Appendix 9

Aboriginal Heritage Assessment
prepared by Archaeological Surveys and Reports Pty Ltd

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DARRYL MCCARTHY CONSTRUCTIONS PTY LTD

ABN: 86 001 646 028

Aboriginal Heritage Assessment

Prepared for:

R.W. Corkery & Co. Pty Limited
1st Floor, 12 Dangar Road
PO Box 239
BROOKLYN NSW 2083

Tel: (02) 9985 8511
Fax: (02) 9985 8208
Email: brooklyn@rwcorkery.com

On behalf of:

Darryl McCarthy Constructions Pty Ltd
PO Box 246
Tenterfield NSW 2372

Tel: (02) 6736 1988
Fax: (02) 6736 1385
Email: dmccarthy@nqq.com.au

Prepared by:

Archaeological Surveys & Reports Pty Ltd
16 Curtis Street
ARMIDALE NSW 2350

Tel: (02) 6772 6512
Fax: (02) 6772 4567
Email: japples@northnet.com.au

July 2014

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The archaeological assessment of the potential for sites of Aboriginal cultural significance to be present on the site of proposed extensions to DOWE'S QUARRY, north of Tenterfield, Northern Tablelands, NSW

John Appleton

ARCHAEOLOGICAL SURVEYS & REPORTS PTY LTD

APRIL 2014

ASR No. 557/14

For

R.W. CORKERY & CO. PTY LIMITED

on behalf of

DARRYL McCARTHY CONSTRUCTIONS PTY LTD

**This report has been compiled in 'Plain English',
but presented in a format suitable for developing policies
for the management of the cultural resources,
and as a basis for scientific reference
in future research studies.**

Project No. 557/14

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TABLE OF CONTENTS

APPENDICES 49

FIGURES

TABLES

IMAGES

EXECUTIVE SUMMARY

This assessment was performed for R.W. Corkery & Co. Pty Limited (RWC) which has been engaged by Darryl McCarthy Constructions Pty Ltd (DMC) to prepare an Environmental Impact Statement for proposed extensions to its existing operations at Dowe's Quarry, north of Tenterfield, off Mount Lindesay Road, in northern New South Wales.

RWC engaged Archaeological Surveys & Reports Pty Ltd (ASR) to undertake an archaeological assessment of the site to identify any items, artefact sites or places of Indigenous cultural significance that might present a constraint to the proposed extensions; and in the event that any items, sites or places are identified to identify the available management options; and to recommend the preferred option; and once the client has decided which option to adopt, to prepare the necessary documentation required for that option.

The area to be assessed comprises parts of Lot 239 DP751540; Lot 260 DP751540; Lot 308 DP751540; 751540; Lot 309 DP 751540; Lot 3 DP42044 and Lot 4 DP42044, in the Parish of Tenterfield; County of Clive; and in the Tenterfield Shire Council government area. The total area of the site to be assessed is 10ha of which 3ha are existing areas of disturbance comprising the extraction area, the internal road, stockpile of clay fines, dam, collection drain and overburden stockpile.

No objects, sites or places of Indigenous cultural significance were found; nor was any additional information forthcoming from the Aboriginal stakeholders.

In the absence of artefactual material or identification of the Project Site as being a place of Aboriginal cultural significance there is nothing to manage or avoid in the proposed works, however NSW OE&H has made the following recommendations in relation to any earthwork-operations as additional Statements of Commitment or as conditions of approval as appropriate:

1. If Aboriginal cultural objects are uncovered due to the development activities, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and Aboriginal community

representatives must be contacted to determine the significance of the object(s). The site is to be registered in the AHIMS (managed by NSW OE&H) and the management outcome for the site included in the information provided to the AHIMS. It is recommended that the Aboriginal community representatives are consulted in developing and implementing management strategies for all sites, with all information required for informed consent being given to the representatives for this purpose.

2. If human remains are located during the project, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police, the Aboriginal community and NSW OE&H are to be notified. If the remains are found to be of Aboriginal origin and the police consider the site not an investigation site for criminal activities, OE&H should be contacted and notified of the situation and works are not to resume in the designated area until approval in writing is provided by NSW OE&H. In the event that a criminal investigation ensues, works are not to resume in the designated area until approval in writing (*has been received*) from NSW Police and NSW OE&H.

