocks had recently been cultivated offering higher levels of visibility. Vehicle access tracks, animal tracks, over-grazed areas and areas of sheet erosion allowed good visibility of approximately 70 to 90%. Areas with patches of remnant vegetation (Paddock 13) had high ground surface visibility with exposed gravelly soils.

The western portion of the Mine Site Study Area that has not been recently grazed is extensively covered with crops, with ground surface visibility in this area c. 0 to 30%. On the eastern portion of the Mine Site Study Area where active grazing and cropping occurs, ground surface visibility was higher at around c. 30 to 70 %.

The vegetated property boundaries (e.g. along the western boundary of paddocks 1, 2 and 4 and the northern boundary of paddocks 5 and 6) contained many mature trees of an age to bear cultural scars and these trees were offered close inspection. It is noteworthy that some scars present on trees were not interpreted as being cultural in origin.

5.4.3 PHETL Study Area

Ground surface visibility was variable as the proposed easement traversed such a variety of landforms and land use areas, from cropped paddocks, to low hill slopes with sparse vegetation around the east of Peak Hill. Overall, visibility along the easement can be generalised as low-moderate.

5.4.4 TNWP Study Area

Ground surface visibility along the TNWP Study Area was also very variable, as may be expected in a survey of this length (c. 46km) which covered various of landforms with shifting degrees of land-use disturbance.

Along previously cleared or disturbed parts of the road corridor, ground surface visibility was between 20% and 40% depending on the degree of soil erosion. Creek banks and creek crossings often had a higher incidence of erosion and offered increased ground surface visibility, where wooded plains offered almost no ground surface visibility. All mature, native trees along the TNWP Study Area corridor were inspected for scarring, ensuring good survey coverage of this site type, while all (although there were few) appropriate areas of high ground surface visibility were inspected, providing equally appropriate survey coverage for artefact site types.

In between the road table drains and clear zones, ground and weed cover was often thick, resulting in a visibility percentage in the vicinity of c. 20%. Interspersed amongst these low visibility areas are scatters of natural pebble and imported road base material with no vegetation. Visibility in such locations is often close to 100%, however background noise created by the pebbles is high. Visibility is also high along disturbed areas such as formed tracks and roads, fence lines and ants' nests.

Ground surface visibility across the majority of this study area was moderate-low given the mature vegetation in the landscape. Vehicle access tracks, animal access tracks, areas of sheet erosion and other naturally cleared areas gave some areas of good visibility. As a general rule of thumb visibility was moderate - low in all areas but lower in select areas of the alluvial floodplains and sporadically low in areas where vegetation occurred.

6. SURVEY RESULTS

6.1 OVERVIEW

Over the three Study Areas, sixty (60) Aboriginal sites were identified; fifty four (54) modified trees (43 scarred, 9 possibly scarred, 1 resource gathering and 1 carved); three (3) open artefact sites (one with PAD), two (2) isolated finds and one (1) ceremonial / dreaming site.

6.1.1 Mine Site Study Area

A total of nineteen (19) Aboriginal sites were recorded within the Mine Site Study Area (**Table 3**). These comprise:

- Two (2) site complexes comprising of a cluster of artefacts;
- Two (2) isolated finds;
- Fifteen (15) modified trees, of which:
  - Eleven (11) are scarred trees (one a possible resource gathering site);
  - Three (3) are possible scarred trees; and
  - One (1) is a carved tree.

6.1.2 PHETL Study Area

A total of three (3) Aboriginal sites were recorded during the PHTETL assessment (**Table 4**). These comprise three (3) modified trees, of which, all are scarred trees.

Table 3
Sites and Coordinates of the TGP Mine Site Study Area

Site Name	format	zone	easting	northing	site type
TGP-OS1	GDA	55	613105	6396157	Open Site
TGP-OS2	GDA	55	613056	6395630	Open Site (GPS 1)
TGP-OS2	GDA	55	613065	6395697	Open Site (GPS 2)
TGP-IF1	GDA	55	613197	6396077	Isolated Find
TGP-IF2	GDA	55	615867	6394529	Isolated Find
TGP-ST1	GDA	55	613071	6395945	Possible Scarred Tree
TGP-ST2	GDA	55	613087	6395894	Scarred Tree
TGP-ST3	GDA	55	613368	6395798	Possible Scarred Tree
TGP-ST4	GDA	55	613004	6395579	Scarred Tree
TGP-ST5	GDA	55	612901	6394846	Scarred Tree
TGP-ST6	GDA	55	613026	6395495	Scarred Tree
TGP-ST7	GDA	55	614364	6393524	Carved Tree
TGP-ST8	GDA	55	614553	6393485	Scarred Tree
TGP-ST9	GDA	55	614551	6393461	Scarred Tree
TGP-ST10	GDA	55	615687	6393944	Possible Scarred Tree
TGP-ST11	GDA	55	614517	6396210	Scarred Tree
TGP-ST12	GDA	55	614515	6396204	Scarred Tree
TGP-ST13	GDA	55	614382	6395982	Scarred Tree
TGP-ST14	GDA	55	614427	6395965	Scarred Tree
TGP-ST15	GDA	55	616528	6394328	Scarred Tree

Table 4
Sites and Coordinates of the TGP PHTETL Study Area

Site Name	format	zone	easting	northing	site type
PHTETL-ST1	GDA	55	613118	6378918	Scarred Tree
PHTETL-ST2	GDA	55	613125	6380607	Scarred Tree
PHTETL-ST3	GDA	55	612801	6377550	Scarred Tree

6.1.3 TNWP Study Area

A total of thirty eight (38) Aboriginal sites were recorded during the TNWP assessment (**Table 5**). These comprise:

- One (1) site complex with PAD comprising of a cluster of artefacts;
- One (1) ceremonial and dreaming site;
- Thirty-six (36) modified trees, of which:
  - Twenty-nine (29) are scarred trees;
  - Six (6) are possible scarred trees;
  - One (1) is a scarred tree / ceremonial and dreaming site.

Table 5
Sites and Coordinates of the TGP TNWP Study Area

Site Name	format	zone	easting	northing	site type
TNWP-OS1 with PAD	AGD	55	624398	6431248	Open Site (GPS 1)
	AGD	55	624402	6431138	Open Site (GPS 2)
	AGD	55	624395	6431070	Open Site (GPS 3)
	AGD	55	624382	6430975	Open Site (GPS 4)
TNWP-ST1	AGD	55	614439	6396237	Scarred tree
TNWP-ST2	AGD	55	613903	6398250	Scarred tree
TNWP-ST3	AGD	55	613915	6398413	Scarred tree
TNWP-ST4	AGD	55	613915	6398412	Scarred tree
TNWP-ST5	AGD	55	614039	6399566	Scarred Tree
TNWP-ST6	AGD	55	614230	6401347	Possible Scarred Tree
TNWP-ST7	AGD	55	614420	6404107	Scarred Tree
TNWP-ST8	AGD	55	614632	6406434	Scarred Tree
TNWP-ST9	AGD	55	614642	6406558	Scarred Tree / Ceremonial
TNWP-ACD1	AGD	55	614649	6406572	Ceremonial / Dreaming
TNWP-ST10	AGD	55	614673	6406648	Scarred Tree
TNWP-ST11	AGD	55	614740	6407444	Scarred Tree
TNWP-ST12	AGD	55	614819	6408470	Possible Scarred Tree
TNWP-ST13	AGD	55	615316	6413898	Scarred Tree
TNWP-ST14	AGD	55	615525	6416359	Scarred Tree
TNWP-ST15	AGD	55	623925	6430436	Scarred Tree
TNWP-ST16	AGD	55	623929	6430430	Scarred Tree
TNWP-ST17	AGD	55	622169	6428427	Scarred Tree
TNWP-ST18	AGD	55	621985	6427312	Scarred Tree
TNWP-ST19	AGD	55	621923	6427311	Possible Scarred Tree
TNWP-ST20	AGD	55	621925	6426951	Scarred Tree
TNWP-ST21	AGD	55	621828	6426366	Scarred Tree
TNWP-ST22	AGD	55	621747	6225838	Scarred Tree
TNWP-ST23	AGD	55	621737	6425766	Scarred Tree
TNWP-ST24	AGD	55	619467	6424356	Scarred Tree
TNWP-ST25	AGD	55	619386	6424375	Possible Scarred Tree
TNWP-ST26	AGD	55	618563	6424489	Scarred Tree
TNWP-ST27	GDA	55	617840	6424831	Scarred Tree
TNWP-ST28	GDA	55	617250	6424944	Scarred Tree
TNWP-ST29/ #36-3-0013 ?	AGD	55	616091	6422297	Scarred Tree
TNWP-ST30	GDA	55	616375	6424080	Possible Scarred Tree
TNWP-ST31	AGD	55	615692	6417807	Scarred Tree
TNWP-ST32	AGD	55	615799	6419055	Possible Scarred Tree
TNWP-ST33	AGD	55	615795	6418948	Scarred Tree
TNWP-ST34	AGD	55	615792	6418921	Scarred Tree
TNWP-ST35	AGD	55	615793	6418866	Scarred Tree
TNWP-ST36	GDA	55	615676	6416721	Scarred Tree

The location of each of these sites is presented on **Figures 11** to **14** and a description of each is provided in Sections 6.1.2 to 6.1.4.

Although these results summarise well the recorded Aboriginal heritage resource of the TPG Project Site, it also must be anticipated that further isolated artefacts or additional material may be present given the large scale of the TGP Study Area, its moderate ground surface visibility and the active nature of erosive processes.

6.1.4 Details of Mine Site Study Area Survey Results

TGP-OS1 ***Peak Hill 8532-1 & 1V: 50K*** ***GDA 0613105 E 6396157 N***

Tomingley Gold Project open site one (TGP-OS1) is situated at an elevation of 280 m Australian Height Datum (AHD), on the western outskirts of Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW.

The site lies along the bank of an unnamed drainage line within a low flat plain (**Plates 4** & **5)**. The landscape is mostly unmodified with some trampling by livestock (**Figure 11**).

Three artefacts were visible in the exposure and include two quartz flakes measuring 21.6 x 11.1 x 5.6 mm and 28.2 x 22.6 x 6.6 mm respectively (**Plate 6)**. The third flake is made from fine grained silcrete measuring 37.5 x 37 x 7.4 and has two negative flake scars and a wide platform.

There is limited potential for further artefacts although the density is likely to be low and the site is quite deflated already.

TGP-OS2 ***Peak Hill 8532-1 & 1V: 50K*** ***GDA 0613056 E 6395630 N***

Tomingley Gold Project open site two (TGP-OS2) is situated at an elevation of 273 m AHD, on the western outskirts of Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW.

The site lies approximately 100 m from a temporary spring called Ten Mile Spring within a low flat plain (**Figure 11**). The site is within a box woodland landscape that has been previously cleared for agricultural purposes. Artefacts were located within a large exposure between the property fence line and the existing track (**Plate 21)**. Several stone materials including quartz, quartzite, and fine grained silicates were used to produce artefacts, as well as poorer quality materials (**Table 6**).

A summary of the stone artefacts located at TGP-OS2 is presented in **Table 6**, and examples shown on **Plates 22** & **23. Figure 15** provides a sketch map showing the distribution of artefacts within this complex.