3. All reasonable efforts must be made to avoid impact to Aboriginal cultural heritage values at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the Aboriginal community and NSW OE&H.

1. INTRODUCTION

1.1. Background to the project

This assessment was performed for R.W. Corkery & Co. Pty Limited (RWC) which has been engaged by Darryl McCarthy Constructions Pty Ltd (DMC) to prepare an Environmental Impact Statement for proposed extensions to its existing operations at Dowe's Quarry, north of Tenterfield, off Mount Lindesay Road, in northern New South Wales.

RWC engaged Archaeological Surveys & Reports Pty Ltd (ASR) to undertake an archaeological assessment of the site to identify any items, artefact sites or places of Indigenous cultural significance that might present a constraint to the proposed extensions; and in the event that any items, sites or places are identified to identify the available management options; and to recommend the preferred option; and once the client has decided which option to adopt, to prepare the necessary documentation required for that option.

1.2. The assessment area

The area to be assessed comprises parts of Lot 239 DP751540; Lot 260 DP751540; Lot 308 DP751540; 751540; Lot 309 DP 751540; Lot 3 DP42044 and Lot 4 DP42044, in the Parish of Tenterfield; County of Clive; and in the Tenterfield Shire Council government area. The total area of the site to be assessed is 13.5ha of which 3.9ha are existing areas of disturbance comprising the extraction area, the internal road, stockpiles of clay fines and crusher fines, three water storage dams, collection drains and overburden stockpiles.

Figure 1 is detail from a Topographic map of the general area showing the location of the Project Site; **Figure 2** is an aerial photograph superimposed with the study area boundary; **Figure 3** is detail from a cadastral map showing the cadastral footprint of the site, and **Figure 4** is a conceptual plan of the proposed layout.

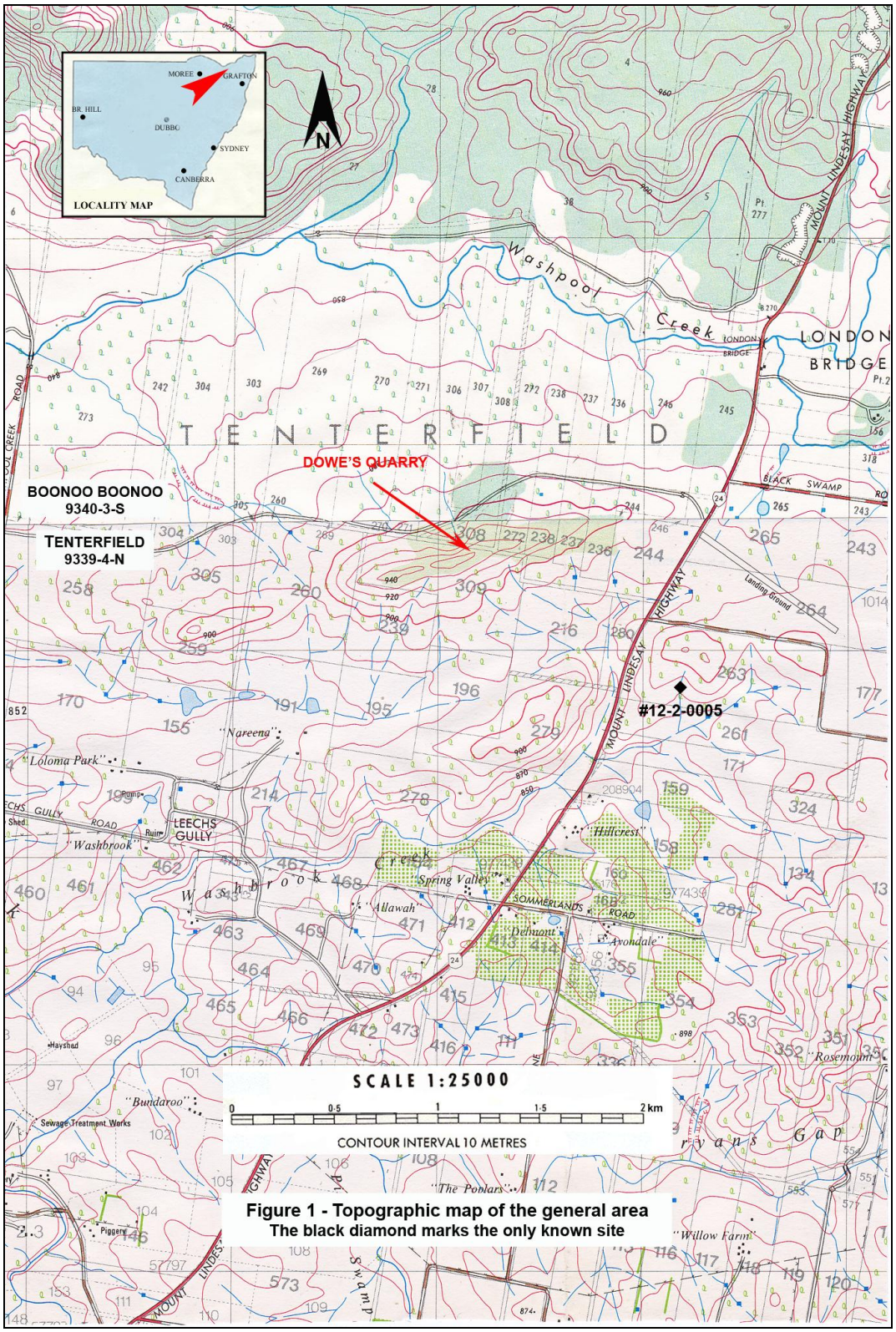


Figure 1 - Topographic map of the general area
The black diamond marks the only known site