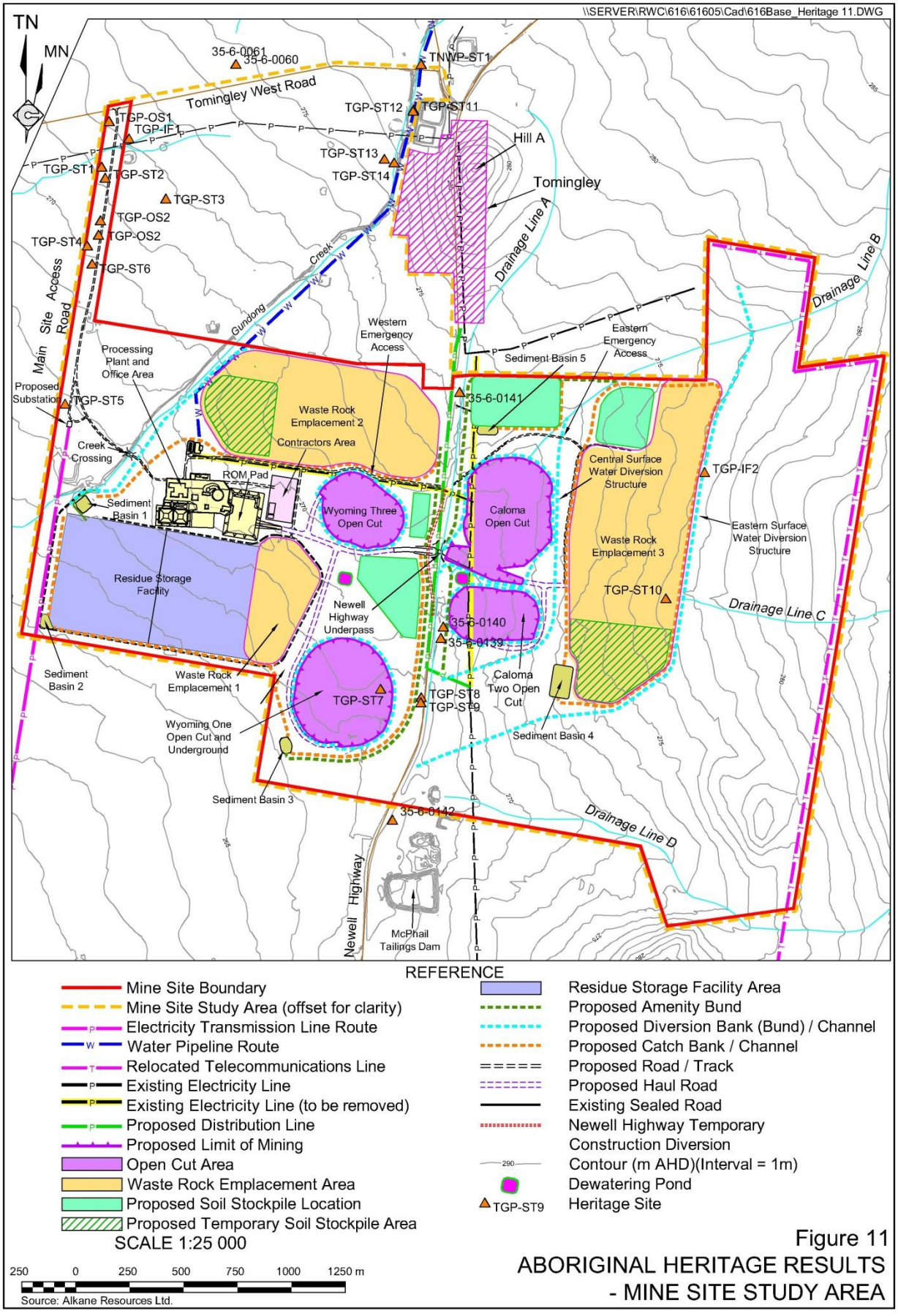


Figure 11
ABORIGINAL HERITAGE RESULTS
- MINE SITE STUDY AREA

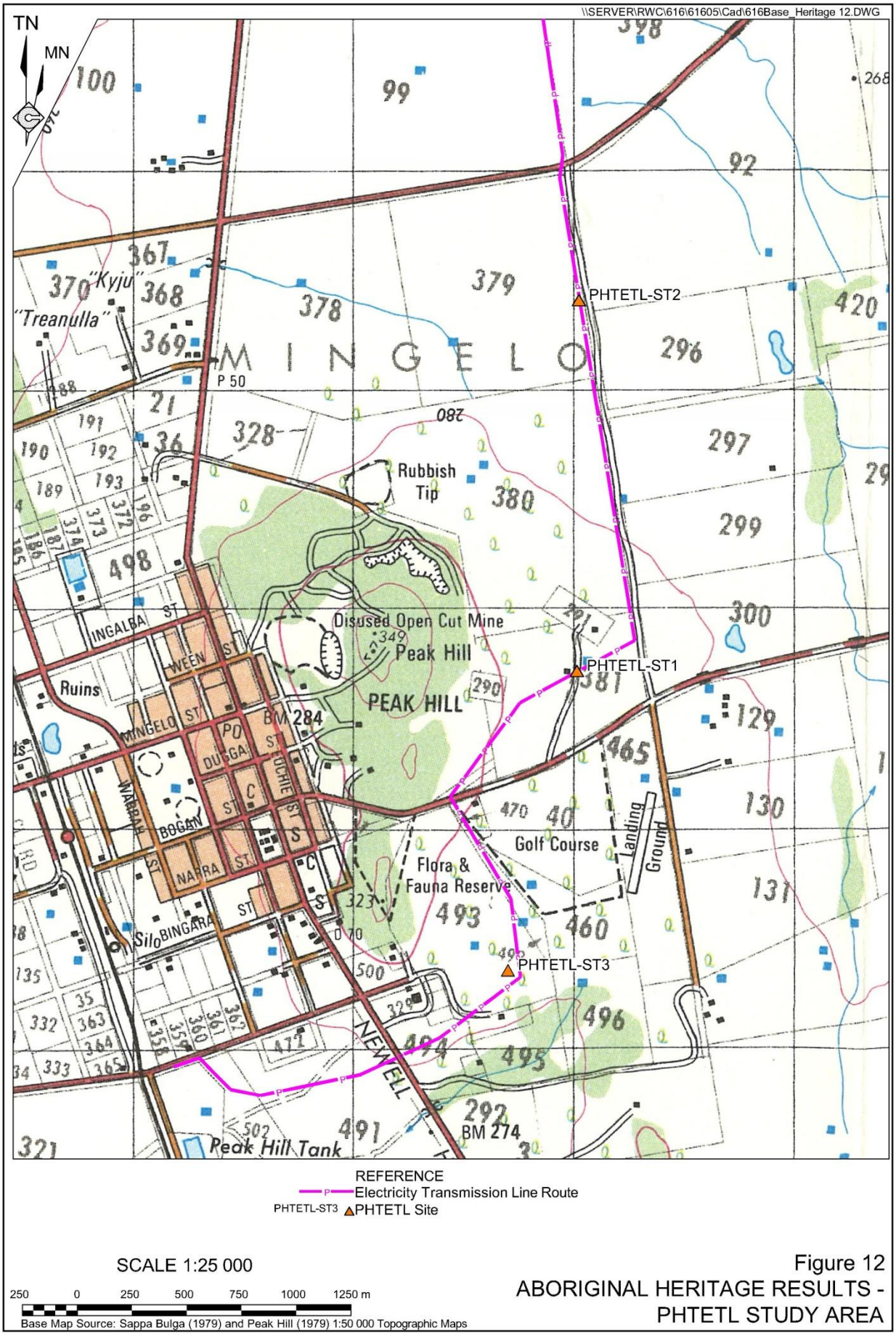


Figure 12
ABORIGINAL HERITAGE RESULTS - PHTETL STUDY AREA

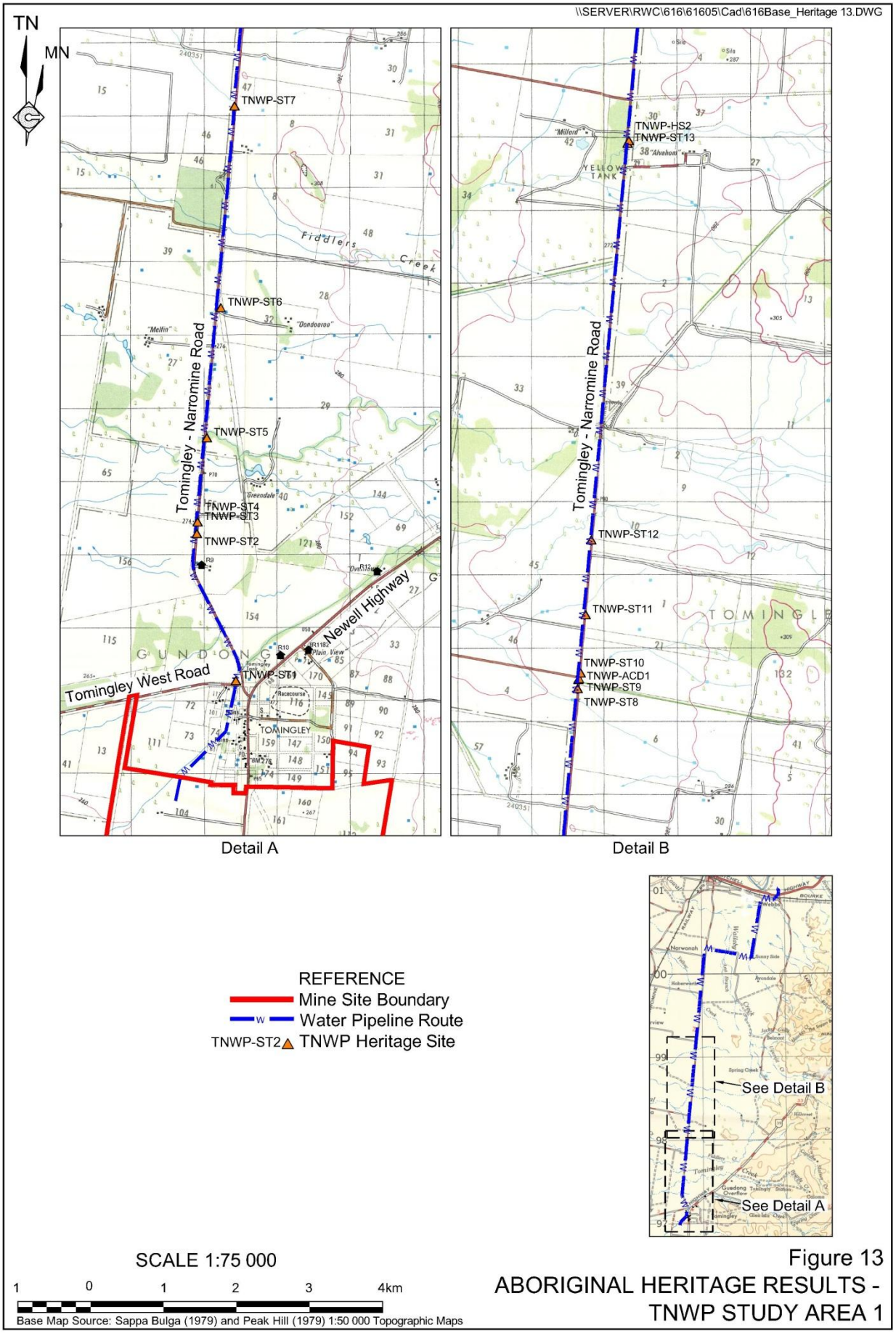


Figure 13
ABORIGINAL HERITAGE RESULTS - TNWP STUDY AREA 1

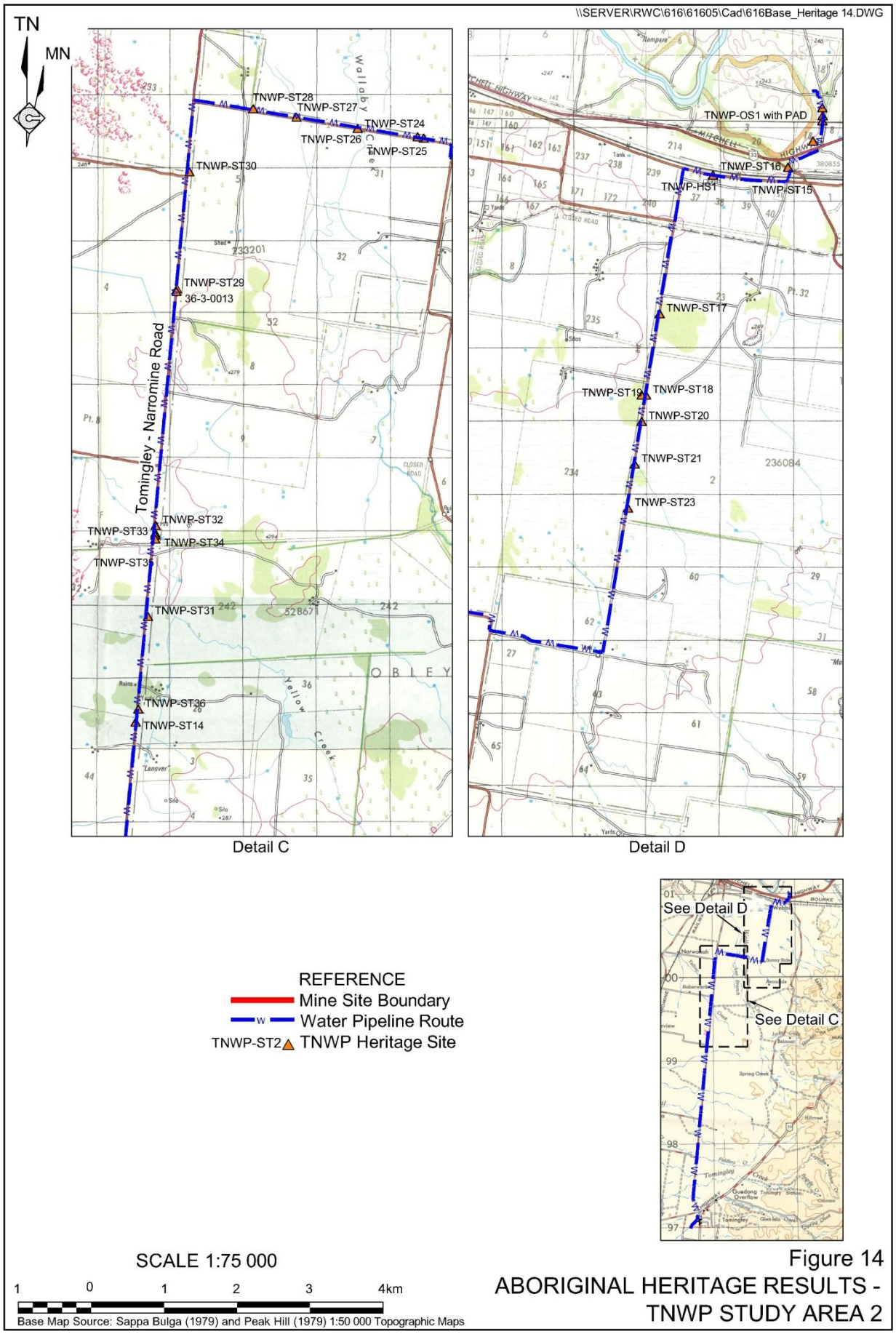


Figure 14
ABORIGINAL HERITAGE RESULTS - TNWP STUDY AREA 2

Table 6
Artefact Descriptions – TGP-OS2

Artefact #	Artefact Description	Material	Comment	Dimensions (mm)
1	Flake	Quartz		18.5 x 9.5 x 3
2	Flake piece	Quartzite		33 x 26.5 x 11
3	Broken Flake	Quartz		12.5 x 10 x 2
4	Core fragment?	Volcanic		41 x 28.5 x 14
5	Flake	FGS	Black	28 x 18 x 4
6	Core fragment?	Indurated mudstone	Brown /grey. Several area of platform preparation. Looks like material testing	38 x 41 x 17
7	Flake	Chert	Banded. 3 (-)ve flake scar on the dorsal surface	20 x 18 x 4.5
8	Core fragment?	Rhyolite	Green /grey. 2 localised areas of platform development. Material testing. 20% cortex and remainder developed a significant patina	81 x 41 x 26
9	Flake	Quartzite	Brown. Rough (-) ve flakes on surface material is very coarse	22 x 6 x 9
10	Flake	Quartzite	Brown. Very coarse, rubbish material. Platform preparation and 3 (-) ve flake scars on the dorsal surface. Almost hinged termination	45 x 34 x 13
11	Flake	River cobble (Greywhacke)	5 % cortex	54 x 31 x 8
12	Blade flake	Grey FGS		33 x 14 x 4
13	Flake	Quartz	Possible	22 x 16.5 x 8
14	Flake	FGS	Grey	23 x 22 x 5
15	Flake piece	Quartzite	Poor quality	30.5 x 22 x 10
16	Core fragment	FGS	Brown. Poor quality material. Evidence of platform preparation	39 x 27 x 13
17	Flake	FGS	Brown / tan.	30.5 x 39 x 17
18	Flake	Quartz	Fine Brown. 2 (-) ve flake scars on the dorsal surface	20.4 x 21.5 x 7

TGP-IF1 Peak Hill 8532-1 & 1V: 50K GDA 613197 E 6396077 N

Tomingley Gold Project Isolated Find One (TGP-IF1) is situated at an elevation of 274 m AHD, within Lot 111 DP 755110 near the northwestern boundary of the Mine Site Study Area, on the western outskirts of Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11**, **Plate 7)**.

The artefact is a fragment of a sandstone grinding implement, measuring 74.5 x 72 x 27 mm. It is located within a disturbed temporary spring area (possibly the old Ten Mile Spring?) now a low flat plain, 20 m from an old electricity pole (**Figure 11**). The site is within a box woodland landscape that has been previously cleared for agricultural purposes.

TGP-IF2 Peak Hill 8532-1 & 1V: 50K GDA 615867 E 6394529 N

Tomingley Gold Project Isolated Find Two (TGP-IF2) is situated at an elevation of 279 m AHD, within Lot 112 DP 755110 the Mine Site Study Area, on the western outskirts of Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW. It is located within a recently ploughed paddock (paddock 11) within a box woodland landscape that has been previously cleared for agricultural purposes **(Figure 11**, **Plate 57)**.

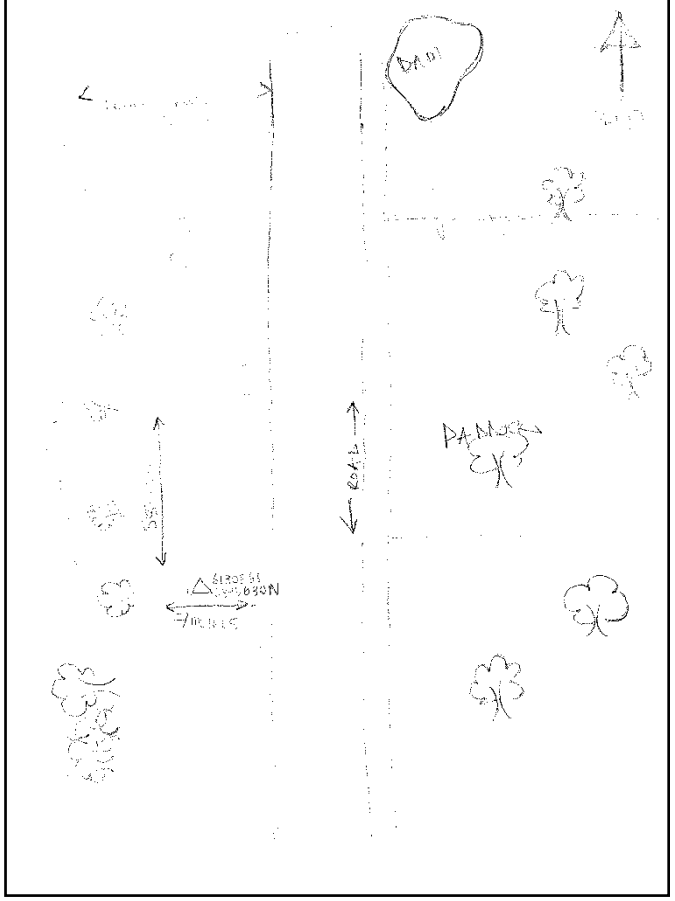


Figure 15
SITE SKETCH – TGP-OS2

The artefact is a possibly anvil made from river cobble, measuring 15 x 10 x 6 cm. The surface is flat and shiny with patina on the reverse side (**Plate 58)**. This stone was interpreted by the Aboriginal Community as being used as an anvil because of the rubbing / pitting on the side of the rock.

TGP-ST1 Peak Hill 8532-1 & 1V: 25K GDA 613071 E 6395945 N

Tomingley Gold Project possible modified tree 1 (TGP-ST1) is situated at an elevation of 175 m AHD, within Lot 111 DP 755110 near the northwestern boundary of the Mine Site Study Area, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11).**

The modified tree is a White Box (*Eucalyptus albens)*. The tree is alive and in good condition approximately 20 m tall and 2.4 m in trunk circumference. The trunk bears two scars. The first scar is 37 cm in current length, 19 cm wide, with regrowth of c. 27 cm. The height of the base of the scar is 35 cm above the ground (**Plate 8**). No axe marks were noted. The second scar is 65 cm in current length, 10 to 23 cm wide, with regrowth of c. 37 cm (**Plate 9**). This scar extends to the ground. No axe marks were noted. The Aboriginal community believe that both of these scars are food procurement scars rather than the stripping of bark for a tool or implement.

TGP-ST2 Peak Hill 8532-1 & 1V: 25K GDA 613087E 6395894 N

Tomingley Gold Project modified tree 1 (TGP-ST1) is situated at an elevation of 175 m AHD, Lot 111 DP 755110 near the northwestern boundary of the Mine Site Study Area, c. 50 m south of TGP–ST1, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 11**).

The modified tree is a Grey Box (*E. microcarpa)*. The tree is alive and in good condition approximately 20 m tall and 3.25 m in trunk circumference. The trunk bears three scars. The first scar is 1.87 cm at least in current length, 67 cm wide, with regrowth of c. 15 cm and is oriented southeast. The height of the base of the scar is 45 cm above the ground (**Plate 10**). No axe marks were noted.

The second scar is 100 cm at least in current length, 50 cm wide, with regrowth of c. 15 cm and oriented southeast. The height of the base of the scar is 2.5 m above the ground and is above scar 1 (**Plate 11**). An old epicormal shoot arises from the base of this scar, with possible axe marks present in the scar.

The third scar is almost closed completely over, is 6 – 170 cm at least in current length, 6 to 40 cm wide, with regrowth of c. 37 cm and oriented north (**Plate 12**). The height of the base of the scar is 25 cm above the ground. No axe marks were noted in the third scar.

All three scars are assessed as Aboriginal in origin, conforming to the current DECCW criteria.

TGP-ST3 Peak Hill 8532-1 & 1V: 25K GDA 613368 E 6395798 N

Tomingley Gold Project possible modified tree 3 (TGP-ST3) is situated at an elevation of 175 m AHD, c. 150 m east of Lot 111 DP 755110 outside the Mine Site Study Area, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is rosewood (*Alectryon oleifolius)* and stands isolated within a cleared paddock. The tree is alive and in good condition approximately 10 m tall. The tree exhibits steel axe marks around the base of the tree indicating a possible attempt at ringbarking or an Aboriginal resource gathering site. The Aboriginal community believe that the small axe scars indicate an Aboriginal resource gathering site where cuts are made to extract small marsupials, honey or smoke out animals (**Plates 13** to **16**).

TGP-ST4 Peak Hill 8532-1 & 1V: 25K GDA 613004 E 6395579 N

Tomingley Gold Project modified tree 4 (TGP-ST4) is situated at an elevation of 271 m AHD, Lot 111 DP 755110 near the northwestern boundary, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)*. The tree is alive and in good condition with a 2.34 m in trunk circumference. The trunk bears one elongated scar, 1.8 m at least in current length, 28 to 50 cm wide, with regrowth of c. 15 cm and oriented southeast. The height of the base of the scar is 1.4 m above the ground (**Plate 17**). No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TGP-ST5 Peak Hill 8532-1 & 1V: 25K GDA 612901 E 6394846 N

Tomingley Gold Project modified tree 5 (TGP-ST5) is situated at an elevation of 250 m AHD, Lot 104 DP 755110 near the western boundary of the Mine Site Study Area, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* in a prior floodplain landscape. The tree is alive and in good condition approximately 25 m tall and 4.5 m in trunk circumference. The trunk bears two scars. The first scar is 284 cm at least in current length, 80 cm wide, with regrowth of c. 33 cm and oriented south. The height of the base of the scar is 156 cm above the ground (**Plate 18**). No axe marks were noted. The second scar is very irregular in shape, 55 cm at least in current length, 28 cm wide, with regrowth of c. 33 cm (**Plate 19**). The height of the base of the scar is 25 cm above the ground. No axe marks were noted.

The first scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST6 Peak Hill 8532-1 & 1V: 25K GDA 613026 E 6395495N

Tomingley Gold Project modified tree 6 (TGP-ST6) is situated at an elevation of 277 m AHD, Lot 111 DP 755110 near the northwestern boundary of the Mine Site Study Area, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 11**).

The modified tree is a Grey Box (*E. microcarpa)*. The tree is alive and in moderate condition approximately 20 m tall and 2.63 m in trunk circumference. The trunk bears one elongated scar, 177 cm at least in current length, 15 to 60 cm wide, with regrowth of c. 32 cm and oriented southeast. The height of the base of the scar is 97 cm above the ground (**Plate 20**). No axe marks were noted. The heartwood has collapsed out, except at the base of the scar.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TGP-ST7 Peak Hill 8532-1 & 1V: 25K GDA 614364 E 6393524 N

Tomingley Gold Project modified tree 7 (TGP-ST7) is situated at an elevation of 270 m AHD, Lot 1 DP 824086 in the vicinity of the proposed Wyoming One Open Cut, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Fuzzy Box (*E. conica)* and includes very eroded evidence of what appears to be carving within the scar (**Plate 45**). The tree is alive but in poor condition. The tree has been previously ringbarked, however has since regenerated. The ringbarking cuts into the carving and therefore postdates the carving. The carving appears to have been done with a steel axe at the base, but possibly with a stone axe in the remnant surface part of the heartwood at the top of the scar. At least the bottom part of the surface heartwood is gone, however, it is present in the top area.

The trunk is 2.40 m in trunk circumference and bears one elongated scar with carvings at the top and bottom of the scar in a diamond criss-cross pattern (**Plate 46**). The scar itself is 128 cm at least in current length, 7 to 13 cm wide, with regrowth of c. 6 cm and oriented due north. A second small scar is evident on the other side of the tree (**Plate 47**).

This tree is highly significant to the Aboriginal Community, who believe it may be associated with a burial, as is customary in the area.

TGP-ST8 Peak Hill 8532-1 & 1V: 25K GDA 614553 E 6393485 N

Tomingley Gold Project modified tree 8 (TGP-ST8) is situated at an elevation of 271 m AHD, within Lot 173 DP 755093 c. 8 m west of the fence line adjacent to the highway, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* approximately 20 m tall and 2.0 m in trunk circumference. The trunk bears one small ovoid scar, 65 cm at least in current length and 15 cm wide. The height of the base of the scar is 98 cm above the ground (**Plates 48** & **49**). No axe marks were noted. The heartwood has collapsed out except at the base of the scar.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST9 Peak Hill 8532-1 & 1V: 25K GDA 614551 E 6393461 N

Tomingley Gold Project modified tree 9 (TGP-ST9) is situated at an elevation of 271 m AHD, within Lot 173 DP 755093 c. 8 m west of the fence line adjacent to the highway, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a dead Grey Box (*E. microcarpa)* approximately 20 m tall and 288 cm in trunk circumference. The trunk bears one small ovoid scar, 59 cm at least in current length, 18 cm wide with a maximum regrowth depth of 8 to 10 cm. The scar almost extends to the ground with the height of the base of the scar is 5 cm above the ground (**Plate 50**). No axe marks were noted. The heartwood has collapsed out except at the base of the scar.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST10 Peak Hill 8532-1 & 1V: 25K GDA 615687 E 6393944 N

Tomingley Gold Project possible modified tree 10 (TGP-ST10) is situated within Lot 112 DP 755110 in the proposed Waste Rock Emplacement 3 area within the Mine Site Study Area, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* approximately 25 m tall and 320 cm in trunk circumference. The trunk bears one small elongated scar, 168 cm at least in current length, 20 cm wide with a maximum regrowth depth of 30 cm (**Plate 59**). The height of the base of the scar is 20 cm above the ground. No axe marks were noted.

The scar on this tree is assessed as being of possible Aboriginal origin, conforming to only some of the DECCW criteria (it tears to the ground).

TGP-ST11 Peak Hill 8532-1 & 1V: 25K GDA 614517 E 6396210 N

Tomingley Gold Project modified tree 11 (TGP-ST11) is situated on the western side of the proposed water pipeline route 1.2km north of the Mine Site, at an elevation of 283 m AHD in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* in a prior floodplain landscape c. 20 m from Gundong Creek. The tree is dead, approximately 30 m tall and 1.9 m in trunk circumference. The trunk bears one elongated scar, 130 cm at least in current length, approximately 48 cm wide and oriented south southwest (**Plate 60)**. The height of the base of the scar is 60 cm above the ground. No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST12 Peak Hill 8532-1 & 1V: 25K GDA 614515 E 6396204 N

Tomingley Gold Project modified tree 12 (TGP-ST12) is situated on the western side of the proposed water pipeline route 1.2km north of the Mine Site, at an elevation of 283 m AHD, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* in a prior floodplain landscape 20 m from Gundong Creek. The tree is alive and in moderate condition approximately 30 m tall and 4.18 m in trunk circumference. The trunk bears one elongated scar, 165 cm at least in current length and oriented west (**Plate 61**). The height of the base of the scar is 30 cm above the ground. No axe marks were noted. At the base of the tree there is a build up of material from the dredging of Gundong Creek to create a flood levee.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST13 Peak Hill 8532-1 & 1V: 25K GDA 614382 E 6395982 N

Tomingley Gold Project modified tree 13 (TGP-ST13) is situated on the western side of the proposed water pipeline route 900 m north of the Mine Site, at an elevation of 285 m AHD, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Fuzzy Box (*E. conica)* in a prior floodplain landscape next to Gundong Creek. The tree is alive and in good condition approximately 25 m tall and 2.6 m in trunk circumference. The trunk bears two scars. The first scar is 33 cm at least in current length, with regrowth of c. 15 cm and oriented south (**Plate 62**). The height of the base of the scar is 13 cm above the ground No axe marks were noted. The second scar is 16 cm at least in current length, with regrowth of c. 15 cm (**Plate 63**). The height of the base of the scar is 15 cm above the ground. No axe marks were noted.

Both scars are assessed as Aboriginal in origin, conforming to the current DECCW criteria.

TGP-ST14 Peak Hill 8532-1 & 1V: 25K GDA 614427 E 6395965 N

Tomingley Gold Project modified tree 14 (TGP-ST14) is situated on the western side of the proposed water pipeline route 900 m north of the Mine Site, at an elevation of 284 m AHD, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Bimble Box (*E. populnea* subsp. *bimbil)* in a prior floodplain landscape, 20 m from Gundong Creek. The tree is alive and in fair condition approximately 20 m tall and 2.87 m in trunk circumference. The trunk bears one elongated scar c. 28 cm at least in current length and oriented south (**Plates 64** & **65**). Wire fencing is tied around the base of the trunk around the scar, which may affect its longevity. The height of the base of the scar is c. 30 cm above the ground. Steel axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TGP-ST15 Peak Hill 8532-1 & 1V: 25K GDA 616528 E 6394328 N

Tomingley Gold Project modified tree 15 (TGP-ST15) is situated within paddock number 13 on the eastern side of the Mine Site boundary at an elevation of 283 m AHD, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW **(Figure 11)**.

The modified tree is a Grey Box (*E. microcarpa)* within a relatively flat landform pocketed with gilgai's. The tree is within a Belah / Grey Box Woodland that has sparse ground surface cover partially due to the colluvial wash off from the nearby hills and its agricultural land use history.

The tree is alive and in moderate condition approximately 15 m tall and 3.44 m in trunk circumference. The tree has two main trunks stemming from the ground and it looks as though the second trunk had an epicormal shoot that has torn off at the base creating a second scar.

The trunk bears two elongated scars, oriented northwest (**Plate 76**). Both the scars have small pockets of heartwood missing. The first scar is c. 110-140 cm at least in current length, c. 15 - 50 cm wide and has a maximum depth of regrowth of c. 23 cm. The height of the base of the scar is c. 105 cm above the ground. No axe marks were noted. This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

The second scar is a possible Aboriginal scar and is c. 107-130 cm at least in current length, approximately c. 19 - 35 cm wide and has a maximum depth of regrowth of c. 20 cm. This scar extends to the ground. No axe marks were noted.

6.1.5 Details of PHTETL Study Area Survey Results

PHTETL-ST1 Peak Hill 8532-1 & 1V: 25K GDA 613118 E 6378918 N

PHTETL modified tree 1 (PHTETL-ST1) is situated approximately 1.5km to the east of Peak Hill, between Poles 23 and 24 within the proposed PHTETL Study Area, in the Parish of Mingelo, County of Narromine and Shire of Timbrebongie, NSW (**Figure 12**).

The modified tree is a Fuzzy Box (*E. conica)* within a gentle toe slope landform that has been mostly cleared and grazed. The tree is dead and in poor condition with some regrowth. The tree is approximately 15 m tall and 2.15 m in trunk circumference. The trunk bears one irregular shaped scar c. 126 cm at least in current length, with a width of c. 55 cm and a regrowth of c. 20 cm and oriented west-northwest. The height of the base of the scar is c. 35 cm above the ground (**Plates 79** and **80**). No axe marks were noted.

This scar is assessed as Aboriginal in origin, conforming to the current DECCW criteria.

PHTETL-ST2 Peak Hill 8532-1 & 1V: 25K GDA 613125 E 6380607 N

PHTETL modified tree 2 (PHTETL-ST2) is situated approximately 2.5km to the northeast of Peak Hill within a remnant patch of grey box along the road corridor on the western side of the road corridor within the proposed PHTETL Study Area. PHETL-ST2 is located at an elevation of 281 m AHD, in the Parish of Mingelo, County of Narromine and Shire of Timbrebongie, NSW (**Figure 12**).

The modified tree is a Grey Box (*E. microcarpa)* within a flat plain landscape that has been mostly cleared and grazed. The tree is situated adjacent to the fence line of property Lot 379 close by to a temporal water source. The tree is approximately 20 m tall and 3.08 m in trunk circumference.