Figure 2
STUDY AREA

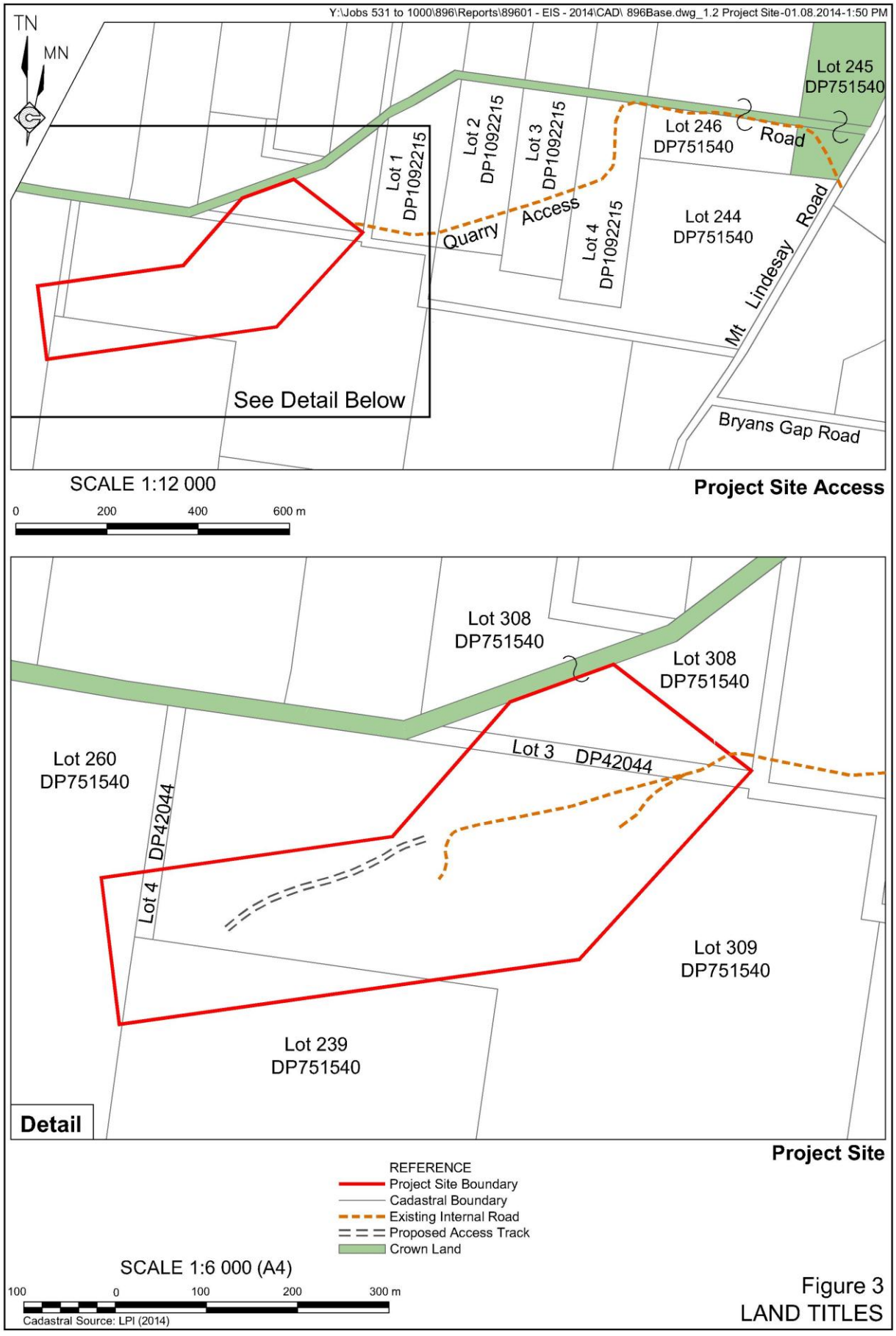


Figure 3
LAND TITLES

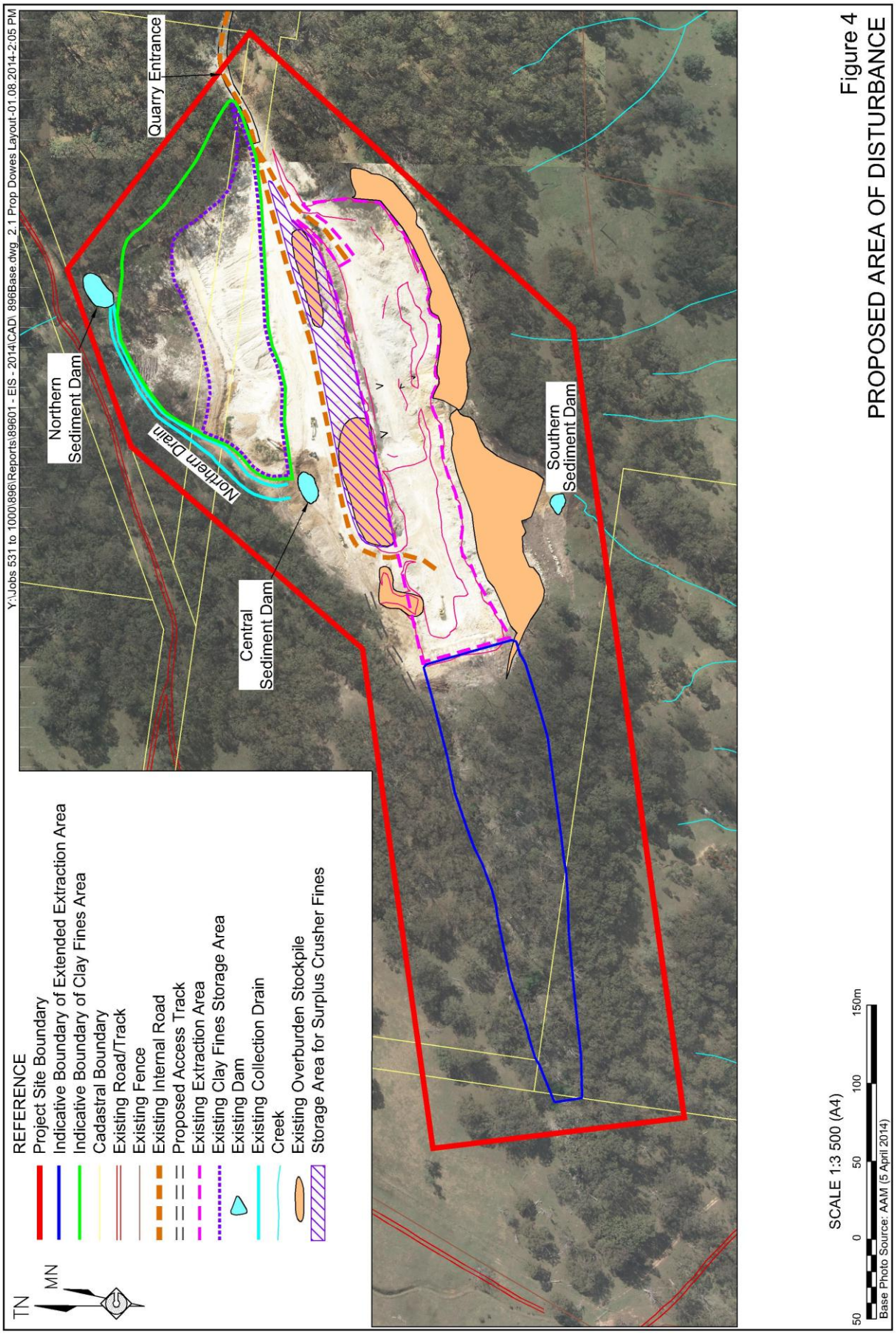


Figure 4
PROPOSED AREA OF DISTURBANCE

1.3. Potential impact from the proposed quarrying operations

The potential impact from the proposed quarrying operations will be that any alteration to previously undisturbed surface deposits has the potential to disturb or destroy any archaeological material or depositional contexts within the impacted areas; and any deliberately scarred or carved old growth trees will be destroyed.

As a consequence of this investigation it is unlikely that the same area will be surveyed again, thus from an archaeological perspective, the survey provided an opportunity to observe and record any sites that might be present, and to propose a strategy for the management of any known or potential archaeological and/or cultural material in the future development of the property.

1.4. Objectives of the investigation

In accordance with "Code of practice for Archaeological Investigation in NSW" (DECCW 2010) the objectives of the investigation are:

> "... to learn about past human societies through the study of material remains and historical, oral and environmental sources. Archaeological investigations locate, identify and study Aboriginal objects, archaeological deposits and potential archaeological deposits, and historical, oral and environmental sources to provide an assessment of the archaeological significance of the objects and the area".

1.5. Report structure

In accordance with the "National Parks and Wildlife Amendment (Archaeological Investigations) Regulation 2010" and "Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (Office of Environment & Heritage, 2011), with minor changes to the suggested structure and contents, the report is presented in the following format:

i Executive summary
ii Contents

1 Introduction
2 Codes of Practice
3 Aboriginal consultation