The tree is in good condition, has several hollows and exhibits one coolamon scar and several other scars. The ovoid coolamon scar is c. 30 to 50 cm at least in current length, with a width of c. 12 cm, a regrowth of c. 14 cm and oriented west-northwest. The height of the base of the scar is 45 cm above the ground (**Plate 82**). No axe marks were noted. There are several other scars located at the base of the tree. These were interpreted by the Aboriginal community to be resource gathering sites i.e. grub collecting, with one gunyah piece (torn off piece of bark used for a shelter) (**Plates 81, 83** & **84**).

***PHTETL- ST3 Peak Hill 8532-1 & 1V: 25K GDA 612801 E 6377550* N**

PHTETL modified tree 3 (PHTETL-ST3) is situated on the southwestern outskirts of Peak Hill to the east of the Newell Highway within the PHTETL Study Area approximately 60m from proposed Pole 14. PHETL-ST3 is located at an elevation of 292 m AHD, in the Parish of Mingelo, County of Narromine and Shire of Timbrebongie, NSW (**Figure 12**).

The modified tree is a Fuzzy Box (*E. conica)* within a toe slope landform that has been mostly cleared and grazed, situated close to a temporary water source. The tree is in poor condition, approximately 15 m tall and 2 m in trunk circumference. The trunk bears 3 scars. The first scar is irregular shaped, oriented east, 102 - 120 cm at least in current length, with a width of c. 50 cm and a regrowth of c. 8 cm (**Plates 85** & **86**). The second scar is an ovoid scar oriented north, c. 20 cm at least in current length, with a width of c. 8 cm (**Plate 87**). The third scar is almost completely closed over and no detail of the scar was recorded. The first scar exhibits a double line of axe marks made with a steel axe.

This first scar is assessed as Aboriginal in origin, conforming to the majority of the DECCW criteria.

This tree is in close proximity to two more trees (outside the ETL easement) exhibiting the same double line of axe marks (coordinates GDA 612910, 6377504, **Plate 88** and 612875, 6318495, **Plate 89**). Without obtaining further information on the unusual markings, no further interpretation as to their meaning can be made, but it is worth noting that a further tree with this marking was recorded along the water pipeline route.

6.1.6 Details of TNWP Study Area Survey Results

One previously recorded Aboriginal site is located within the TNWP Study Area. Attempts were made to relocate it based on the eastings and nothings provided on the AHIMS database. The single coordinate given for this site (DECCW # 35-3-0013) as described in the local context, in fact consists of five carved trees. Inherent in the single GPS position is a large area that encompasses all these trees, thus pinpointing individual carved trees was difficult. In addition, original recording of this site was from the early twentieth century and coordinates were in latitudes and longitudes which have now been converted into eastings and northings and hence the accuracy of the location data is likely to be poor. Furthermore the data we have on the trees of this site is very limited.

One tree with a possible old closed up scar was located in almost the exact GPS position given for this site (**Plates 189** to **192**). Due to the previously mentioned difficulties in interpreting the nature of site DECCW # 35-3-0013, and as the tree located has a scar that is completely closed it is impossible to determine if this tree may be part of Aboriginal site DECCW # 35-3-0013. As four other carved trees are meant to occur within the vicinity, close by mature trees were inspected for scars. Only one tree with a broken scar was located TNWP-ST29 (details of this recording are in the following section).

TNWP-OS1 with PAD Peak Hill 8532-1 & 1V: 25K AGD 624398 E 6431248 N

Tomingley Narromine Water Pipeline Open Site One with PAD (TNWP-OS1 with PAD) is located at an elevation of 286 m AHD, on a river terrace / aeolian dune landform 50 m south of the old Macquarie River palaeochannel and 6km east of Narromine, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The surface manifestations of this site can be seen along the eroding edge of the red sandy soils of the terraced area for at least 100 m (**Plate 149**). This site has the potential for sub-surface deposits, possibly of some depth, as well as limited potential for burials due to the suitable sandy deposits[7]. The actual alignment of the proposed water pipeline extends along the northern side of the access track into "Woodlands" (which is comprised of imported deposits) in a zone where there was no visibility but that was adjacent to the eroding terrace edge noted above. In all areas of true ground surface visibility, artefacts were recorded (**Plate 152**).

Dozens of artefacts were visible (including flakes, cores and scrapers) on the terrace edge from the break of the slope to the edge of the private road and beyond. Stone materials found included: quartz, indurated mudstone, chert and granite (**Plates 150** & **151).**

Site TNWP-OS1 with PAD has already been impacted by ploughing, cattle grazing, installation of fences, water infrastructure and access tracks, all of which have generated disturbance to this site and in some cases, caused increased erosion.

Due the nature of the elevated river bank landform, the high density and extent of artefacts, the presence of *in situ* artefacts and proximity to other sites, it is assessed that there is high potential for sub-surface archaeological deposits to be present at this site.

TNWP-ST1 Peak Hill 8532-1 & 1V: 25K AGD 614439 E 6396237 N

Tomingley Narromine Water Pipeline modified tree 1 (TNWP-ST1) is situated at an elevation of 283 m AHD, approximately 30 m from Gundong Creek near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*Eucalyptus populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within the road corridor approximately 15 m from the bitumen edge. The tree is alive and in good condition approximately 15 m tall and 2.5 m in trunk circumference. The trunk bears two elongated scars. The first scar is oriented west, c. 19 cm at least in current length (with an additional base area of the scar buried) and 14 cm wide, with regrowth of c. 23 to 50 cm deep (**Plate 105**). No axe marks were noted. The second scar is oriented north east, 30 cm at least in current length) and c. 3 cm wide, with regrowth of c. 28 to 40 cm deep (**Plates 106** & **107**). No axe marks were noted. Both scars have closed considerably closed.

Both scars are assessed as Aboriginal in origin, conforming to the current DECCW criteria. Their size and shape suggest the removed bark may have been used as a coolamon.

***TNWP-ST2 Peak Hill 8532-1 & 1V: 25K AGD 613903 E 6398250* N**

Tomingley Narromine Water Pipeline modified tree 2 (TNWP-ST2) is situated at an elevation of 278 m AHD, approximately 100 m from Tomingley Creek near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

[7] Lindsay Black's study on burial trees of the Darling Valley in central NSW, noted that burial places were in sandy or soft ground and close to creeks or rivers (Black 1941). Furthermore, burials are noted to occur in the locality as outlined in the local context section of this report (section 4.4).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within the road corridor approximately 15 m from the bitumen edge. The surrounding land has been ploughed and grazed. The tree is alive and in good condition approximately 15 m tall and 2.5 m in trunk circumference. The trunk bears one elongated scar oriented north, c. 125 cm at least in current length and c. 20 to 60 cm wide, with regrowth of c. 13 cm deep (**Plates 108** & **109**). No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST3 Peak Hill 8532-1 & 1V: 25K AGD 613915 E 6398413 N

Tomingley Narromine Water Pipeline modified tree 3 (TNWP-ST3) is situated at an elevation of 278 m AHD, approximately 600 m north of Tomingley Creek near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within the road corridor approximately 15 m from the bitumen edge. The surrounding land has been ploughed and grazed. The tree is alive and in good condition approximately 25 m tall and 2.6 m in trunk circumference. The trunk bears one elongated scar oriented north, c. 100 to 145 cm at least in current length and c. 16 to 56 cm wide, with regrowth of c. 12 cm deep (**Plates 110** & **111**). The tree has bark and soil built up around c. 1 m from the base. No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST4 Peak Hill 8532-1 & 1V: 25K AGD 613915 E 6398412 N

Tomingley Narromine Water Pipeline modified tree 4 (TNWP-ST4) is situated at an elevation of 278 m AHD, approximately 600 m north of Tomingley Creek near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within the road corridor approximately 15 m from the bitumen edge. The surrounding land has been ploughed and grazed. The tree is alive and in poor condition approximately 25 m tall and 2.6 m in trunk circumference. The heartwood has rotted away leaving the main trunk hollow and exposed. The trunk bears one elongated scar oriented northwest, c. 185 to 370 cm at least in current length and c. 32 cm wide, with regrowth of c. 22 cm deep (**Plate 113**). The tree has bark and soil built up around c. 1 m from the base. No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST5 Peak Hill 8532-1 & 1V: 25K AGD 614039 E 6399566 N

Tomingley Narromine Water Pipeline modified tree 5 (TNWP-ST5) is situated at an elevation of 278 m AHD, approximately 10 m from Tomingley Creek on the creek bank near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a River Red Gum (*E. camaldulensis*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within the road corridor approximately 15 m from the bitumen edge. The tree is dead, was approximately 18 to 20 m tall and 3.36 m in trunk circumference. The trunk bears one elongated scar oriented east, c. 56 cm in current length and c. 21 cm wide, with regrowth of c. 15 cm deep and approximately c. 1 m above the ground (**Plates 114** & **115**). The tree has bark and soil built up around its base. No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST6 Peak Hill 8532-1 & 1V: 25K AGD 614230 E 6401347 N

Tomingley Narromine Water Pipeline possible modified tree 6 (TNWP-ST6) is situated on a flood plain, approximately 1km south of Fiddlers Creek near Tomingley, in the Parish of Gundong, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a White Box (*E. Albens*) within a Box-Gum Woodland within the road reserve. The surrounding land has been ploughed and grazed. The tree is alive and in good condition approximately 18 m tall and 2.28 m in trunk circumference. The trunk bears one irregular scar oriented north east, c. 48 to 90 cm at least in current length and c. 14-50 cm wide, with regrowth of c. 9 cm deep (**Plates 121** & **122**). The tree has bark and soil built up around 1 m from the base. No axe marks were noted.

This scar is assessed as a possible Aboriginal scar, conforming to only some DECCW criteria. The shallow regrowth and irregularity of the scar margins suggest it may be resultant from more recent (last 100 years) damage to the tree.

TNWP-ST7 Sappa Bulga 8533-11 & 111: 25K AGD 614420 E 6404107 N

Tomingley Narromine Water Pipeline modified tree 7 (TNWP-ST7) is situated approximately 1.5km north of Fiddlers Creek near Brady's Cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Grey Box (*E. Microcarpa*) within a Box-Gum Woodland within the road reserve. The surrounding land has been ploughed and grazed. The tree is alive and in excellent condition approximately 20 m tall and 3.25 m in trunk circumference. The trunk bears one ovate scar oriented northeast, c. 100 cm at least in current length and c. 15 cm wide, with regrowth of c. 27 cm deep (**Plates 123** & **124**). The tree has bark and soil built up around c. 1 m from the base. No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon or for a shield.

TNWP-ST8 Sappa Bulga 8533-11 & 111: 25K AGD 614632 E 640434 N

Tomingley Narromine Water Pipeline modified tree 8 (TNWP-ST8) is situated in a low floodplain salt marsh / ephemeral waterway at 270 m AHD in elevation near tributaries of Brady's cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve. The surrounding land has been ploughed and grazed. The tree is dead, the heartwood is rotten and the tree has no bark and is 3.1 m in trunk circumference. The trunk bears one ovate scar oriented northeast, 36 to 86cm at least in current length and c. 6-26 cm wide, with regrowth of c. 6 cm deep (**Plate 126** & **127**). No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria, although the tree and scar are in poor condition.

TNWP-ST9 Sappa Bulga 8533-11 & 111: 25K AGD 614649 E 640572 N

Tomingley Narromine Water Pipeline modified tree 9 (TNWP-ST9) is situated in a low floodplain salt marsh / ephemeral waterway at 263 m AHD in elevation near tributaries of Brady's cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

As well as bearing a scar assessed to be of Aboriginal origin, this tree is also an Aboriginal birthing tree according to the Aboriginal community representative. The bulbous burls present over the trunk of this tree led to its interpretation as a women's birthing tree and the Aboriginal community wish to safeguard it. The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve (**Plates 128** & **129**). No measurements of the scar were taken and axe marks were not noted.

TNWP-ACD1 Sappa Bulga 8533-11 & 111: 25K AGD 614649 E 640572 N

Tomingley Narromine Water Pipeline Ceremonial and Dreaming Site (TNWP-ACD2) is an Aboriginal women's birthing tree according to the Aboriginal community representative. It is situated on a low floodplain salt marsh / ephemeral waterway at 270 m AHD at an elevation near tributaries of Brady's cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The bulbous burls over the majority of this tree led to its interpretation as a women's birthing tree and the Aboriginal community wish to safeguard it. The tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve and is over 300 years old. The surrounding land has been ploughed and grazed (**Plates 130** & **131**).

TNWP-ST10 Sappa Bulga 8533-11 & 111: 25K AGD 0614673 E 640648 N

Tomingley Narromine Water Pipeline modified tree 10 (TNWP-ST10) is situated in a low floodplain salt marsh / ephemeral waterway at 263 m in elevation near tributaries of Brady's Cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve. The scar is high in the tree and has been interpreted by the Aboriginal representatives as a clan / boundary marker. The scar is c. 50 cm wide, c. 50 cm long with another possible scar directly underneath this scar (**Plate 205**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST11 Sappa Bulga 8533-11 & 111: 25K AGD 614740 E 6407444 N

Tomingley Narromine Water Pipeline modified tree 11 (TNWP-ST11) is situated in a low floodplain salt marsh / ephemeral waterway near tributaries of Brady's Cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Grey Box (*E. microcarpa*) within a Box-Gum Woodland in the road reserve. The surrounding land has been ploughed and grazed. The tree is alive approximately 15 m tall and 2.78 m in trunk circumference. The trunk bears one ovoid scar oriented northeast, c. 81 to 120 cm at least in current length and c. 23 to 60 cm wide, with regrowth of c. 8 to 25 cm deep (**Plates 134** & **135**). No axe marks were noted.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST12 Sappa Bulga 8533-11 & 111: 25K AGD 614819 E 6408470 N

Tomingley Narromine Water Pipeline possible modified tree 12 (TNWP-ST12) is situated in a low floodplain salt marsh / ephemeral waterway near tributaries of Brady's Cowal, in the Parish of Tomingley, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The possible modified tree is a Grey Box (*E. microcarpa*) within a Box-Gum Woodland in the road reserve. The surrounding land has been ploughed and grazed. The tree is alive approximately 15 m tall and 2.54 m in trunk circumference. The trunk bears one ovoid scar oriented north, c. 120 cm at least in current length and c. 12 - 38 cm wide, with regrowth of c. 16 cm deep (**Plate 136**). No axe marks were noted.

This scar is assessed as a possible Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST13 Sappa Bulga 8533-11 & 111: 25K AGD 615316 E 6413898 N

Tomingley Narromine Water Pipeline modified tree 13 (TNWP-ST13) is situated in a low floodplain salt marsh / ephemeral waterway near yellow tank, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 13**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve. The surrounding land has been ploughed and grazed. The tree is alive approximately 15 m tall and 2.45 m in trunk circumference. The trunk bears one ovoid scar oriented southwest, c. 117 to 150 cm at least in current length and c. 30 to 60 cm wide, with regrowth of c. 18 cm deep (**Plate 139 - 142**). Inside the scar, horizontal axe markings in a single straight line can be seen in the upper scar with a lower line visible near the base of the scar. This is reminiscent of three trees recorded along the ETL (**Plates 85-86 and 88-89**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST14 Sappa Bulga 8533-11 & 111: 25K AGD 615383 E 64134483 N

Tomingley Narromine Water Pipeline modified tree 14 (TNWP-ST14) is situated in a low floodplain salt marsh / ephemeral waterway near yellow tank, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Bimble Box (*E. populnea subsp. bimbil*) within a Box-Gum Woodland in the road reserve. The surrounding land has been ploughed and grazed. The tree is alive approximately 15 m tall and 2.6 m in trunk circumference. The trunk bears one elliptical scar oriented northeast, c. 50 to 70 cm at least in current length and c. 8 to 30 cm wide, approximately c. 83 cm from the ground (**Plate 145 - 146)**.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST15 Sappa Bulga 8533-11 & 111: 25K AGD 623925 E 6430436 N

Tomingley Narromine Water Pipeline modified tree 15 (TNWP-ST15) is situated at an elevation of 240 m AHD, 2km south from the Macquarie River, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Bimble Box (*Eucalyptus populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within a TSR between Tantitha Road and Narromine Road on the high bank of Backwater Cowal near the Macquarie River palaeochannel. The tree is alive and in good condition approximately 15 m tall and 2.45 m in trunk circumference. The trunk bears two scars. The first scar is oriented southeast, 45 to 79 cm in length and 16 to 45 cm wide, with regrowth of c. 9 to 14 cm deep with the base of the scar approximately 20 cm from the ground (**Plates 155** & **156**). No axe marks were noted.

The second scar is oriented southeast directly above the first scar, c. 80 to 115 cm in length and c. 2 to 45 cm wide, with regrowth of c. 12 cm deep (**Plate 157**). This scar is almost completely closed up. No axe marks were noted.

Both scars are assessed as Aboriginal in origin, conforming to the current DECCW criteria.

TNWP-ST16 Sappa Bulga 8533-11 & 111: 25K AGD 623929 E 6430430 N

Tomingley Narromine Water Pipeline modified tree 16 (TNWP-ST16) is situated at an elevation of 247 m AHD, 2km south from the Macquarie River, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Bimble Box (*Eucalyptus populnea subsp. bimbil*) within a Fuzzy Box / Bimble Box and River Red Gum vegetation community within a TSR between Tantitha Road and Narromine Road on the high bank of Backwater Cowal near the old Macquarie River bed. The tree is alive but fallen with a trunk circumference of 265 cm. The trunk bears one elongated scar oriented southeast, c. 370 cm at least in current length and c. 40 to 80 cm wide, with regrowth of c. 30 cm deep (**Plate 158 - 159**). Axe marks were noted on the heartwood.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TNWP-ST17 Sappa Bulga 8533-11 & 111: AGD 622169 E 6428427 N

Tomingley Narromine Water Pipeline modified tree 17 (TNWP-ST17) is situated at an elevation of 229 m AHD, 3km south from the Macquarie River, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Bimble Box (*Eucalyptus populnea subsp. bimbil*) within a Box-Gum woodland 5 m from the edge of the table drain along Dappo Road reserve. The tree is alive and in reasonable condition as the heartwood is missing. The tree is approximately 18 m tall and has a circumference of 166 cm. The trunk bears one elongated scar oriented southeast, c. 48 to 70 cm at least in current length and c. 6 to 34 cm wide, with regrowth of c. 11 cm deep and the height of the base of the scar c. 50 cm above the ground (**Plates 164 - 165**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST18 Sappa Bulga 8533-11 & 111: 25K AGD 621985 E 6427312 N

Tomingley Narromine Water Pipeline modified tree 18 (TNWP-ST18) is situated 5km south from the Macquarie River, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Red Gum (*E. dealbata*) within a Box - Gum woodland along Dappo Road reserve. The tree is alive and in good condition, is approximately 18 m tall and has a circumference of 220 cm. The trunk bears one ovoid scar oriented west, c. 16 to 85 cm at least in current length and c. 2 to 40 cm wide, with regrowth of c. 10 to 20 cm deep and the height of the base of the scar c. 40 cm above the ground (**Plate 166**). The scar is mainly closed up.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

On the opposite side of the road (outside the Study Area) are several definite modified trees not on the AHIMS database.

TNWP-ST19 Sappa Bulga 8533-11 & 111: 25K AGD 621923 E 6427311 N

Tomingley Narromine Water Pipeline possible modified tree 19 (TNWP-ST19) is situated 5km south from the Macquarie River, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Yellow Box (*E. melliodora*) within a Box - Gum woodland along Dappo Road reserve. The tree is alive and in good condition, is approximately 25 m tall. The trunk bears one elongated scar oriented northwest, 148 to 200 cm at least in current length and 60 to 106 cm wide, with regrowth of c. 7 to 23 cm deep and the height of the base of the scar 103 cm above the ground (**Plate 167**). Axe marks were noted high up in the tree.

This scar is assessed as a possible Aboriginal scar, conforming to only some of the current DECCW criteria.

TNWP-ST20 Sappa Bulga 8533-11 & 111: 25K AGD 621925 E 6426951 N

Tomingley Narromine Water Pipeline modified tree 20 (TNWP-ST20) is situated near an ephemeral drainage line within a low catchment, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The modified tree is a Grey Box (*E. microcarpa*) within a Box - Gum woodland along Dappo Road reserve at an elevation of 246 m AHD. The tree is alive and in good condition, is approximately 20 m tall with a trunk circumference of 234 cm. The trunk bears one elongated scar oriented east, 1 c. 90 to 236 cm at least in current length and c. 83 to 129 cm wide, with

regrowth of c. 22 to 23 cm deep and the height of the base of the scar c. 51 cm above the ground (**Plate 168**). Axe marks were noted on the scar.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST21 Sappa Bulga 8533-11 & 111: 25K AGD 621828 E 6426366 N

Tomingley Narromine Water Pipeline modified tree 21 (TNWP-ST21) was originally situated within a Box - Gum woodland along Dappo Road reserve in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). As the tree was under the immediate threat of being poached for firewood it was relocated to the private residence of the Narromine LALC representative Paul Brydon 'Midnight'.

The modified tree is a Grey Box (*E. microcarpa)* with a trunk circumference of 172 cm. The tree is dead and down and the scar itself has been sawn off with half the scar missing. The trunk bears one ovoid scar at least c. 84 - 160 in current length and c. 60 to 70 cm wide, with regrowth of c. 10 cm deep (**Plate 169**). Axe marks were noted on the scar, however these were post bark removal and probably as recent as one week prior to it being recorded.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST22 Sappa Bulga 8533-11 & 111: 25K AGD 621747 E 6425838 N

Tomingley Narromine Water Pipeline modified tree 22 (TNWP-ST22) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along Dappo Road reserve, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The tree is dead, is approximately 12 m tall and has a trunk circumference of 230 cm. The trunk bears one ovoid scar, c. 74 to 110 cm at least in current length and c. 32 to 60 cm wide, with regrowth of c. 10 cm deep and the height of the base of the scar c. 160 cm above the ground (**Plates 170** & **171**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST23 Sappa Bulga 8533-11 & 111: 25K AGD 621737 E 6425766 N

Tomingley Narromine Water Pipeline modified tree 23 (TNWP-ST23) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along Dappo Road reserve, in the Parish of Narromine, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The tree is alive and in good condition considering it is probably over 400 years old. The tree is approximately 18 m tall and has a trunk circumference of 463 cm and is situated at an elevation of 252 m. The trunk bears two scars, with one above the other oriented southeast. However, the second scar was determined as being a possible Aboriginal scar and as such no further recording was taken. The first scar is c. 166 to 226 cm at least in current length and c. 33 cm wide, with regrowth of c. 20 cm deep and the height of the base of the scar c. 88 cm above the ground (**Plate 172** & **173**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a large coolamon or a canoe.

TNWP-ST24 Sappa Bulga 8533-11 & 111: 25K AGD 619467 E 6424356 N

Tomingley Narromine Water Pipeline modified tree 24 (TNWP-ST24) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along the left hand side of Pine Dean Road, c. 100 m from Wallaby Creek in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The tree is alive and in good condition considering it is probably over 400 years old. The tree is approximately 30 m tall and has a trunk circumference of 490 cm and is situated at an elevation of 264 m AHD. The trunk bears one elongated scar, c. 220 to 240 cm at least in current length and c. 50 to 90 cm wide, with regrowth of c. 15 cm deep. The scar does extend to the ground now, however possibly did not when the bark was originally removed (**Plate 179** & **180**).

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TNWP-ST25 Sappa Bulga 8533-11 & 111: 25K AGD 619386 E 6424375 N

Tomingley Narromine Water Pipeline possible modified tree 25 (TNWP-ST25) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along the left hand side of Pine Dean Road, c. 400 m from Wallaby Creek in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW. The tree is situated within a creek bank floodplain landform that would become inundated during times of flood (**Figure 14**).

The tree is approximately 20 m tall and has a trunk circumference of 380 cm. The tree is alive and has a scar high up the trunk (**Plate 182**). The trunk bears one elongated scar oriented northeast, c. 200 cm at least in current length and c. 50 to 70 cm wide, with regrowth of c. 20 cm deep. The base of the scar lies c. 5 m from the base of the ground.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TNWP-ST26 Sappa Bulga 8533-11 & 111: 25K AGD 618563 E 6424489 N

Tomingley Narromine Water Pipeline modified tree 26 (TNWP-ST26) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along the left hand side of Pine Dean Road, c. 20 m from Wallaby Creek in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW. The tree is situated within a creek bank floodplain landform that would become inundated during times of flood (**Figure 14**).

The tree is alive and in good condition and has an epicormal shoot extending from the base of the scar (**Plate 183** & **184**). The tree is approximately 15 m tall and has a trunk circumference of 250 cm. The trunk bears one elongated scar oriented south, 164 to 200 cm at least in current length and 56 cm wide, with regrowth of c. 16 to 19 cm deep. The scar is several metres up the tree and was either a marker scar and made when the tree was that height or the tree was scarred when it was much smaller, although the former is considered a more likely explanation.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST27 Sappa Bulga 8533-11 & 111: 25K GDA 617840 E 6424831 N

Tomingley Narromine Water Pipeline modified tree 27 (TNWP-ST27) is a Grey Box (*E. microcarpa*) within a Box - Gum woodland along the left hand side of Pine Dean Road, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The tree is situated within a creek bank floodplain landform c. 30 m from an unnamed ephemeral drainage line (a tributary of Backwater Cowal) that would become inundated during times of flood. It is approximately 15 m from the road edge line adjacent to a private property fence line. The tree over 300 years of age and is approximately 30 m tall and has a trunk circumference of c. 550 cm. The trunk bears one elongated scar oriented south, c. 123 to 150 cm at least in current length and c. 21 to 40 cm wide, with regrowth of c. 15 cm deep (**Plate 186** & **187**). The base of the scar is c. 42 cm from the base of the ground. No axe marks were noted on the tree

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST28 Sappa Bulga 8533-11 & 111: 25K GDA 617250 E 6424944 N

Tomingley Narromine Water Pipeline modified tree 28 (TNWP-ST28) is a Bimble Box (*Eucalyptus populnea subsp. bimbil*) within a Box - Gum woodland along the left hand side of Pine Dean Road close to the highway junction, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). The tree is situated within a creek bank floodplain landform c. 400 m from an unnamed ephemeral drainage line (a tributary of Backwater Cowal) that would become inundated during times of flood.

It is approximately 18 m from the road edge line and 3 m from adjacent private property fence line. The tree over 300 years of age and is approximately 30 m tall and has a trunk circumference of 550 cm. The trunk bears one elongated scar oriented south, c. 120 to 150 cm at least in current length and c. 20 to 32 cm wide, with regrowth of c. 70 cm deep. The base of the scar is c. 25 cm from the base of the ground (**Plate 188**). No axe marks were noted on the tree

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST29 Sappa Bulga 8533-11 & 111: 25K AGD 616091 E 6422297 N

Tomingley Narromine Water Pipeline modified tree 29 (TNWP-ST29) is a Grey Box (*E. microcarpa*) within a Box - Gum woodland along the left hand side of the highway between Narromine and Tomingley, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). The tree is situated within a creek bank floodplain landform that would become inundated during times of flood at an elevation of 260 m AHD.

This modified tree is over 300 years of age and has a trunk circumference of 200 cm. The tree is dead, has no bark and half of the scar has been broken off when the top part of the tree has fallen (during a storm?) The trunk bears one elongated scar oriented southwest, 300 cm at least in current length and 50 cm wide, with regrowth of c.30 cm deep (**Plates 189** to **192**) The base of the scar is c. 120 cm from the base of the ground. No axe marks were noted on the tree, however its degraded nature and inaccessibility due to wilgas growing around the base made it difficult to assess.

The tree is in the approximate location of Aboriginal site DECCW # 36-3-0013, a series of carved trees as described in section 4.4. However, given the historical nature of its original location recording, OzArk has not being able to find further information to positively identify whether this scarred tree is part of the previously recorded Aboriginal site #35-3-0013.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a canoe.

TNWP-ST30 Sappa Bulga 8533-11 & 111: 25K GDA 616357 E 6424080 N

Tomingley Narromine Water Pipeline possible modified tree 30 (TNWP-ST30) is a Grey Box (*E. microcarpa)* within a Box - Gum woodland along the left hand side of the highway road reserve c. 10km south of Narromine. The tree is situated c. 10 m from the road edgeline and 10 m from the sign "Narwonah Road", in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). The tree is situated within a creek bank floodplain landform that would become inundated during times of flood.

This old growth tree is approximately 25 m tall and has a trunk circumference of 480 cm (**Plate 194**). The trunk bears one elongated scar oriented northeast, 110 to 135 cm at least in current length and 20 to 37 cm wide, with regrowth of c. 42 cm deep. The scar is very deep and mostly closed over and it is difficult to determine the integrity of the heartwood.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST31 Sappa Bulga 8533-11 & 111: 25K AGD 615692 E 6417807 N

Tomingley Narromine Water Pipeline modified tree 31 (TNWP-ST31) is a Grey Box (*E. microcarpa*) within a Box - Gum woodland along the left hand side of the highway between Narromine and Tomingley, in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**).

The tree is situated within a creek bank floodplain landform c. 100 m from Yellow Creek that would become inundated during times of flood at an elevation of 266 m AHD. The tree over 300 years of age and is approximately 25 m tall and has a trunk circumference of 420 cm. The tree is alive and has a scar high up the trunk. The trunk bears one ovoid scar oriented southwest, 45 cm at least in current length and c. 30 cm wide, with regrowth of c.10 cm deep (**Plate 195**). The base of the scar is c. 220 cm from the base of the ground. No axe marks were noted on the tree.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST32 Sappa Bulga 8533-11 & 111: 25K AGD 615799 E 6419055 N

Tomingley Narromine Water Pipeline possible modified tree 32 (TNWP-ST32) is a Grey Box (*E. microcarpa)* within a Grey Box - Mugga Ironbark woodland along the left hand side of the highway road reserve c. 8 m from the road edgeline. The tree is c. 15km south of Narromine in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). The tree is situated within a creek bank floodplain landform that would become inundated during times of flood at an elevation of 260 m AHD.

This tree is alive and c. 18 m tall and has a trunk circumference of 232 cm (**Plate 196** & **197**). The trunk bears one ovoid scar oriented northeast, 45 to 71 cm at least in current length and 20 cm wide, with regrowth of c. 12 cm deep. The base of the scar lies c. 30 cm above ground level and no axe marks were noted. A large epicormal growth extends from the base of the scar.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST33 Sappa Bulga 8533-11 & 111: 25K AGD 615795 E 6418948 N

Tomingley Narromine Water Pipeline modified tree 33 (TNWP-ST33) is a Grey Box (*E. microcarpa)* within a Grey Box - Mugga Ironbark woodland along the left hand side of the highway road reserve. The tree is c. 16km south of Narromine in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW (**Figure 14**). The tree is situated within a creek bank floodplain landform (c. 50 m from a Yellow Creek) that would become inundated during times of flood at an elevation of 260 m AHD

This tree is approximately 12 m tall and has a trunk circumference of 247 cm (**Plate 198**). The trunk bears one ovoid scar oriented east, c. 35 cm at least in current length and c. 18 cm wide, with regrowth of c. 23 cm deep. The height of the scar above ground level is c. 70 cm. The tree is dead and a stump. The heartwood is absent and the scar is visible from the opposite side of the tree.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a coolamon.

TNWP-ST34 Sappa Bulga 8533-11 & 111: 25K AGD 615792 E 6418921 N

Tomingley Narromine Water Pipeline modified tree 34 (TNWP-ST34) is a Grey Box (*E. microcarpa)* within a Grey Box - Mugga Ironbark woodland along the left hand side of the highway road reserve near the adjacent private property fence line (**Figure 14**). The tree is c. 16km south of Narromine in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW. The tree is situated within a creek bank floodplain landform (c. 50 m from a Yellow Creek) that would become inundated during times of flood at an elevation of 260 m AHD.

This tree is dead c.18 m tall and has a trunk circumference of 343 cm (**Plate 199**). The trunk bears one ovoid scar oriented east, c. 18 to 21 cm at least in current length and c. 16 - 66 cm wide, with regrowth of c. 15 to 21 cm deep. The height of the scar above ground level is c. 20 cm.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST35 Sappa Bulga 8533-11 & 111: 25K AGD 615793 E 6418866 N

Tomingley Narromine Water Pipeline modified tree 35 (TNWP-ST35) is a Grey Box (*E. microcarpa)* within a Grey Box - Mugga Ironbark woodland along the left hand side of the highway road reserve (**Figure 14**). The tree is c. 16km south of Narromine in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW. The tree is situated on a hill slope on gravels and alluvium approximately 400 m from a tributary of Yellow Creek.

This tree is approximately 18 m tall and has a trunk circumference of 276 cm (**Plates 201** & **202**). The trunk bears one elongated scar oriented southwest, c. 80 to 105 cm at least in current length and c. 16 to 57 cm wide, with regrowth of c. 30 cm deep. The base of the scar is covered with dirt and it is unknown is the scar extends to the ground.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria.

TNWP-ST36 Sappa Bulga 8533-11 & 111: 25K GDA 615676 E 6416721 N

Tomingley Narromine Water Pipeline modified tree 36 (TNWP-ST36) is a Grey Box (*E. microcarpa)* within a Grey Box - Mugga Ironbark woodland along the left hand side of the highway road reserve c. 8 m from the road edge line. The tree is c. 17km south of Narromine in the Parish of Frost, County of Narromine and Shire of Timbrebongie, NSW. The tree is situated on a hill slope on gravels and alluvium approximately 400 m from a tributary of Yellow Creek (**Figure 14**).

This tree is approximately 15 m tall and has a trunk circumference of 300 cm (**Plates 203** & **204**). The trunk bears one elongated scar oriented northeast, c. 43 to 74 cm at least in current length and c. 6 to 23 cm wide, with regrowth of c. 18 cm deep. The heartwood has is absent, but remaining from and structure.

This scar is assessed as an Aboriginal scar, conforming to the current DECCW criteria. Its size and shape suggest the removed bark may have been used as a Coolamon.

Possible Aboriginal camping area

The corner of land between Tomingley West Rd, Gundong Creek and the Narromine Road has, amongst others, been identified as a possible camping spot, for Aboriginal families in the late 1800's and early 1900's (**Figure 8, Site 1**). Scarred trees have been recorded in this area, as they have in most areas of significant remnant bushland over the local area.

No actual evidence of camping was found through this area during survey; however, the ground cover / leaf litter provided little ground surface visibility. Scarred tree TNWP-ST1 is recorded in this area and several other screed trees not within the impact footprint, are nearby.

7. DISCUSSION

7.1 ABORIGINAL SITE DISTRIBUTION

The landform of the three study areas is flat and relatively low-lying. Creeks of the area tend to be temporary and from the southern portions of the Project Site, flow west into the Bogan catchment and closer to Narromine begin to flow north / northeast into the Macquarie catchment. Elevations do not vary greatly from 260 m Australian Height Datum (AHD).

Overlaying site locations with the general landform unit divisions across the broader region shows most open sites are associated with the alluvial valley floors (close to a drainage features) and the gentle toe slopes of the adjacent flat to undulating plains. They are generally located close to drainage lines and, where distant to water, are more likely to be smaller camp sites or one-off activity sites.

The sites recorded during the survey, and shown on **Figures 11** to **14**, show that the pattern of site type distribution is consistent with the predictive model outlined in Section 4.5. The largest open site (TNWP-OS1 with PAD), which displays a diversity of raw material and artefact types, is located close to the Macquarie River palaeochannel, while smaller sites (TGP-OS1 and OS2) are located adjacent to the area thought to have been a spring in prehistory. The Aboriginal modified trees are also more prevalent in locations close to drainage features, with between 60% and 63% recorded within 100 m of drainage features or water sources.

The lack of open site recordings in the Mine Site Study Area close to more permanent water sources, such as the northern portion of Gundong Creek may be the result of the fact that the majority of this creek line within the Mine Site Study Area is in fact a post-contact period channel. It is considered likely that the northern portion of this creek may be more original as scarred trees are certainly clustered in that area.

The high frequency of scarred trees was somewhat unexpected, comprising 90% of recorded sites (against 58% of previously recorded sites within the local area). This predominance is thought to reflect the practise of maintaining remnant, almost unmodified, road side vegetation corridors and wind breaks along property fence lines. The frequency of modified trees (scarred, carved, boundary markers and women's birthing trees) indicates both significant use of the practice of scarring, as well as providing evidence of a densely occupied area, at least in the last 500 years.

As noted previously, although the Aboriginal heritage resource as recorded by this assessment is considered to be an accurate indication of the nature and location of sites within the Project Site, it cannot be considered to be exhaustive and must be accepted that there may be further isolated artefacts present, particularly in areas where there was very poor ground surface visibility.

7.2 SIGNIFICANT ABORIGINAL SITES

7.2.1 TGP-ST7 – The Carved Tree

Shown in **Plates 45**, **46** & **47**, this scar and carving on this tree are certainly not the most definitive examples of this site type. The scar has regrown in a very irregular fashion and the preservation of the carving is extremely poor. The upper portions are interpreted as bearing intact portions of the heartwood with signs of stone axe diagonal cuts present, possibly over which the margins of the scar have regrown. The lower scar has seen the exfoliation of the surface of the heartwood and the diagonal axe cuts in this area appear to be made with a steel axe and hence are likely to be more recent. It has been postulated that these marks may be attempts at maintenance of the scar in the post-contact era. Others have surmised that the ring barker of the tree may have been Aboriginal (as many were) and that is why the ringbarking stops once the carved portion of the trunk is reached

Several texts dedicated to carved trees (also referred to as dendroglyphs) have been prepared over the past century, including Etheridge (1918), Black (1941) and Bell (1974) (although Bell was not able to be consulted during the preparation of this report), and these collectively provide a significant database of carved tree locations and uses. In terms of types, Black divided carved trees into two primary types - teletoglyphs and taphoglyphs. The former were frequently less deeply incised and often bore animal images and were found in the vicinity of bora grounds while taphoglyphs were commonly deeply incised with curvilinear motifs and marked the burials of 'doctors, head men or dead heroes' (Black 1941: 17-18). Carved trees

are common only in Wiradjuri and Kamilaroi territories although they have been found slightly outside these territories.

An earlier researcher interested in carved trees was Milne (1894), as summarised in Etheridge (1918: 6). He recorded that some carved trees were related to graves while others (rarely because evidence was sparse) were related to significant tribal events with the last groups being related to bora grounds. Etheridge concluded that distinguishing from visual observation trees of the first two types was really not possible and that the evidence he had collected only allowed for this in one case (Etheridge 1918: 7).

In relation to the carvings themselves, Etheridge recorded that around 2/3 of the carved glyphs were made with steel / iron tools and hence only around 1/3 made with the traditional stone axes (Etheridge 1918: 14). Based on that comment, made around 100 years ago, it would seem unlikely that many stone axe cut carved tees would be lucky enough to still remain extant.

A summary of the discussion in Black (1941: 17-28, based on Milne's original data) regarding the relationship of burials to taphoglyphs, sees the norm as being a burial surrounded by three carved trees (most commonly three but sometimes only one or up to seven) which face towards the burial which is usually in the centre of the triangle formed by the location of the trees. From the distances noted, it would be unlikely for the burial to be any greater than 50 m from the carved trees and most likely closer than this. It is further noted that most burial places were in sandy or soft ground and close to a creek or river (Black 1941: 28).

The location of TGP-ST7 tree has no specific reference to apparent water courses or areas of softer soil where burials may be more likely to be present. Anthony Wilson, a traditional owner who was on the survey team, has a great (great?) grandfather who was buried in this way and hence the practice was obviously used through until (and slightly beyond) contact era. The Aboriginal community participants in the survey team also noted the potential for dead body to be placed in a large hollow in a tree, and ST7 does contain a high large hollow.

The possibility that TGP-ST7 may be associated with a burial cannot be confirmed or discounted with the information available to date and management of the area in terms of the impacts of the project will necessarily take a potential burial into take this into account.

7.2.2 Other Marked Trees – TWNP-ST13 and PHTETL-ST3

A brief note on the other type of marks on two recorded trees is also relevant. Although only two were recorded within the study areas, a further two were noted close to the easement of the PHTETL Study Area and in association with PHTETL-ST3 (**Plates 85** to **89** and **139** to **141**). These trees all have a double line of axe marks within a scar, and it is possible these were some kind of territory markers either Aboriginal or possibly relating to the early contact era. Further research into this scar type has revealed that shallow double incised lines around a tree trunk have been recorded as evidence of a specific ring-barking practice known as "collar-cuts", whereby a section of bark is cut between two parallel lines that encircle the trunk. An illustrated example (Long 2003: 27) shows lines not dissimilar to those recorded on TWNP-ST13 and PHTETL-ST3, so an interpretation of these trees as evidence of a specific ringbarking practice cannot be ruled out. The trees have in this instance survived the ring-barking, possibly with the bark beginning to regrow over the parallel cuts.

7.2.3 TWNP- OS1 with PAD on "Woodlands", near Narromine

The landform upon which this site is located appears elevated and comprised of red sandy soils. It was consequently considered possible that this may comprise a Quaternary terrace capped by an aeolian sand sheet. This area had been cleared although very large remnant trees are present and the terrace had been repeatedly cultivated for decades. Aboriginal artefacts were found on the eroding edge of this landform closest to the palaeochannel. The uniform appearance of the sands suggested that the crest of the terrace may have been an aeolian, source bordering sand sheet, that may have been active when the climate was drier during the last glacial. This possibility had three important implications for Aboriginal archaeology:

1. Sand accumulation on the terrace may have been sufficient to bury older Aboriginal sites.
2. Sand bodies of this nature are known to be preferred locations for human burials.
3. Despite the intense cultivation Aboriginal material below a depth of 25 to 30 cm, if present, will have only been subject to natural disturbance processes and it was considered possible that a partly stratified site could occur in this area.

Consequently, test excavations were undertaken on 1 and 2 February 2011 over six excavation pits confined to the area of TNWP-OS1 with PAD that will be impacted by the TNWP.

Major findings of the archaeological test programme were:

- The lithic assemblage of the excavation consists of a total of 121 artefacts. One hammer stone was recorded, along with several cores.
- No archaeological stratification was noted in any of the excavation pits.
- Artefact densities ranged from medium to very low across the excavation area with maximum densities of 27.2 artefacts per cubic metre of excavated material.
- The excavation assemblage is dominated by quartz with 71.1% of all excavated artefacts of this material. The other dominant raw material used was chert with 14% of the artefacts being from this material. The remaining 14.9% of material came from a mix of silcrete, rhyolite, mudstone, and other fine grained siliceous materials.
- In most cases, the artefacts recorded in the excavations came from spit 1 (0–20cm) with a few artefacts from spits 2 and 3. Therefore it is evident that most of the material was concentrated close to the surface.
- None of the test excavation squares excavated at site TWNP-OS1 displayed evidence of a complex site features. No features were recorded from the excavations.
- The test excavation programme has established that site NTWP-OS1 with PAD has, at its eastern margins, a low artefact density, shallow deposits and a high likelihood of prior disturbance.
- As such, in the area where the TGP water pipeline is proposed to be located, the site possesses low scientific significance and the findings demonstrate that further archaeological investigation is unwarranted.

- Discussions on site with the representatives of the Registered Stakeholders who participated in the excavations established their agreement with these findings and with the recommendation that no further archaeological investigation of the site was warranted.

The test excavations did establish that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between the test excavation pits). These artefacts are likely to be in the top 20cm of soil. In light of this, the some management recommendations have been made in relation to the construction of the TNWP, and these are contained in the Recommendations Section of both this report and in the full test excavation report (OzArk 2011a), which is appended to this document (**Appendix 5**).

7.3 ABORIGINAL SITE ASSESSMENT

The appropriate management of cultural heritage items is usually determined on the basis of their assessed significance, as well as the likely impacts of any proposed developments. Scientific, cultural and public significance are identified as baseline elements of significance assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

7.3.1 Cultural Significance

This area of assessment concerns the importance of a site or features to the relevant cultural group - in this case the Aboriginal community. Aspects of cultural significance include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of significance may not be in accord with interpretations made by the archaeologist, i.e.. a site may have low scientific significance but high Aboriginal significance, or *vice versa*.

The significance of the archaeological sites located within the Project Site was addressed during the survey with the community representatives and in subsequent meetings.

7.3.2 Scientific Significance

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of significance relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether or not a site can contribute to current research also involves defining 'research potential' and 'representativeness'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Open camp sites, isolated finds and culturally modified trees were identified during the current study. The significance of these is assessed on the basis of the known local context of these

site types (i.e. are there many, some or no such features known locally). In general terms, any Aboriginal object has the ability to either add to our knowledge about an area's Aboriginal history, comment on the technological developments of a people and to act as a marker for further intact subsurface deposits.

It is impossible to determine the significance of PAD's as there is limited or no site material or soil data to assess. Consequently, if a PAD with a suitable buffer cannot be avoided test excavation is recommended for such areas to investigate the presence, extent, nature and integrity of any possible site material such that significance can be assessed and appropriate management recommendations devised.

In general terms, culturally modified trees (scarred) do not tend to increase our understanding of the area's prehistory, except in situations where past land-use practices have resulted in the total clearance of trees. In these circumstances, scarred trees become more significant due to the overall degradation of this resource (Jo McDonald CHM 1998: 50). Modified trees also increase in scientific significance when they remain extant in stands where a great many exist in the one area or in relationship with other sites. Carved trees are very rare these days and because of their potential association with burials, these site types are often accorded high significance.

7.3.3 Public Significance

Sites that have public significance do so because they can educate people about the past. By reducing ignorance about why sites are important to the Aboriginal and scientific community, important sites can be protected from ignorant or inadvertent destruction. Educating the public to understand the need for site preservation should increase the likelihood of maintaining an archaeological resource into the future. For a site to have high public significance it should contain easily identifiable and interpretable elements, and be relatively easily accessed. Although isolated finds could be appreciated due to their obvious visual manifestation, their general significance is reduced by their small size and unremarkable characteristics (making lithic artefacts difficult to distinguish from natural rock). Unless an artefact scatter is in some way outstanding (either in terms of spatial size or artefact density) this site type is usually assessed as having low public significance.