4 The archaeological record
5 The environmental context
6 Predictive model for site location
7 The site visit
8 The effective survey coverage
9 The results of the site visit
10 Analysis and Discussion
11 Significance Assessment
12 Impact Assessment
13 Management and Mitigation Measures
14 Recommendations

1.6. Proposed methodology

The proposed methodology for undertaking the assessment was to:

- Make a detailed study of the brief and supporting documentation to identify the known facts of the project and the results of any preliminary work undertaken by surveyors and other consultants.

- Undertake a search of the AHIMS (Aboriginal Heritage Information Management System) Site Register for known sites in the area

- Review any available information on any previous archaeological investigations in the area.

- Use the Topographic map to identify the topographic features and environments both in the project site and in the surrounding area.

- Use Metallogenic maps and Geological maps to identify the stone material underlying the top-soils in the survey area.

- Refer to Jeans (1986) and Charman & Murphy (1991) to identify soil types, vegetation types and environment types for the purposes of developing a Predictive Model for Site Location.

- Develop a Predictive Model for Site Location in the project site.

- Visit the site to identify any surface manifestations of the presence of archaeological material, and to identify any locations in which Potential Archaeological Deposits (PADs) might occur.

- Write a report of the results of performing the above and assess the potential for the presence of archaeological material likely to present a constraint to the proposed subdivision; and make clear and concise recommendations as to the preferred option for the future management and development of the project site.

- Consult with registered Aboriginal stakeholders with an interest in the Project Site.