Although modified trees are easily appreciated due to their obvious visual manifestation, their general significance is reduced by their often common occurrence. Unless a modified tree is in some way outstanding (i.e. located in an area where such site types are rare, an unusual scar shape, carved tree, birthing tree or toe hold tree; an unusual species to carry scarring or in a stand of many scarred trees), and depending on the condition of the tree, this site type is usually assessed as having moderate-low public significance

7.4 ASSESSED SIGNIFICANCE OF THE RECORDED ABORIGINAL SITES

7.4.1 Cultural

Conversations and meetings held with the representatives of the Narromine and Peak Hill LALC, (see **Appendix 3**) determined that all site types are culturally significant to the Aboriginal community because they provide physical evidence of Aboriginal occupation of the local area.

Of particular importance is the carved tree recorded in the Mine Site Study Area, which the Aboriginal community believe is likely to relate to a burial site. Carved trees are of extremely **high cultural significance** to the local Aboriginal traditional owners.

Letters / correspondence from the Registered Stakeholders detailing their assessment of the recorded sites will be presented in **Appendix 2** to this report if / when they are received.

7.4.2 Scientific

The scientific assessment of sites, as described above, revolves around the known local context of the site type (i.e. are there many, some or no such features known locally). Looking within a 20 x 30km zone centred on Tomingley, there are 26 modified trees recorded on the DECCW AHIMS database making this the most common site type in the vicinity of the Project Site. As a site type scarred trees have a relatively low potential to increase our understanding of the area's prehistory. However what is somewhat unusual is the high number of scarred trees recorded in close proximity to each other.

Modified Trees

Of the 54 scarred trees recorded, 43 of these were assessed as being of definite Aboriginal origin, with a further nine assessed as being of possible Aboriginal derivation. The overall high frequency of this site type in the local area and region combined with their overall low potential as a site type to increase our understanding of the area's prehistory are factors thought to lower the significance of scarred trees in the area. However, their concentration along the road corridor of the Newell Highway between Peak Hill and Narromine, and the relationship of the physical site to oral history pulls these sites to a level of greater scientific significance. Considering the number of scarred tees in the road corridor it is astounding to think how many must have been present before European clearing. The combination of all these aspects interact to give these trees collectively **moderate scientific significance** (for those of definitive Aboriginal origin) and **low scientific significance** for those thought of as being of only possible Aboriginal origin.

Previously unrecorded carved trees are a rare site type to be found *in situ* in the landscape as they are an overall rare site type and most have been recorded in the past because they are so notable. As documented, carved tree TGP-ST7 is not the most outstanding example of its type, and its acceptance as being a carved tree still requires determination. If it is a carved tree, it opens the potential for an associated burial. Without confirmation of the carving, the likelihood of a burial association remains unknown, hence the significance of this tree is more challenging to determine, however, it is preliminarily afforded **high scientific significance** based on rarity and associated burial potential.

Open Artefact Sites

All artefacts recorded are assessed as being Aboriginal in origin. The raw materials, artefact density, site size and artefact types are all typical of previously recorded sites in the vicinity. The likelihood of there being intact sub-surface deposits is considered relatively low for sites TGP-OS1 and 2 due to the minimal 'A' horizon present. Due to this site type being well represented regionally and containing non exceptional material, these sites are afforded **low-moderate scientific significance**.

The likelihood of there being sub-surface deposits, some portions of which may be intact, is considered high in the case of site TNWP-OS1 with PAD, and the possibility of burials being

present cannot be ruled out. The understanding that surface manifestations of this type of site are not necessarily a true reflection of the nature, extent and integrity of potential deposits, means that an assessment of the significance of this site cannot be made. Preliminary assessments indicate this site may be of **moderate-high scientific significance**, but this would need to be confirmed through sub-surface testing.

7.4.3 Public

All sites recorded are assessed as being of **low public significance** as they are hard to locate and not on property that is accessible to the general public, as well comprising evidence that would be challenging for the lay person to identify.

The only exceptions to this are TGP-ST7, the carved tree and TWNP-OS1 with PAD, which have **moderate public significance.**

7.5 LIKELY IMPACTS OF THE PROJECT

7.5.1 Mine Site Study Area

The Mine Site Study Area would include the following primary components: four open cut pits (extraction areas), three waste rock emplacement areas, several sediment basins and surface water management structures, a series of hardstand areas, including haul roads, access roads, a facilities area and a stockpiling and crushing area. These are all contained within the Mine Site Boundary delineated by the red line on **Figure 11**. Only sites within these specific locations would be impacted.

Review of **Figure 11** shows that three (3) recorded Aboriginal sites are within the impact footprint of the Mine Site Study Area, namely:

- Open Site TGP-OS2 - to be impacted by the Main Site Access Road;
- Carved tree TGP-ST7 - to be impacted by Wyoming One Open Cut; and
- Possible scarred tree TGP-ST10 - to be impacted by Waste Rock Emplacement 3.

TGP-OS1 should be managed through mitigation measures to avoid impact. Scarred trees TGP-ST8 and 9 are adjacent to the fence line of the Newell highway, to the east of Wyoming One Open Cut, however, close to a proposed visual amenity bund to be constructed between Wyoming One Open Cut and the Newell Highway. Mitigation measures should be undertaken to protect these two trees from inadvertent damage as they are close to the impact footprint.

7.5.2 PHTETL Study Area

Although PHTETL-ST1 and PHTETL-ST2 are both within the 30m impact footprint of the PHTETL Study Area, Alkane has noted that these would be avoided through the design and alignment of the electricity transmission line. If the electricity transmission line is shifted in areas not currently assessed, further survey will be required of the any modified impact footprint.

PHTETL–ST3 and the two associated trees are outside the impact footprint and would not be impacted by the TGP.

7.5.3 TNWP Study Area

No mature trees would be removed as part of this component of the TGP and there would be no impact to the recorded scarred tree sites within the corridor. The pipeline can be bent around sites to avoid them, although mitigation would be required to ensure no inadvertent impacts occur.

Open site TNWP-OS1 with PAD, on the "Woodlands" property, is located within the impact footprint for the water pipeline and will require management to mitigate the water pipe trench impacts. Test excavations discussed in Section 6 have provided the necessary archaeological information about this site to guide its management.

7.6 MANAGEMENT OPTIONS

7.6.1 General Management Options

Appropriate management of cultural heritage items is primarily determined on the basis of their assessed significance, as well as the likely impacts of the proposed development. Section 7.3 describes the significance of the recorded sites from a cultural, scientific and public-interest perspective, while Section 7.4 lists the sites that would be impacted by the TGP. The following management options are based on general principles, in terms of best practice and desired outcomes. Specific management options for the identified Aboriginal sites based on known site impacts are presented in Section 7.5.2.

Avoid impact to sites by altering project design. This is the optimal way to manage potential impacts and obviously results in a conservation outcome. If this can be done, then a suitable curtilage around sites must be determined so as to ensure their protection both during the short term construction phase of development and in the long term use of the area. If TGP designs are altered, care must be taken to ensure that sites previously assessed as not impacted, remain so. This may be facilitated where necessary through the fencing off of sites during construction so as to minimise inadvertent, short term impacts.

If impact is unavoidable the Section 90 AHIP[8] permits that are required for impacts to Aboriginal heritage under the NP&W Act, are not necessary as the TGP is being assessed under Part 3A of the EP&A Act. This notwithstanding, the spirit of site protection and management in the face of impacts remains the same. In place of a permit under the NPW Act, a Statement of Commitments (SoC) in terms of heritage management is prepared. This SoC forms the basis for the Minister's approval which would usually contain one or more conditions, including a requirement for the preparation of a Cultural Heritage Management Plan (CHMP), with which Alkane would be required to operate in accordance with. These conditions include similar checks and balances as required by the CHMP process, such as test excavation programmes or site destruction mitigation development etc., however, without the need to obtain permits.

The CHMP will include measures for site conservation, as well as detailing methods for the management of sites to be impacted. The management will depend on many factors including the assessed significance of the sites. Sites of moderate to high significance and/or potential may require either test or salvage excavation, or more detailed recording, as part of the CHMP. Sites of low significance may be removed / destroyed with no further archaeological

[8] Aboriginal Heritage Impact Permit

assessment being required, or with an approved salvage / monitoring programme. The local Aboriginal communities may wish to collect or relocate artefacts, whether temporarily or permanently, and such issues are also required to be covered off in the CHMP.

Evidence of adherence to the DECCW 2005 *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* is required for Part 3A projects. In reference to consultation, these guidelines then relate back to the DECCW *Interim Community Consultation Requirements* (ICCR's) as a guide as to how the consultation should be undertaken. The CHMP is to be developed in consultation with DECCW and the Aboriginal community stakeholders for the Project.

7.6.2 Proposed Management of the Aboriginal Sites within the Project Site

7.6.2.1 General

As documented in Section 7.4, four (4) sites are to be directly impacted by the TGP. These sites comprise:

- one (1) open site;
- one open site with PAD;
- one (1) carved tree; and
- one (1) scarred tree.

Discussion with registered Aboriginal community stakeholders regarding the mitigation and management of these sites has occurred during the fieldwork sessions and community meetings held since 2009, with the management proposed being developed as a result of this dialogue. As noted above, management of these sites will need to be incorporated into a CHMP for the TGP and the management measures described below should form the basis of the site specific management component of this document.

It may also be necessary to use mitigative measures during the construction phase of components of the TGP to ensure that sites in proximity to works are not inadvertently damaged. Sites that these are relevant to are discussed at the close of each section in the following review of the three major project components.

7.6.3 Mine Site

Site TGP-OS2 may be impacted by the proposed Main Site Access Road and requires specific management. Discussions with the local Aboriginal community and DECCW have generated a series of management measures that should enable the TGP to proceed without physical impact to this site.

- Geofabric, followed by sand or gravel should be laid over the proposed Main Site Access Road to build up the ground surface and to protect deposits of TGP-OS2 below. This will ensure that the road will not physically impact the site and artefacts that comprise it.
- Rather than fencing this track, the local Aboriginal community prefer hand planting native trees and shrubs alongside the access road as a preventative

measure against vehicles going off the track and inadvertently damaging artefacts of site TGP-OS2.

Site TGP-ST7 is the carved tree located within the footprint of the Wyoming One Open Cut. Alkane considered reducing the size of this open cut to exclude the location of TGP-ST7, however, as this would reduce access to the resource to the extent that the pit would not be viable this is unfortunately not feasible. Due to the high significance of this site to the local community and beyond, and because the interpretation of this tree as a burial tree cannot be ruled out, the following measures are recommended.

- With agreement of the Traditional Owners, it would be appropriate if the outer bark of the tree could be peeled off by a qualified arborist so as to determine whether or not evidence of carving is present, hence making a more accurate determination of whether the marks on the tree relate to carving, or are a combination of ringbarking marks and natural erosions into the heartwood.
- If the presence of carving can be more accurately determined, then the potential presence of burials can also be either be elevated or reduced accordingly.

Should the carving appear to have been a likely feature of the tree, the following management would apply.

- The opinion of a suitably qualified Ground Penetrating Radar (GPR) technician or geomorphologist, with appropriate experience in remote sensing technology, should be sought to make a decision as to whether GPR is likely to be effective in the identification of a burial within a c. 50 m radius of the tree (effectiveness is dependent on soil types, saturation, etc.). As research indicates the carving on the tree will be facing towards the burial if it is present, it is considered that a 180º sweep of the GPR should be adequate coverage, although a larger area may be assessed if desired.
- If GPR is employed and a positive result is forthcoming (re: the likelihood of a human burial), further community consultation should be undertaken to inform all stakeholders of this result and then the following procedures should be employed.
  - Formal archaeological excavation for human remains should be completed over the area suspected of containing the burial for the exhumation of the remains. Notification of the NSW Police would be required and a formal determination made of the age of the remains to ensure they do not date to the last 100 years.
  - The remains should then be managed in accordance with the wishes of the Aboriginal community. This is likely to require ceremony and reburial at a nominated location.
- If GPR is not considered an effective tool for the identification of a burial location, or if the GPR results indicate no specific location as producing a likely signature for a burial, then the following ground surface disturbing works should be undertaken to physically determine the presence or not of human remains.
  - A grader should be used to strip off layers of soil, 5 cm at a time, within a 50 m radius of TGP-ST7. This should be undertaken in the presence of Aboriginal community representatives and/or an archaeologist who can inspect each pass of the grader for any evidence of human remains or

other archaeological material. Sieves may be used to assess windrowed soil should there be concern that bone may be present within the removed deposits.

- Once an area has been assessed in this manner, down to deposits deemed to be too deep to contain an Indigenous burial, then the area can be considered as clear of human remains.

- Once the issue of human remains and an inhumation[9] has been settled, then focus can shift to the removal of the tree. The following techniques may be the most appropriate, but would require further consultation and input at the time of the development of an AHMP:
  - The exact method for the removal of this tree should be discussed by Alkane, the service provider for the tree removal, the Aboriginal community representatives and the archaeologist in a pre- tree removal meeting.
  - The likely methods may be to first use a cherry picker to assess the large hollow high up in the tree to ensure that no burial present. (Although unlikely, Aboriginal community representatives did note that this was occasionally a location in which a burial may be placed.)
  - Once sure that no burials are present, the upper branches can then be removed by an appropriately qualified operator.
  - Once the trunk is shortened to an acceptable size, the tree may then be chain sawed at the base below the height of the scar and the final trunk portion transported to the location chosen by the Aboriginal community.

Should the carving appear to have been to have not been a likely feature of the tree, the following management would apply.

- A determination be made with community representatives as to the likelihood of it being a scarred tree;
- If it is a scarred tree then it would need to managed as per other scarred trees within the project area that are to be impacted (ST10);
- If is not thought to be a scarred tree and carving has been discounted, then no further management will apply.

Site TGP-ST10 is a possible scarred tree located within the footprint of Waste Rock Emplacement 3. As TGP-ST10 cannot be avoided, management for the removal of this tree would be required. Depending on the wishes of the Aboriginal community, the scarred portion of this tree may be removed to a keeping place to be determined

Site TGP-OS1 would not be directly impacted by the TGP and could be managed by fencing off the northern gate area onto the Main Site Access Road. This very small eroded site is located west of this gate and if a temporary fence is erected while the access track is being constructed, it should ensure that no construction vehicles access this area.

Sites TGP-ST8 and 9 are scarred trees close to the Newell Highway and in proximity of a proposed visual amenity bund to be constructed between Wyoming One Open Cut and the

[9] Inhumation is defined as: the ritual placing of a corpse in a grave.

Newell Highway. To ensure these trees are not damaged by works in the area, they should be fenced off around the drip line for the construction period.

7.6.3.1 Peak Hill Tomingley Electricity Transmission Line

As this component of the TGP is the construction of an electricity transmission line, there is potential for the avoidance of recorded archaeological sites within the proposed easement, as impacts of this type of project are not wholesale (in contrast to roads for example). Although the easement trajectory is final the pole positions are still subject to final detailed design.

As such, PHETL–ST1, ST2 and ST3 could all be avoided. These sites should be identified in the field prior to the commencement of any disturbance and a suitable curtilage delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction of the electricity transmission line. A suitable curtilage would be outside the drip line of the trees, but determination will require discussion with Aboriginal community representatives.

For any additional impacts e.g. new access tracks or any changes to the assessed easement, Alkane should ensure that previously avoided sites remain so and that if impacts are proposed to unassessed areas, these will require Aboriginal heritage assessment prior to construction.

7.6.3.2 Tomingley Narromine Water Pipeline

TNWP-OS1 with PAD was assessed as having archaeological sensitivity and hence a limited a limited programme of test pitting across the crest of the capped terrace landform and along the proposed impact footprint for the pipeline was undertaken. The results of this test excavation programme are discussed in briefly in Section 6 and the full excavation report is appended to this document (**Appendix 5**).

The test excavations established that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between the test excavation pits). These artefacts are likely to be in the top 20cm of soil. In light of this, the following recommendations are made in relation to the construction of the TGP water pipeline:

1. When the water pipeline is excavated in the area of TNWP-OS1 with PAD, a suitably qualified person from the Aboriginal community should be in attendance to monitor the excavation and to retrieve any further Aboriginal artefacts;
2. Care should be taken when excavating in the vicinity of TNWP-OS1 with PAD to ensure minimal disturbance to the ground surface beyond what is necessary to lay the pipeline;
3. Cars and machinery should, as much as is practical, be confined to the dirt road when in the vicinity of TNWP-OS1 with PAD;
4. Any soil excavated for the water pipeline should be replaced in the area and not removed to some other location;
5. Should significant numbers of Aboriginal artefacts (i.e. a cluster of 100+ artefacts) be noted during construction, work should cease and the OEH be notified on how to best proceed; and

6. Should human skeletal material be noticed, all work should cease and the local police contacted. If the skeletal remains are deemed to be historical, OEH and the Narromine LALC should be contacted to determine how to best proceed.

According to Alkane, all recorded scarred trees along the water pipeline route are able to be avoided. These sites should be identified in the field prior to the commencement of any disturbance and a suitable curtilage delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction for the project or project operation once underway. A suitable curtilage would be outside the drip line of the trees, but determination will require discussion with Aboriginal community representatives.

7.6.3.3 Summary

As noted, all the specific management measures outlined above should remain the topic of active discussion with the Aboriginal community stakeholders groups and become embodied into the CHMP for the TGP. The CHMP document would be developed in partnership with Alkane; the stakeholders for the project, DECCW and the DoP.

8. RELEVANT LEGISLATION – ABORIGINAL HERITAGE

8.1 INTRODUCTION

Base line principles for the conservation of heritage places and relics can be found in the Burra Charter[10], which recognizes that there are places worth keeping because they can enrich our lives on many levels. The significance of such places may be embodied in fabric (physical material), environmental setting, contents, use or its meaning to people, and should be assessed through methodical data collection. Since its adoption in 1979, The Burra Charter has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The Burra Charter generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a State level.

8.2 COMMONWEALTH LEGISLATION

8.2.1 Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides a national framework for the protection of matters of national environmental significance and the conservation of Australia's biodiversity. Under the EPBC Act, "environment" includes:

- ecosystems and their constituent parts, including people and communities;

[10] The Burra Charter defines the basic principles and procedures to be followed in the conservation of all kinds of places such as monuments, buildings, Aboriginal sites, roads, archaeological sites, whole districts or even regions. It was first adopted in 1979, based on the Australian ICOMOS (International Council on Monuments and Sites) review (1977) of the 1966 Venice Charter (Australian ICOMOS Inc. 1998).

- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- heritage values of places; and
- the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).

Recently, Australia has changed the legislation that protects its national heritage places. Three new laws came into effect on January 2004, which provide changes that offer greater legal protection under the existing Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and repeal the Australian Heritage Commission Act 1975 .

The three new Acts are discussed in the following sections.

8.2.2 The Environment and Heritage Legislation Amendment Act (No.1) 2003

This Act amended the EPBC Act to include 'national heritage' and protect listed places to the fullest extent under the Australian Constitution. Under the new system, National Heritage joins six other important 'matters of national environmental significance' (NES matters) already protected by the EPBC Act. The Environment and Heritage Legislation Amendment Act (no.1) 2003 also establishes the National Heritage List which records places with outstanding natural and cultural heritage values that contribute to Australia's National identity; and the Commonwealth Heritage List which comprises the natural, Aboriginal and historic places owned or managed by the Commonwealth.

8.2.3 The Australian Heritage Council Act 2003

This Act establishes a new independent heritage advisory body to the Minister for the Environment and Heritage, the Australian Heritage Council (replacing the Australian Heritage Commission established under the *Australian Heritage Commission Act 1975*) and retains the Register of the National Estate (RNE). The RNE was also established under the *Australian Heritage Commission Act 1975* which defined it as a register of those places being components of the natural environment of Australia, or the cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations, as well as for the present community. Listings on the RNE are not legally binding but provide widely acknowledged recognition of the cultural value of the listed place or item.

Listing of an item or place on the RNE has certain implications for how Commonwealth agencies may deal with an item.

8.2.4 The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003

This Act repeals the *Australian Heritage Commission Act*, amends various Acts as a consequence of this repeal and allows for the transition period, whilst the National and Commonwealth Heritage Lists are finalised. During this transition period the Register of the National Estate will act in conjunction with the formative National and Commonwealth lists to provide full coverage for items already identified as having cultural heritage significance.

Approval under the EPBC Act is required if an action is proposed that will have, or is likely to have, a significant impact on the National Heritage values of a National Heritage place and/or any other NES matter. This action must be referred to the Australian Government Minister for the Environment and Heritage. The Minister will decide whether an action will, or is likely to, have a significant impact on a matter of national environmental significance.

The heritage provisions of the EPBC Act allow for a transition period whilst the National and Commonwealth Heritage Lists are finalised. During this transition period the Register of the National Estate acts in conjunction with the formative National and Commonwealth lists to provide full coverage for items already identified as having cultural heritage significance.

8.2.5 Application to the Study Area – Commonwealth Listings

No items within the Project Site are listed on the Register of the National Estate, the National Heritage List or the Commonwealth Heritage List.

8.2.6 Aboriginal and Torres Strait Islander Heritage Protection Amendment Act 1987

The *Aboriginal and Torres Strait Islander Heritage Protection Amendment Act 1987* is a Federal act administered by the Aboriginal and Torres Strait Islander Commission and provides protection for Aboriginal heritage in circumstances where such protection is not available at a state level. This Act comes under Commonwealth jurisdiction which means that it can override state and territory provisions.

8.3 STATE LEGISLATION

A number of Acts of parliament provide for the protection of Aboriginal heritage at various levels of government (NSW Heritage 1998: 3). The three most important statutes in New South Wales are the:

- *Environmental Planning and Assessment Act 1979 (EP&A Act),* amended by the *Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Act 2005* (EP&AA Act).
- *National Parks and Wildlife Act 1974* (NPW Act).
- *Heritage Act 1977 (H Act).*

8.3.1 Environmental Planning and Assessment Amendment Act 2005

The EP&AA Act 2005 is founded on the *Environmental Planning and Assessment Act 1979* that requires environmental impacts, including cultural heritage, are considered at a land-use planning and decision making level. Essentially this provides a new method for project assessment that places major infrastructure projects, or those deemed to be of state significance as defined in Schedule 1 of the *State Environmental Planning Policy (Major Development) 2005*, under Part 3A of the Act.

Under the EP&AA Act Aboriginal heritage is protected in three different ways:

1. Through planning instruments such as Regional Environmental Plans (REPs) and Local Environmental Plans (LEPs). Such plans outline permissible land use as well as identifying potential constraints. Section 112 (1) of the EP & A Act delineates that no approval for either prescribed developments or developments likely significantly affect the environment, may be granted without prior appropriate environmental impact assessment.
2. Section 90 of the Act (Part 4, Division 5) lists impacts to the environmental resource, including cultural heritage, which must be considered before development approval is granted.
3. All State Government agencies acting as determining authorities on environmental issues must consider a range of community and cultural factors, including Aboriginal heritage, in their decision-making process. The factors to be considered in such assessments are set out in the EP&A Regulations (1980), Part VII.

Under Section 75U of *The Environmental Planning and Assessment Act 2005* (EP&A Act), if the current project is granted project approval under Part 3A of the EP&A Act, the following approvals, which may have otherwise been relevant, will not be required to carry out the Project:

- *Heritage Act 1977*: Disturbance to an item listed on the State Heritage Register or Interim Heritage Order – Excavation Permit; and
- *National Parks and Wildlife Act 1974*: A section 87 preliminary research / collection permit; or section 90 consent to destroy objects.

8.3.2 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* provides for the protection of Aboriginal objects (sites, relics and cultural material) and Aboriginal places. Under the NPW Act (S.5), an Aboriginal object is defined as; any deposit, object or material evidence (not being a handicraft for sale) relating to Aboriginal and non-European habitation of the area that comprises New South Wales, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

Although the provisions of the NPW Act, do not apply for developments assessed under Part 3A of the EP&A Act, their intent has been considered and remains part of the assessment requirements, with independent expert panels being utilised to assess the veracity of environmental assessment reports. Under Part 3A, the Section 90 Aboriginal Heritage Impact Permit (AHIPs) that are required for impacts to Aboriginal heritage under the NP&W Act, are not required. The further investigation of sites for the purpose of understanding them to a level sufficient to design appropriate management may be undertake without a permit subject to Section 75U(1 and 4) of the EP&A Act. Final management however, is guided by a Statement

of Commitments in terms of heritage, which then forms the basis for the Minister's approval which will usually contain a series of conditions likely to include a requirement for the preparation of an Aboriginal Heritage Management Plan. These conditions include similar checks and balances as required by the NP&W Act, such as salvage excavation programmes or site destruction mitigation development etc. as is currently required under the permitting process, however, without the need to obtain permits.

8.3.3 Application to the Study Areas

A review of the (DECCW) AHIMS register identified one possible Aboriginal object within the Project Site (DECCW # 36-3-0013), with a further four sites occurring within an RTA owned road corridor inside the Mine Site. However, a further sixty sites were recorded during this assessment.

Under Part 3A of the EP& A Act, permits are not required to impact Aboriginal sites, however a SoC including an AHMP may be required to develop and guide the management of Aboriginal sites.

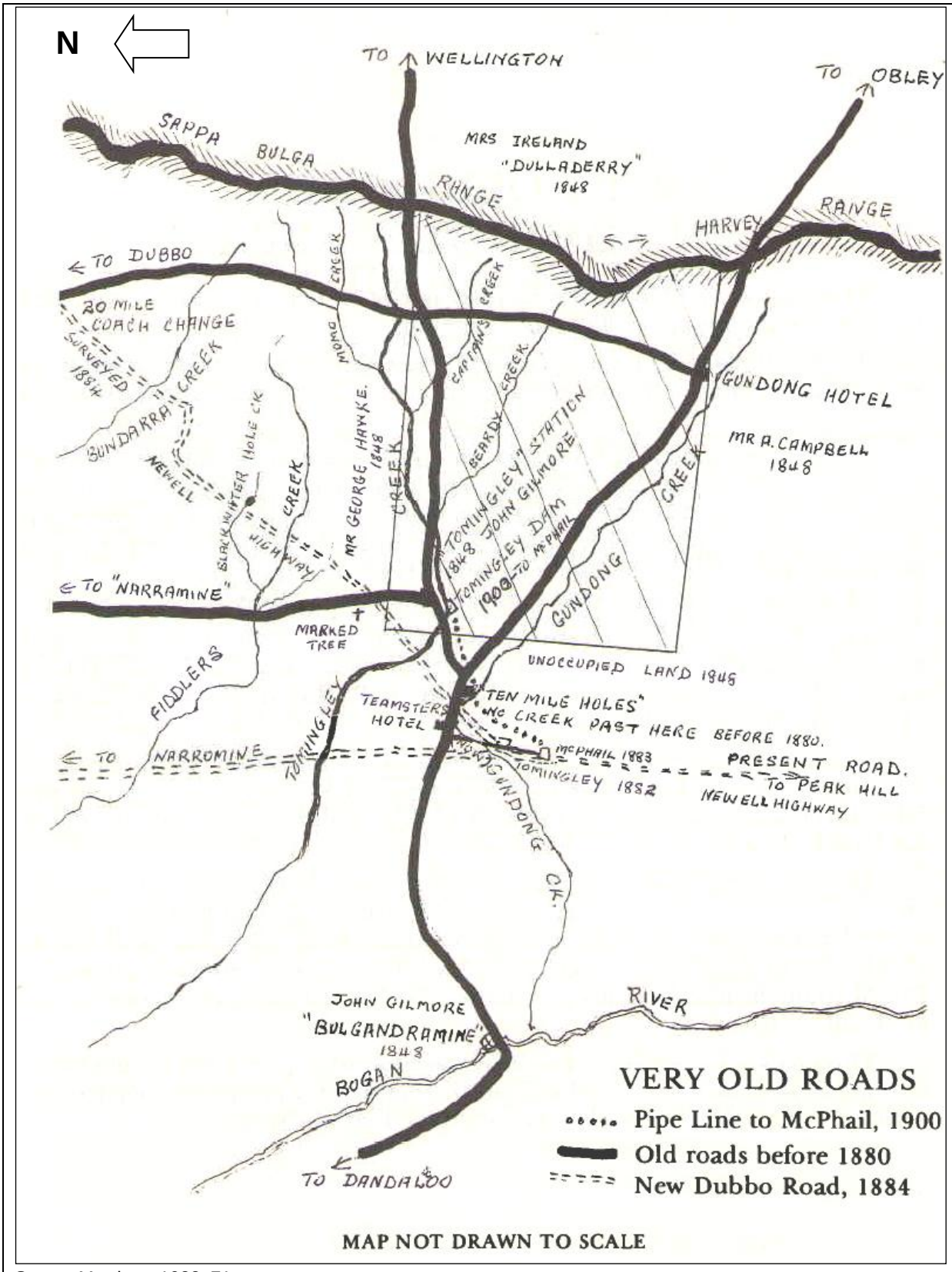
9. EUROPEAN HERITAGE

9.1 BRIEF HISTORICAL OUTLINE OF TOMINGLEY AND SURROUNDS

Exploration of the Parkes district began in 1817 when John Oxley explored the Lachlan district and the watershed between the Bogan and Lachlan Rivers north of Trundle, which was followed on by Sturt in 1829 when the Bogan River was again recorded (Kass 2003: 9). In 1833, further investigation was being undertaken of the Bogan River by Surveyor Dixon, followed by Mitchell in 1835. Mitchell found that white squatters were already entering the area in the 1830's, despite being outside the Limits of Settlement. Very early contact between Aboriginal tribes and the explorers Oxley, Cunningham and Mitchell is described in **Section 4.1**.

The name 'Tomingley' first appears in the Government Gazette of 1848 naming a run of 22,400 acres claimed by J. Gilmore and covering the entirety of modern Tomingley (Mewburn 1982: 8). The name Tomingley is said to have been after an early settler of the area, Tom Ingley (Cook and Garvey 1999: 271).

The earliest roads in the area followed waterways where possible, and the road from the Bulgandramine on the Bogan River to the east towards Obley and onto Wellington had as its first stop, at place called Ten Mile Holes on Gundong Creek (**Figure 16**). This was the first place after leaving the Bogan where water could predictably be found on the journey east. Ten Mile Holes therefore provided a camping place for travellers and later for teams who were carting ore from the Cobar mines to Orange before the railway (Mewburn 1982: 11).



Source Mewburn 1982: 71

Figure 16
EARLY SKETCH MAP OF ROADS AND WATERWAYS AROUND TEN MILE HOLES

Gold was discovered in Tomingley in 1879, ten years before it was found in Peak Hill. By 1883, Bill Reakes and Jim Smith had two sunk exploration shafts that found reefs at 65 feet and 25 feet depth respectively and the quality of the gold was high enough for the establishment of a community to service the gold mining (Mewburn 1982: 12). In 1883 the Tomingley Gold Mining Company was established and installed a 15 head stamper (crusher) and once some rain had come to fill the dams they had created (immediately west of the edge of Modern Tomingley) it and the Star Gold Mining Company had excellent returns (Cook and Garvey 1999: 271). Although Tomingley was then proclaimed a village in 1884 (Chappel 1989:19), mining did slow somewhat in this year, forcing the closure of one store, although two hotels, two stores and school remained open, the latter educating 33 children in 1884 (Cook and Garvey 1999: 272).

By 1895 five leases south of Tomingley had been sold to the English syndicate that became the Myall United Gold Mine, which in turn became known as the McPhail Mine, after Donald McPhail who had first pegged the leases in 1883. McPhail Mine and village were established about 2kms south of the current township of Tomingley.

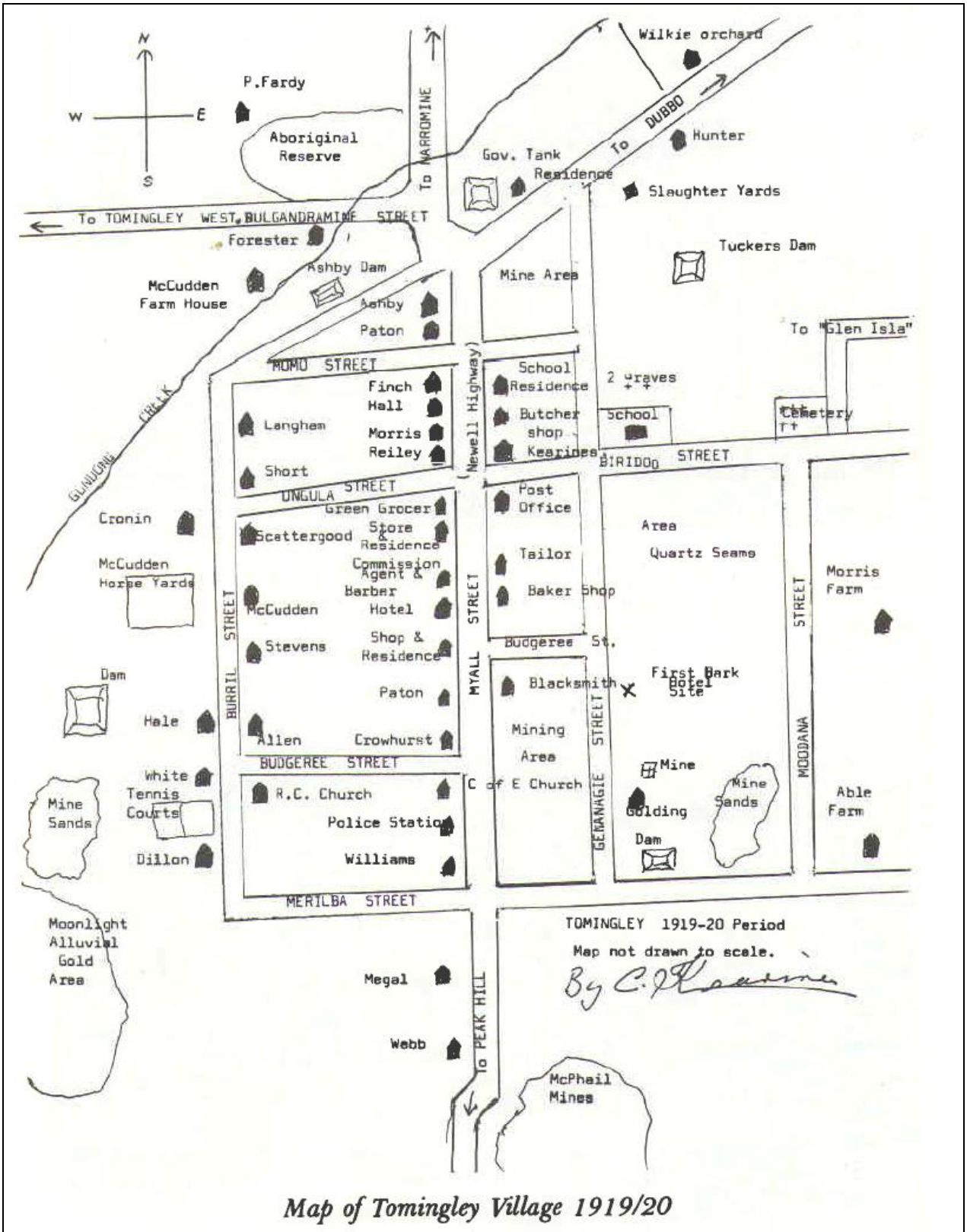
Water from Ten Mile Holes played a vital role in enabling the settlement of Tomingley and hence the mining of the McPhail Mines, especially as there was little water otherwise available in the locality. It is recorded that before European settlement Gundong Creek had no channel west of the Ten Mile spring and water simply overflowed from the spring and spread across the landscape. The first man to apparently begin to channel the spring was Wah Sing, a Chinese man who was a market gardener. Wah Sing dug a channel from the spring head to the southwest to bring water to his vegetable gardens. He apparently created little dams in which to hold the water and then bucketed it (using a yoke with suspended buckets) from the dams to his gardens (Mewburn 1982: 11). The vegetables generated though Wah Sings endeavours are said to have supported the needs of the mining community of McPhail.

McPhail Mines operated for almost 30 years and are said to have extracted 50,000 ounces of gold in that time. Operations prospered until 1905, slowing till 1913 when it was finally closed (Mewburn 1982: 12). The location of McPhail Mines is just outside the boundaries of the current TGP Mine Site. **Figure 17** shows the extent of the Tomingley town around 1919 – 1920 and shows the location of McPhail Mines to the south (note this is not to scale). During its height of operation, the township consisted of a churches, school, shops, hotels and houses.

By 1920, Timbrebongie Shire employed men to cut a channel from the Ten Mile spring to the Government Tank at Tomingley and away from the main road which was becoming a watercourse during high rainfall events. This channel is said to now be 6 - 8 feet deep and up to 20 feet wide. Mewburn records that the Ten Mile Holes as they were first known, no longer exist. The water table of the Creek has been lowered and the spring no longer overflows to fill these holes which are today covered with silt and grass (Mewburn 1982: 11).

9.2 REGISTER SEARCHES FOR EUROPEAN HERITAGE

It is noteworthy that the TNWP traverses land administered by Narromine Shire Council, while Peak Hill is within Parkes Shire Council and hence part of the proposed electricity transmission line is within this shire. Consequently database searches will provide results for both shires.



Map of Tomingley Village 1919/20

Source Mewburn 1982: 71

Figure 17
EARLY SKETCH MAP OF TOMINGLEY TOWNSHIP

9.2.1 Australian Heritage Database

There are 6 items listed on the Australian Heritage Database located within the Narromine Local Government Area (LGA). Of these, none are apparently located in the vicinity of the TGP Mine Site Study Area, although may be closer to the TNWP Study Area. Five of these listings are in Narromine, three being listed as Registered Aboriginal Places on the Register of the National Estate. Of these three places, one is the Euromedah carved tree and the second is the Narromine carved tree, both noted earlier in the Aboriginal section of this report. The third Aboriginal Place is not further described and nor is any locational information provided. The other two sites within Narromine are built heritage, comprising the Butchers Shop and the Railway Station on Burroway Road.

There are 17 items listed on the Australian Heritage Database located within the Parkes LGA. Of these only two are located in the vicinity of the TGP, both being in Peak Hill itself. One of these listings is the Peak Hill cemetery while the second is an Aboriginal Place, listed as an Indicative Place on the Register of the National Estate. Indicative Place means that data on this location has been entered into the database, however, a formal nomination has not been made and the Heritage Council has not received the data for assessment. No location information is available on this site, although it is thought unlikely that the proposed electricity transmission line will intersect with the site. Discussion with the Peak Hill LALC undertaken at the time of survey indicated that this place is not within the PHTETL Study Area. Several attempts were made to contact the Australian Heritage Office to discuss this listing, however all were unsuccessful. Furthermore, Trevor Robinson[11] indicated that he knew nothing about this Aboriginal Place.

9.2.2 NSW Heritage Office – State Heritage Register and Inventory

There are no items listed on the State Heritage Register (SHR) located within the Narromine Local Government Area. 24 items are listed on the State Heritage Inventory (SHI - which includes items listed on LEPs and State Government agency heritage registers). Of these none are located in Tomingley or in the vicinity of the TGP, all being in Narromine or Trangie.

There are two items listed on the State Heritage Register (SHR) within the Parkes Local Government Area. Both are located in Parkes itself. A further 13 items are listed on the State Heritage Inventory. Of these only three are located in the vicinity of the proposed electricity transmission line, all being in Peak Hill. These items include the Peak Hill Hospital and Fire Station as well as the Catholic Church. These items will not be impacted by the TGP.

9.2.3 Narromine Shire Council Local Environmental Plan 1997

Schedule 1 of the Narromine Council LEP lists items of heritage for the shire. Eleven items are on this list, with one of these items comprising a groups of five structures on Burroway St. Six listed items are in Narromine township with the remaining five comprising homesteads and / or woolsheds of properties in the LGA (Mungeribar and Buddah) as well as three carved trees on the property previously known as Burroway, and now named Wilga Park, to the north of Narromine.

[11] Aboriginal Heritage Conservation Officer, North West Aboriginal Heritage Region, Aboriginal Heritage Operation Branch, Cultural Heritage Division.

9.2.4 Parkes Shire Council Local Environmental Plan 1990

Schedule 1 of the Parkes Council LEP lists items of heritage for the shire. Nine items are on this list, all are in Parkes bar two which are in Peak Hill, being those nominated above as on the SHI, being the Peak Hill Hospital and the Catholic Church. These items will not be impacted by the TGP.

9.2.5 New South Wales State Archives

The NSW Archives contains a range of online indexes relating to government (crown) land, including registers of land purchases, mining leases and surveyor general crown plans. They also hold other social information, such as census material, some convict and court records, education, housing, and immigration records. Searches were performed on the properties where significant archaeological material was recorded, such as TGP-HS6 (see Section 11.2), but no additional information was found.

9.2.6 TROVE – National Library of Australia

Trove is an online searchable database of electronically translated sources from the mid 19th century onwards. The online sources available include: pictures, journals, articles, digitised newspapers, maps, diaries and letters. All 400 sources available on Tomingley were reviewed as part of the historical research process.

9.2.7 Land and Property Information

Historical and land title searches were conducted with the Land and Property Information division of the NSW Department of Finance and Services. These searches included viewing the parish maps and crown plans to determine land title in regards to the site, TGP-HS6 (described in Section 11.2).

9.3 LOCAL COMMUNITY CONSULTATION

Contact was made with the Peak Hill Historical Society, who discussed McPhail Mines over the phone and then sent a brief summary, taken from the Narromine Mine Data Sheets. We acknowledge Mrs Hutton for her contribution.

9.4 SUMMARY OF EUROPEAN HERITAGE ISSUES PERTINENT TO TGP

Register searches have shown that no items of European heritage are currently listed on any of the local, state or national databases within the Project Site.

Review of the history of the local area, however, indicates that there has been a long period of settlement in Tomingley and surrounds and that part of the McPhail Village ruins, McPhail mining infrastructure and / or exploration shafts are likely to be at least partially within the Mine Site Study Area. Due to the history of gold exploration throughout the area there is also potential for there to be other historic exploration shafts.

10. SURVEY METHODOLOGY

Survey was undertaken concurrently with the Aboriginal heritage assessment utilising pedestrian transects over the Project Site, with at minimum four surveyors. Five survey days were used for the Mine Site Study Area, two for the TNWP Study Area and one for the PHTETL Study Area.

11. SURVEY RESULTS – EUROPEAN HERITAGE

11.1 OVERVIEW

In total, eight (8) items of European heritage were recorded over the Project Site, comprising:

- Four (4) items of moveable heritage;
- Two (2) building remnants; and
- Two (2) blazed trees.

Of these, six (6) European sites were recorded over the Mine Site Study Area (**Figure 18**). These comprise:

- Two (2) historical building remnants; and
- Four (4) items of movable heritage.

Site Name	Format	Zone	Easting	Northing	Site Type
TGP–HS1	GDA	55	614541	6393770	Building remnant
TGP–HS2	GDA	55	614532	6393779	Building remnant
TGP–HS3	GDA	55	612771	6394160	Moveable Heritage / Truck
TGP–HS4	GDA	55	614354	6393524	Moveable Heritage / Coin
TGP–HS5	GDA	55	615629	6394239	Movable Heritage / Farm Machinery
TGP–HS6	GDA	55	615676	6394306	Building remnant / Farm Machinery / Pottery.

No items of European sites were recorded within the PHTETL Study Area.

Two (2) European sites were recorded during the TNWP assessment (**Figures 19** and **20**). These comprise two (2) Blazed trees (Surveyors trees).