- For that purpose distribute a draft copy of the assessment report to each of the registered Aboriginal stakeholders to give them the opportunity of providing any cultural information directly related to the Project Site.

- Compile Site Recording Forms for any sites found in the Project Site and forward them to NSW OE&H for the sites to be listed on the AHIMS Site Register.

- Recommend an appropriate management strategy for the avoidance, mitigation of impact, or if necessary the salvage of any archaeological material that will be impacted by the proposed subdivision.

- Advise the proponents as to their obligations under the "National Parks & Wildlife Act 1974" (as amended), "Code of Practice for Archaeological Investigation in NSW 2010" and the penalties that may apply in the event that any unauthorised 'harm' occurs to any sites or cultural objects located within the survey area.

2. CODES OF PRACTICE: NSW OEH REQUIREMENTS FOR ARCHAEOLOGICAL ASSESSMENTS AND INVESTIGATIONS

Recent legislated amendments to the National Parks and Wildlife Act 1974 (as amended), and the introduction of Codes of Practice, and Due Diligence, have established new procedures for how archaeological assessments should be undertaken and reported; and re-defined the procedure to be followed in consulting with Aboriginal stakeholders. These are briefly summarised below.

2.1. "Code of Practice for Archaeological Investigation in NSW 2010".

The purpose of *National Parks and Wildlife Act 1974, Part 6* – "Code of Practice for Archaeological Investigation in NSW" is twofold:

- To establish the requirements for undertaking test excavation as part of archaeological investigation without an AHIP (Aboriginal Heritage Impact Permit for Section 90 Consent to destroy by salvage).
- To establish the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made.
- The Code is applied **when further investigation** (such as subsurface investigation) is necessary, and when the proposed activity will be undertaken to support a **development application** under the *Environmental Planning and Assessment Act 1979*.

2.2. "Due Diligence Code of practice for the Protection of Aboriginal Objects in NSW 2010".

The purpose of this code of practice is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine

whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (**AHIP**).

If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an **AHIP** will be required.

"*If you have followed this code and at any point have reasonably decided that an AHIP application is not necessary either because Aboriginal objects are not present or, if they are present, harm to those objects can be avoided, you can proceed with caution.*

If, however, while undertaking your activity you find an Aboriginal object you must stop work and notify OE&H and you may need to apply for an AHIP. Some works may not be able to resume until you have been granted an AHIP and you follow the conditions of the

AHIP. Further investigation may be required depending on the type of Aboriginal object found.

If human skeletal remains are found during the activity, you must stop work immediately, secure the area to prevent unauthorised access and contact NSW police and OE&H" (DECCW 2010).

2.3. "National Parks and Wildlife Amendment (Archaeological Investigations) Regulation 2010".

The amendments provide detailed procedural instructions for how sites should be recorded and how investigations should be reported in order to provide consistency and transparency in archaeological investigations. The Aboriginal consultation undertaken for this project is in accordance with the new standards, and the report has been structured as per the new directive, only minor changes having been made to the recommended sequence of "chapters" to provide a more logical sequence.

2.4. "Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (Office of Environment & Heritage, 2011).

A guide to the procedure for investigating, assessing and reporting on Aboriginal Cultural heritage. This procedure was released in April 2011.

3. INDIGENOUS ISSUES

3.1. Aboriginal Consultation

On 21st March 2014 letters were sent to the following departments and agencies: Planning and Aboriginal Heritage Section - Northeast (OE&H); National Native Title Tribunal (NNTT); Moombahlene Local Aboriginal Land Council (LALC); Tenterfield Shire Council; NTSCorp; NSW & ACT Registry; Northern Rivers CMA; and Office of the Registrar, ALRA, requesting

that they provide lists of registered Aboriginal stakeholders for the area. A copy of an example of the letter, and the search form for NNTT are included as **Appendix i**. Northern Rivers CMA has previously advised ASR in other projects that it should not be included as an addressee in providing a list of Aboriginal stakeholders but as the guidelines require that CMAs should be included as an addressee it was included in this project to comply with the guidelines.

Also on 9th April 2014 an advertisement was placed in "*Tenterfield Star*", inviting all Aboriginal stakeholders with an interest in the project to register their interest. A copy of the advertisement as it appeared in the newspaper is included as **Appendix ii**.