Site Name	Format	Zone	Easting	Northing	Site Type
TNWP–HS1	GDA	55	622900	6430330	Blazed tree
TNWP–HS2	GDA	55	615334	6413935	Blazed tree

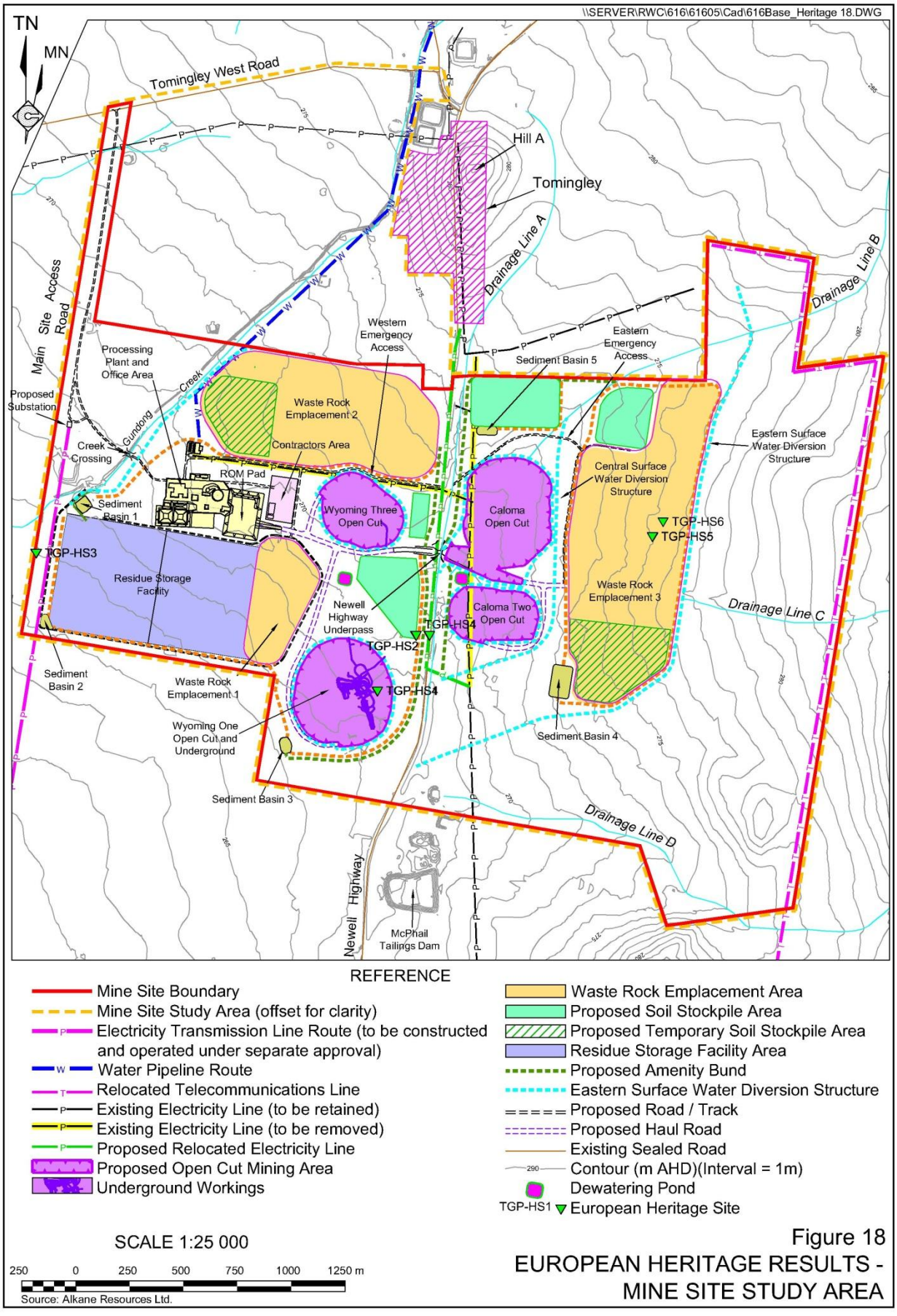


Figure 18
EUROPEAN HERITAGE RESULTS - MINE SITE STUDY AREA

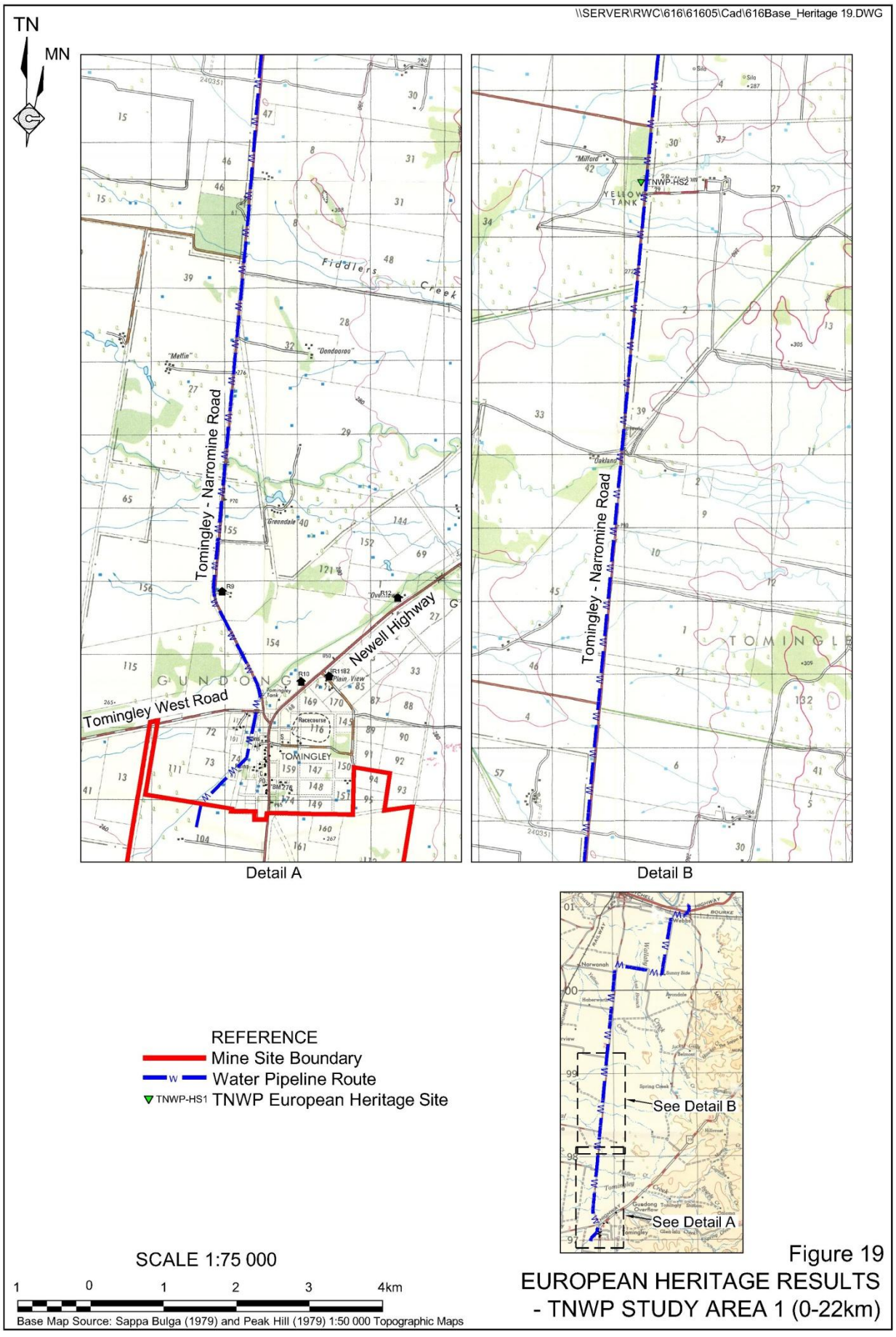


Figure 19
EUROPEAN HERITAGE RESULTS
- TNWP STUDY AREA 1 (0-22km)

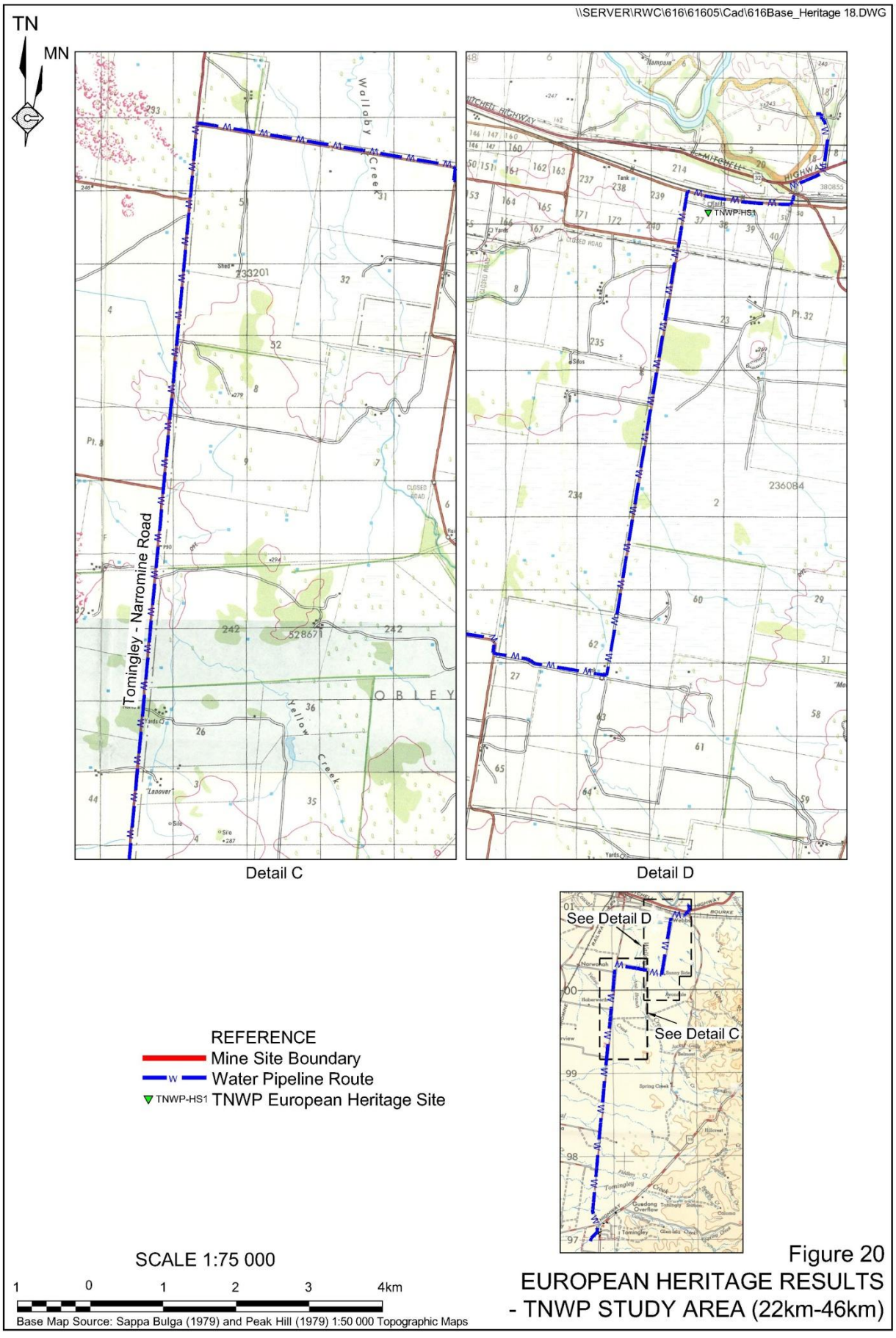


Figure 20
EUROPEAN HERITAGE RESULTS
- TNWP STUDY AREA (22km-46km)

11.2 DETAILS OF MINE SITE STUDY AREA SURVEY RESULTS

TGP–HS1 ***Zone 55*** ***GDA 614541 E 6393770 N***

This site consists of remnants that may have been related to gold mining in the area, specifically part of the McPhail Mine village. The site is located within the vegetated portion of paddock 4 in the Mine Site Study Area (**Figure 18**) and comprises many pepper trees (**Plate 30** & **31**). Pepper trees are often remnants or indicators of prior European settlement as they were considered a good shade tree for homesteads. This specific recording of the McPhail site bears only very minimal ruins including a small portion of foundation / floor remains of a rectangular structure with metal reinforcing rods. The many bricks on the ground could be a result of the removal of the dwelling. It is noteworthy that Ken Robinson of the survey team told the OzArk archaeologist that he remembers one of the houses from McPhail being relocated for his grandmother to live in.

TGP–HS2 ***Zone 55*** ***GDA 614532 E 6393779 N***

This site is located adjacent to HS1 (**Figure 16**, **Plate 32**) and consists of an *in situ* concrete slab (**Plates 33**) surrounded by a scatter of historic rubbish, bits of glass, bamboo and pepper trees (**Plate 35**). The concrete is constituted of coarse, dark-grey broken up stones (**Plate 34**). According to Mewburn's plan (**Figure 16**) this property may have been owed by Webb, but the scale is not accurate and the distance of this property from the township is not clear.

TGP–HS3 ***Zone 55*** ***GDA 612771 E 6394160 N***

This site comprises an abandoned Bedford truck from the 1940's. Although in derelict condition (**Plate 37**) and almost completely rusted through, the words 'Peak Perfection Cordials' is legible from sign writing on the passenger side of the truck (**Plate 39**). The shiny badge on the car bonnet shows that the car was made in England (**Plate 38**). A Bedford vehicle that appears to be of the same model has been dated to 1948. The truck is situated adjacent to the fence line of paddock 4 of the Mine Site Study Area within a windrow of trees (**Figure 18**).

TGP–HS4 **Zone 55** ***GDA* 614354 *E 6393524 N***

This site comprises a half penny coin circulated in 1886. This is within the period during which gold was first discovered in Tomingley (1879) and Peak Hill (1889) (**Plate 42** & **43**). The coin was found within paddock 5 of the Mine Site Study Area within the Wyoming One Open Cut, in the vicinity of the McPhail Mine (**Figure 18**). Several bottles found nearby date to a considerable time after the minting of this coin (**Plate 44**).

TGP–HS5 ***Zone 55*** ***GDA 615629 E 6394239 N***

This site is located on the western edge of the Waste Rock Emplacement 3 Area within the Mine Site Study Area (**Figure 18**). It consists of several pieces of old farm machinery including a Mouldboard plough, seeder and part of an old harvester (**Plate 67**). All items were horse drawn, have iron wheels and were abandoned around a tree and then pushed up around it by a bulldozer. On the brackets of the harvester reads the numbers 'L383'. Site HS6 is within 100 m of this site.

Discussions with Mr Bruce Maclean, whose family owned this property for 60 years, records that it was purchased from the Clarkes in the 1950's, and that part of the old wagon was still standing in the 1980's (Bruce Maclean Pers. Comm. 20.10.09).

TGP–HS6 **Zone 55** ***GDA 615676 E 6394306 N***

This site is located on the western edge of the Waste Rock Emplacement 3 Area within the Mine Site Study Area (**Figure 18**). It appears to comprise the location of dwelling that has been bull-dozed along with associated farm machinery (**Plate 68**). Specific items that make up this site, include; a horse drawn wagon with axle wheel rims, hand-made sand stock bricks (probably date to 1850-1870) from a fire place / chimney, an old rusted single cast iron bed, broken pieces of a stove (cast iron) with lighthouse and small pieces of broken glass and pottery (**Plate 69**). Site HS5 is within 100 m of this site.

It is considered likely that this site is *in situ* insofar as this is the location of the dwelling (rather than this material having being dumped here), but it has been significantly damaged through being bulldozed.

Further discussions with Mr Bruce Maclean revealed that this structure was described by his father as an old shed (rather than as a homestead) (Bruce Maclean Pers. Comm. 20.10.09).

The earliest parish map with names included is from 1912 (**Figure 21**). This map shows the property then belonged to a C. T. Donnelly.

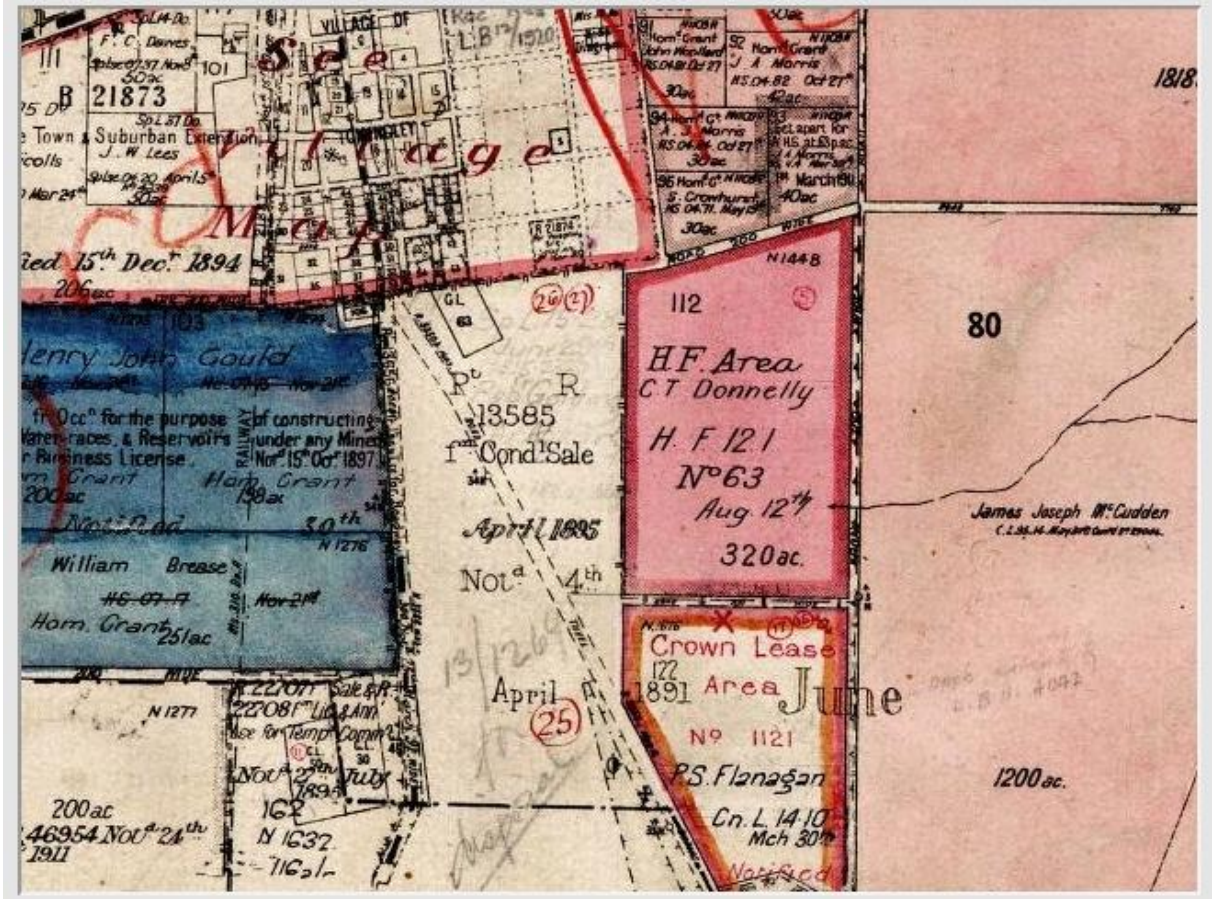


Figure 21
PARISH MAP 1912

According to the parish maps, somewhere between 1916 and 1926 the property was then transferred to a J H Clarke (**Figure 22**), who passed away prior to 1931. Through his will the property was most likely transferred to a Bessie Mary Clarke (The Sydney Morning Herald, Thursday 26 November 1931). It appears members of the Clarke family retained the property until the current owners, the McLean family purchased it in the mid 1950s (Bruce Maclean Pers. Comm. 08.10.09).

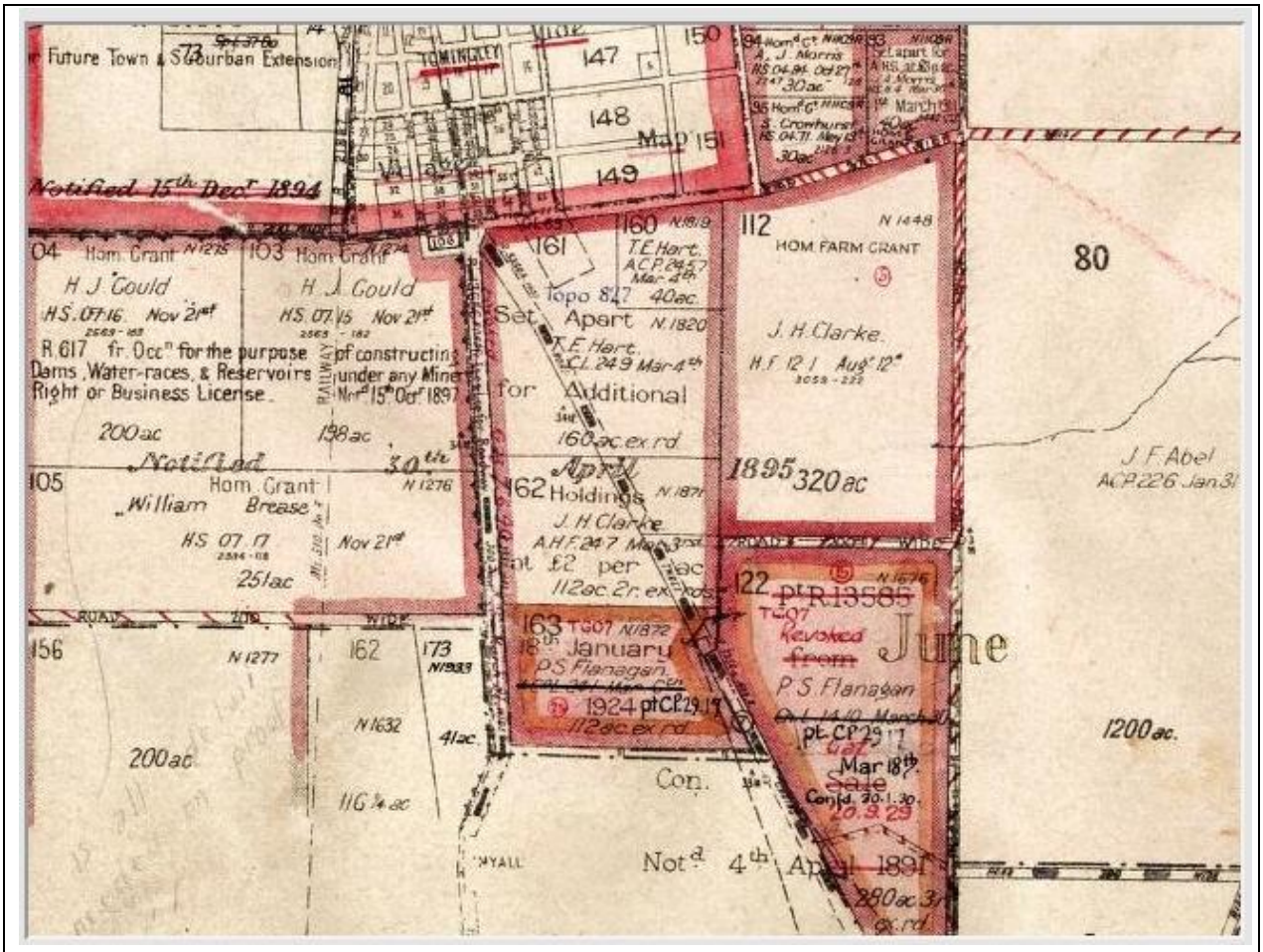


Figure 22
PARISH MAP 1926

The NSW Archives does not hold any historical information on C T Donnelly or J H Clarke of Tomingley (or Gundong).

Flanagan's Block

The southernmost block of the MLA area is described by Mr Maclean as Flanagan's Block. This blocks extends south beyond the limits of the Project Site and just the other side of the boundary is the remains of an old homestead and some early diggings. As these are outside the Study Area they were not recorded as part of this project, but their presence nearby is noted.

11.3 DETAILS OF PHTETL STUDY AREA SURVEY RESULTS

No items of European heritage were recorded during this survey component

11.4 DETAILS OF TNWP STUDY AREA SURVEY RESULTS

TNWP-HS1 ***Zone 55*** ***MGA 622955 E 6430473 N***

This site is a surveyor's tree or blazed tree. The tree is a white cypress pine (*Callitris glaucophylla*) and is located half way along Webbs Siding Road on the left hand side of the road reserve 2km south of the Macquarie River (**Figure 19**). Two sets of numbers are apparent. The first number is difficult to interpret, possibly a number '3' and then the number '7', with the numbers 38 below (**Plate 161** & **162**). This tree occurs at the cadastral boundary and on the edge of Lot number 37 and 38. The scar faces north.

TNWP-HS2 ***Zone 55*** ***AGD 6153342 E 6413935 N***

This site is a surveyor's tree or blazed tree. The tree is a Bimble Box (*E. populnea*) and is located on the left hand side of the highway between Tomingley to Narromine near Yellow tank adjacent to the 'Alvahom' property (**Figure 20**) (**Plate 143** & **144**). The glyphs can only just be deciphered as the scar has almost closed over. One letter 'C' or 'O' is apparent with the number 8 underneath and most likely refers to the property boundary. The scar faces east.

12. SIGNIFICANCE ASSESSMENT

12.1 GENERAL PRINCIPLES

The assessment of heritage significance is a process of examining the various factors and values which bear upon a place, building or structure and determining what level of significance, if any, the item may have with respect to an established set of heritage criteria. Broadly speaking, these criteria are based on the four values set out in the Australia International Council on Monuments and Sites (ICOMOS) Burra Charter and are the methodology accepted by heritage authorities and professional consultants. These criteria are:

- historic significance;
- aesthetic significance;
- scientific significance; and
- social significance.

The Heritage Council of NSW has defined a set of heritage significance criteria against which the heritage significance of an item may be judged. The use of standardised criteria helps achieve consistency in the assessment process and provides a basis for comparative assessment between types or classes of items.

The Heritage Council significance criteria are as follows:

1. **Criterion (a)** – an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
2. **Criterion (b)** – an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);

3. **Criterion (c)** – an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
4. **Criterion (d)** – an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
5. **Criterion (e)** – an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
6. **Criterion (f)** – an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);
7. **Criterion (g)** – an item is important in demonstrating the principal characteristics of a class of NSW's:
    - cultural or natural places; or
    - cultural or natural environments: or
    - a class of the local area's:
    - cultural or natural places; or
    - cultural or natural environments.

In many cases, items or places will be significant under only one or two of these criteria. Structures or items that do not function in their original context are much less able to demonstrate the qualities for which they were originally designed and this thereby reduces their heritage significance.

12.2 SIGNIFICANCE ASSESSMENT OF TGP SITES

12.2.1 Significant Sites

The following significance assessment of the items recorded in Section 11.1 is based on the significance criteria of the Heritage Council of NSW, as outlined in Section 12.1.

None of the recorded items are listed on any government heritage databases although McPhail Village was documented through review of written historical material and through consultation with the Peak Hill Historical Society (PHSC).

The following relates the significance criteria to the sites recorded over the Study Area.

Criterion (a) – an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);

- TGP-HS1/2 (McPhail village) and HS4 (coin): Mining has been a significant shaping focus for the development and growth of the Tomingley and Peak Hill area, early evidence of the mining operations is important for documenting the development of the local area. The coin in itself is only important as a physical attestation of the 'human' element of prospecting in the late nineteenth century.
- TGP-HS5 (Agricultural machinery): Development of agriculture in the Tomingley area predated the mining exploration but also no doubt expanded significantly

once mining had caused the population increases of the late nineteenth century. These remains attest to the agricultural history of the area.

- TGP-HS6 (Dwelling remains and agricultural remnants): Development of agriculture in the Tomingley area predated the mining exploration but also no doubt expanded significantly once mining had caused the population increases of the late nineteenth century. The remains of this dwelling ad associated material attest to the agricultural history of the area but may also relate to mineral exploration.
- TGP-HS3 (Cordial Truck): Although this item cannot be seen to directly relate to this significance criterion, it is noteworthy that a local individual, Tony Ellis, who owned the adjacent property, parked the truck in this location 20 years ago.
- TNWP-HS1/2 (Surveyors Trees): The division of land into rural holdings over the past 150 years is associated with the expansion of rural NSW in terms of expanding the limits of settlement and these trees provide physical evidence of that process.

Criterion (b) – an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);

- TGP-HS1/2 (McPhail village): is considered to have association with Donald McPhail. Donald McPhail pegged the leases in 1883 and McPhail Mine and village were established about 2km south of the current township of Tomingley. The association with Donald McPhail satisfies criterion B at a local level.
- TGP-HS5/6 (Dwelling and agricultural machinery) and HS4 (coin): These items cannot be seen to directly relate to this significance criterion. It is possible that further landholder research may generate some further information about the dwelling of HS6, which may then add to this assessment.
- TGP-HS3 (Cordial Truck): Association of this truck with an individual of the Tomingley area who ran the business shows connection with this criterion at a local level.
- TNWP-HS1/2 (Surveyors Trees): The surveyor's trees may be associated with specific early pioneer surveyors, although this information may not have been recorded, or be associated with specific property divisions of note. If these trees were to be impacted further research into them would be required.

Criterion (c) – an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);

- None of the sites recorded can be seen to relate specifically to this significance criterion.

Criterion (d) – an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;

- None of the sites recorded provide evidence of particular connections on a social, cultural or spiritual level to parts of the Peak Hill and Tomingley community.

Criterion (e) – an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)

- TGP-HS1/2 (McPhail village): This site no doubt has some physical information that would contribute to our understanding of McPhail Mine and village, although there is very little above ground evidence remaining and the evidence potentially within any sub-surface deposits is likely to be of limited local significance.
- TGP-HS5/6 (Dwelling and agricultural machinery): If the remains of the dwelling of HS6 have some portion of intact foundations still in place beneath the mounded ruins, there is limited potential that the area may yield information about the era of its use (possibly late 1800's) and hence this site is seen as having potential local historical significance.
- HS4 (coin): This item cannot be seen to directly relate to this significance criterion.
- TGP-HS3 (Cordial Truck): It is unlikely the truck possesses information not already known / documented.
- TNWP-HS1/2 (Surveyors Trees): This criterion is not considered applicable.

Criterion (f) – an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)

- None of the sites recorded appear to have uncommon, rare or endangered aspects of the local area's history, although as the parameters of this study does not include scope for comparison against the wider body of historic sites relating to the mining industry in the area, further assessment would be required if impacts to the recorded sites were proposed.

Criterion (g) – an item is important in demonstrating the principal characteristics of a class of NSW's:

  - *cultural or natural places; or*
  - *cultural or natural environments: or*
  - *A class of the local area's:*
  - *cultural or natural places; or*
  - *cultural or natural environments.*
- Again, none of the recorded sites demonstrate the principal characteristics of a class of NSW's or the local areas cultural or natural place.

12.2.2 Summary Statement of Significance

Surveyor's trees TNWP-HS1/2: Surveyor's trees are a relatively frequent physical indicator of the early division of lands by European settlers and may date from the 1800's up until the 1970's. These trees are of limited local significance relating to the early division of lands.

McPhail village TGP-HS1/2: The very limited evidence of this site has a relationship to written an oral history of the area thus making it of local significance.

Dwelling remains TGP-HS6: As noted this dwelling is likely to be *in situ* but has been seriously ruined through being bulldozed. It has some potential to have sub-surface portions that may show some degree of being intact, but full significance cannot be attributed at this stage. It has been preliminarily assessed as having potential local historical significance.

Agricultural remnants TGP-HS5 and Cordial Truck TGP-HS3: These items are collectively assessed as being of limited local significance.

Coin TGP-HS4: The relationship of the coin to the timing of the early mining exploration in the area is the only aspect of the coin that gives it historical significance, which is of a local level.

It is important to note, however, that this significance assessment is preliminary in nature as targeted research on the specific items or aspects of local history they relate to may reveal further information relevant to their contextualisation. If sites are to be disturbed by the TGP, more detailed assessment may be required to document the sites in greater detail and subsequently undertake research to place them more closely in a local and regional context such that full assessments of significance can be made. This recommendation is pertinent to sites (TGP-HS1, 2 and 6) comprising building remnants of various types and would require a degree of further research to fully determine their heritage significance.

13. LIKELY IMPACTS TO EUROPEAN HERITAGE FROM THE TGP PROJECT

In terms of the impacts to European heritage as a result of the TGP, **Figure 18** delineates the location of the sites in relation to the proposed Mine Site areas of disturbance, whilst **Figure 19** shows those sites within the proposed TNWP easement.

According to the mapped footprints of the Mine Site Study Area, there will be disturbance to three recorded European heritage site, being TGP-HS4, TGP-HS5 and TGP-HS6. The coin, TGP-HS4, has already been collected for safe-keeping.

The agricultural remains of sites TGP-HS5 and the dwelling remains of site TGP-HS6 are in the footprint of Waste Rock Emplacement 3.

14. RELEVANT LEGISLATION

14.1 THE HERITAGE ACT 1977

The Heritage Act 1977 (as amended) (Heritage Act) protects the State's natural and cultural heritage and contains measures to protect archaeological remains. More specifically, the Heritage Act provides protection for European/historic relics and sites. Under Section 139, "*a person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit*". A relic is defined under the *Heritage Amendment Act 2009 (36)* as any deposit, artefact, object or material evidence that:

- relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and

- which is more than 50 years old.

If impacts to a site cannot be avoided an Archaeological Assessment and Statement of Heritage Impact may be required prior to works proceeding. An excavation permit or exception may be required.

The Heritage Act includes exceptions for works which may not need an excavation permit if they fall within the terms of the excavation permit exceptions. The relevant exceptions are as follows:

- where an archaeological assessment has been prepared in accordance with Guidelines published by the Heritage Council of NSW which indicates that any relics in the land are unlikely to have State or local heritage significance; or
- where the excavation or disturbance of land will have a minor impact on archaeological relics; or
- where the excavation or disturbance of land involves only the removal of unstratified fill which has been deposited on the land.

If proposed works do fall within the terms of the exceptions, an Exception Notification Form must be completed and submitted to the Heritage Council (not a Section 140 application). Sufficient information must be provided to enable the Heritage Council to assess the application. As with Exemption Notifications, the application form must be supplemented by a report that succinctly details the proposed works and how they comply with the exception guidelines.

14.2 APPLICATION TO THE TGP

As noted previously, the TGP will be assessed under Part 3A of the EP&A Act which exempts the need to obtain permits under Section 140 or Section 160 of the Heritage Act for impacts to an area suspected of containing historic artefacts for project approval. Recommendations for the management of heritage are nonetheless usually made using the intent of the Heritage Act to guide best practice.

15. MITIGATION AND MANAGEMENT MEASURES

Appropriate management of heritage items is primarily determined on the basis of their assessed significance, as well as the likely impacts of the proposed development. In this regard it is relevant to note that the initial recording and identification of European heritage sites provides insufficient information for full significance assessments for these items.

The management and mitigation measures proposed for historic heritage should be encapsulated into the CHMP for the project, to ensure that heritage slated as conserved within the Project Site boundaries remain so and that additional investigations in relation to site TGP-HS6 are undertaken prior to this site being impacted.

TGP-HS4: The coin comprising this site was recorded within the Wyoming One Open Cut and has already been collected for safekeeping and will eventually be put on display in the TGP mine office.

TGP-HS5: The agricultural machinery of this site is of low local significance, comprising common rural remains that are much damaged. Before they are removed, the following should occur:

- archival recording through photography should be undertaken to document them in detail; and
- further consultation with local landholders to try to obtain any knowledge that may be associated with this machinery.

TGP-HS6: The remains of the dwelling an associated material that comprise this site are more difficult to manage as it may include some *in situ* deposits containing relics beneath the mounded bulldozed material. Further research through landholder consultation has determined that these remains may be *in situ.* If avoidance of this site is not possible within the parameters of the project, the following management should be undertaken:

- Assessment and archaeological investigation according the *Historical Archaeology Code of Practice*, published by the Heritage Office, Department of Planning (2006) and the Australia ICOMOS *Burra Charter* as 'good heritage practice' should be undertaken, with a possible eventual need to undertake limited excavations at the site so as to determine more about it and hence make a more informed assessment of its significance.

TGP-HS1, TGP-HS2 and TGP-HS3 are beyond impact footprint of the TGP and Alkane must take care to ensure they remain conserved within the parameters of the TGP.

TNWP-HS1 and TGP-HS2, the surveyors trees, are located within the water pipeline easement but will not be impacted by the pipeline construction. Alkane should ensure these trees are fenced off during construction to ensure no inadvertent impacts occur.

16. RECOMMENDATIONS

16.1 ABORIGINAL HERITAGE

Under the NP&W Act it is mandatory that all Aboriginal sites recorded under any auspices be registered with the NSW DECCW Aboriginal Heritage Information and Management System (AHIMS). As a professional in the field of cultural heritage management it is the responsibility of OzArk EHM P/L to ensure this process is undertaken.

To this end it is noted that a total of sixty (60) Aboriginal sites were recorded during the assessment.

Definitive project impacts in relation to site locations are shown on **Figures 11** to **14**. The following recommendations are made on the basis of these impacts and with regard to:

- legal requirements under the terms of the National Parks and Wildlife Act 1974 (as amended) whereby it is illegal to damage, deface or destroy an Aboriginal relic / object without the prior written consent of the Director of the DECCW or without approval from the Minister under Part 3A;
- the findings of the current investigations undertaken within the Project Site; and
- the interests of the Aboriginal community and the registered stakeholder groups.

Four recorded sites (TGP-OS2, TGP-ST7, TGP-ST10 and TNWP-OS1 with PAD) would be directly impacted by the TGP. The following recommendations for the management of these sites will need to be incorporated into an CHMP for the TGP.

16.1.1 Mine Site

1. Site TGP-OS2 is located along / adjacent to the proposed Main Site Access Road into the Mine Site and will require management as follows:
    - Geofabric, followed by sand or gravel should be laid over the proposed Main Site Access Road to build up the ground surface to protect deposits of TGP-OS2 below. This will ensure that the road does not physically impact the site and artefacts that comprise it.
    - Hand planting native trees and shrubs alongside the access road as a preventative measure against vehicles going off the track and inadvertently damaging artefacts of site TGP-OS2.
2. Site TGP-ST7 is the carved tree located within the footprint of the Wyoming One open cut. Due to the high significance of this site to the local community and beyond, and because the interpretation of this tree as a burial tree cannot be ruled out, the following measures should be implemented:
    - With agreement of the Traditional Owners, it would be appropriate if the outer bark of the tree could be peeled off by a qualified arborist so as to determine whether or not evidence of carving is present, hence making a more accurate determination of whether the marks on the tree relate to carving, or are a combination of ringbarking marks and natural erosions into the heartwood.
    - If the presence of carving can be more accurately determined, then the potential presence of burials can also be either be elevated or reduced accordingly.

    Should the carving appear to have been a likely feature of the tree, the following management would apply:

    - Seek the opinion of a suitably qualified Ground Penetrating Radar (GPR) technician or geomorphologist with appropriate experience in remote sensing technology, to make a decision as to whether GPR is likely to be effective in the identification of a burial within a c. 50 m radius of the tree (effectiveness is dependent on soil types, saturation, etc.). As research indicates the carving on the tree will be facing towards the burial if it is present, it is considered that a 180º sweep of the GPR should be adequate coverage, although a larger area may be assessed if desired.
    - If GPR is employed and a positive result is forthcoming re the likelihood of a human burial, then further community consultation will be required to inform all stakeholders of this result and then the following procedures should be employed:
        - Formal archaeological excavation for human remains should be employed over the area suspected of containing the burial for the exhumation of the remains. Police will be required to be notified and a formal determination made of the age of the remains to ensure they do not date to the last 100 years.

  - The remains should then be managed in accordance with the wishes of the Aboriginal community. This is likely to require ceremony and reburial at a nominated location.

- If GPR is not considered an effective tool for the identification of a burial location, or if the GPR results indicate no specific location as producing a likely signature for a burial, then the following ground surface disturbing works should be undertaken to physically determine the presence or not of human remains.

  - A grader should be employed to strip off layers of soil, 5 cm at a time, within a 50 m radius of TGP-ST7. This should be undertaken in the presence of Aboriginal community representatives and/or an archaeologist who can inspect each pass of the grader for any evidence of human remains or other archaeological material. Sieves may be used to assess windrowed soil should there be concern that bone may be present within the removed deposits.

  - Once an area has been assessed in this manner down to deposits deemed to be too deep to contain an Indigenous burial then the area can be considered as clear of human remains.

- Once the issue of human remains as an inhumation has been settled, then focus can shift to the removal of the tree. The following techniques may be the most appropriate, but will require further consultation and input at the time of the development of the AHMP:

  - The exact method for the removal of this tree should be discussed by Alkane, the service provider for the tree removal, the Aboriginal community representatives and the archaeologist in a pre- tree removal meeting.
  - The likely methods may be to first use a cherry picker to assess the large hollow high up in the tree to ensure that no burial present. Although unlikely, Aboriginal community representatives did note that this was occasionally a location in which a burial may be placed.
  - Once sure that no burials are present, the upper branches can then be removed by an appropriately qualified operator.
  - Once the trunk is shortened to an acceptable size, the tree may then be chain sawed at the base below the height of the scar and the final trunk portion can be transported to the location chosen by the Aboriginal community.

Should the carving appear to have been to have not been a likely feature of the tree, the following management would apply:

- A determination be made with community representatives as to the likelihood of it being a scarred tree;
- If it is a scarred tree then it would need to managed as per other scarred trees within the project area that are to be impacted (ST10);
- If is not thought to be a scarred tree and carving has been discounted, then no further management will apply.

3. Site TGP-ST10 is a possible scarred tree located within the footprint of Waste Rock Emplacement 3. As TGP-ST10 cannot be avoided, management for the removal of this tree is required. Depending on the wishes of the Aboriginal community, the scarred portion of this tree may be removed to a keeping place to be determined.
4. Site TGP-OS1 should not be directly impacted by the TGP access track and could be managed through fencing off the northern gate area into the access track to the Mine Site. This very small eroded site is located west of this gate and if a temporary fence is erected while the access track is being constructed, it should ensure that no construction vehicles access this area.
5. Sites TGP-ST8 and 9 are scarred trees close to the Newell Highway and in proximity to a proposed visual amenity bund between Wyoming One Open Cut and the Newell Highway. To ensure these trees are not damaged by works in the area, they should be fenced off around the drip line for the construction period.

16.1.2 TNWP Study Area

1. TNWP-OS1 with PAD. The test excavations established that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between down to natural sediments in either stratigraphic layers, if these can be discerned, or using artificial spits of 10 cm to begin with and 20 cm if results are limited. The results of the test excavation pits). These artefacts are likely to be in the top 20cm of soil. In light of this, the following recommendations are made in relation to the construction of the TGP water pipeline:
    a. When the water pipeline is excavated in the area of TNWP-OS1 with PAD, a suitably qualified person from the Aboriginal community should be in attendance to monitor the excavation and to retrieve any further Aboriginal artefacts;
    b. Care should be taken when excavating in the vicinity of TNWP-OS1 with PAD to ensure minimal disturbance to the ground surface beyond what is necessary to lay the pipeline;
    c. Cars and machinery should, as much as is practical, be confined to the dirt road when in the vicinity of TNWP-OS1 with PAD;
    d. Any soil excavated for the water pipeline should be replaced in the area and not removed to some other location;
    e. Should significant numbers of Aboriginal artefacts (i.e. a cluster of 100+ artefacts) be noted during construction, work should cease and the OEH Dubbo office (02 6841 0900; 8:30am–4:30pm, Monday–Friday) should be notified on how to best proceed; and
    f. Should human skeletal material be noticed, all work should cease and the local police contacted. If the skeletal remains are deemed to be historical, OEH and the Narromine LALC should be contacted to determine how to best proceed.
6. All recorded scarred trees along the TNWP route are able to be avoided by project impacts. These sites should be identified in the field prior to any impacts occurring and a suitable curtilage (around the drip line of the tree) delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction for the project.
7. The corner of land between Tomingley West Rd, Gundong Creek and the Narromine Road has been identified as a possible camping spot (amongst others) for Aboriginal families in

the late 1800's and early 1900's. Scarred trees have been recorded in this area, as they have in most areas of significant remnant bushland over the local area. As a precautionary measure, it is advocated that the proposed section of pipeline that runs through this area should be monitored by members of the local Registered Stakeholders during construction. Should material potentially relating this camping be uncovered, works would need to cease in that area while an analysis of the material and its significance was undertaken.

16.1.3 PHTETL Study Area

1. PHETL–ST1, ST2 and ST3 can all be avoided. These sites should be identified in the field prior to the commencement of any disturbance and a suitable curtilage delineated around them with high visibility fencing to ensure no inadvertent impacts occur during construction for the project.

2. For any additional impacts, e.g. new access tracks or any changes to the assessed easement, Alkane should ensure that previously avoided sites remain so and that if impacts are proposed to unassessed areas, appropriate Aboriginal heritage assessment is conducted prior to construction.

16.1.4 General

1. Staff and contractors should undergo cultural heritage inductions alerting them to the location of recorded cultural heritage sites within the Study Area and to their legislative protection under the NPW Act. These inductions should be recorded in a register, with all those present signing their complicity with these guidelines and a Conservation Environmental Management Plan (CEMP).
2. Should the proposed impact footprint change, Alkane must take care to ensure that sites currently avoided by the TGP remain undisturbed, and that impacts remain within previously assessed areas. Should impacts be altered, revision may be needed for the management measures proposed.
3. Should any previously unidentified 'objects' or other Aboriginal sites (such as burials) be uncovered during the course of construction, work in that area should cease and the DECCW Western Regional Archaeologist (Dubbo Office) and local Aboriginal community be contacted to discuss how to proceed.

16.2 EUROPEAN HERITAGE

Three of the eight identified European heritage sites would be directly disturbed, being sites TGP-HS4, TGP-HS5 and TGP-HS6.

1. TGP-HS4 is a coin found within the Wyoming One Open Cut area. This has already been collected for safekeeping.
2. TGP-HS5 agricultural machinery is of low local significance, comprising common rural remains that are much damaged. Before being removed, the following should occur:
    - archival recording through photography should be undertaken to document them in detail; and

- further consultation with local landholders should be undertaken to try to obtain any knowledge that may be associated with this machinery.

3. Site TGP-HS6, the remains of a dwelling and associated material that may include some *in situ* deposits with relics beneath the mounded bulldozed material, is located within the Waste Rock Emplacement 3 Area. Further research through landholder consultation indicates these remains may be *in situ*. If avoidance of this site is not possible, the following management should be undertaken.

    - If *in situ*, assessment and archaeological investigation according the *Historical Archaeology Code of Practice*, published by the Heritage Office, Department of Planning (2006) and the Australia ICOMOS *Burra Charter* as 'good heritage practice' should be undertaken, with a possible eventual need to undertake limited excavations at the site so as to determine more about it and hence make a more informed assessment of its significance.

4. TGP-HS1, TGP-HS2 and TGP-HS3 are beyond project impacts and Alkane must take care to ensure they remain conserved within the parameters of the TGP.

5. The surveyors trees TNWP-HS1 and TGP-HS2, are located within the proposed water pipeline easement but would not be impacted by the pipeline construction. Alkane should ensure these trees are fenced off during construction to ensure no inadvertent impacts occur.

6. The management and mitigation measures proposed for historic heritage should be encapsulated into the CHMP for the project, to ensure that heritage slated as conserved within the project boundaries remain so and that additional investigations in relation to site HS6 are undertaken prior to this site being impacted.

17. REFERENCES

Aborigines Protectorate. 1912-13. Correspondence re: Bulgandramine School.

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APPENDICES

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Appendix 1	**Plates**
Appendix 2	**Aboriginal Community Correspondence**
Appendix 3	**Log of Aboriginal Community Consultation**
Appendix 4	**Site Type Definitions**
Appendix 5	**Tomingley Gold Project Water Pipeline: Archaeological Test Excavation at site TNWP-OS1 with PAD, March 2011**

Note: Copies of Appendices 2, 3, 4 and 5 are provided on the Project CD

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