As a result of the responses from the government departments and agencies and to the advertisement the following registered stakeholders were identified.

STAKEHOLDER	CONTACT	DETAILS
Kwiembal Elders Indigenous Group	Chairperson	21A Dudley Street, Ashford 2361
Natalene Mercy		6 Bando Street, Gunnedah 2380 Mob: 0457 617 117
Ngoorabul Elders	Chairperson	PO Box 157, Glen Innes 2370
Moombahlene LALC	Chairperson	299 Rouse St. PO Box 70 Tenterfield 2372. Tel. 02 6736 3219; Email: moombahlenelalc@bigpond.com

Table 1 – List of registered stakeholders.

In its response to the enquiries the Office of the Registrar, ALRA advised that its records did not list any Registered Aboriginal Owners. The National Native Title Tribunal advised that there were no stakeholders registered in the National Native Title Register, nor were there any Native Title Claims, nor Unregistered Claimant Applications, or any entries in the Register of Indigenous Land Use Agreements with regard to the Project Site.

In its response Tenterfield Shire Council attached a copy of Council's Aboriginal Heritage Study. The study titled, "Tenterfield LGA Aboriginal Heritage Study" [TLAHS] (Australian Museum Business Services [AMBS] 2013) was commissioned by Council to provide it with the

information for, "the future management of Aboriginal cultural heritage within the existing relevant New South Wales and Commonwealth Statutory frameworks".

The study was based on several tasks:

- Consultation with local Aboriginal groups, in accordance with Council requirements,
- Preparation of a thematic history of the LGA, with particular emphasis on Aboriginal history,
- Identification and recording of those Aboriginal heritage places within the LGA in accordance with the wishes of the local Aboriginal community,
- Recording information obtained during the Aboriginal Heritage Study,
- Development of management policy and recommendations (AMBS 2013, p.2)

Significantly the comprehensive consultation process involved 19 Aboriginal parties identified as likely to have an interest in the TLAHS including six different Local Aboriginal Land Councils.

The TLAHS report was adopted by Council Resolution 139/13 of 24 April 2013.

Page 39 of the TLAHS listed all those areas of Aboriginal heritage sensitivity within Tenterfield LGA referred to in the thematic history. The list of 28 places included "Leech's Gully Reserve", also known as "Tenterfield Aboriginal Reserve".

In 1997 The Department of Community Services commissioned a project "Connecting Kin" to help both Aboriginal and non-Aboriginal people separated from their families. In 1883 the Aborigines Protection Board was established to manage reserves for the estimated 9,000 Aboriginal people in New South Wales at that time. By 1939 there were over 180 reserves in New South Wales. "Connecting Kin" lists all of the reserves and provides a very brief history for each (Thinee & Bradford 1998).

"Leechs Gully Reserve", or "Tenterfield AR 86307" was located in the Parish of Tenterfield, County of Clive, and operated from 9th June 1967. The TLAHS states that, "under the Aborigines (Amendment) Act 1973, freehold title and mineral rights to all existing Aboriginal reserves in NSW were transferred to the Aboriginal Lands Trust (NSW Government State Records 2010"). The reserve at Leechs Gully was revoked in 1974 (TLAHS 2013, 30).

Leechs Gully is located over 1km to the southwest of the project site and therefore will not be impacted by the proposed quarrying operations. No other sites or places of Aboriginal cultural interest occur within the area represented in **Figure 1**.

Copies of all responses received from the government departments and agencies are attached as **Appendix iii**.

There is no requirement in the "Code of Practice for Archaeological Investigation in NSW" for Aboriginal participation in the field inspection when undertaking an archaeological assessment, however the Code of Practice of the Australian Association of Consulting Archaeologists Inc. (AACA) requires that there should be Aboriginal consultation for all investigations in New South Wales (which includes assessments). In order to comply with this requirement a draft copy of this report was sent to each of the registered Aboriginal stakeholders by **registered post** on **4TH June 2014** requesting that they review the report, and provide any cultural information directly relevant to the Project Site for consideration in the final assessment within the 21-day period stipulated in the guidelines.

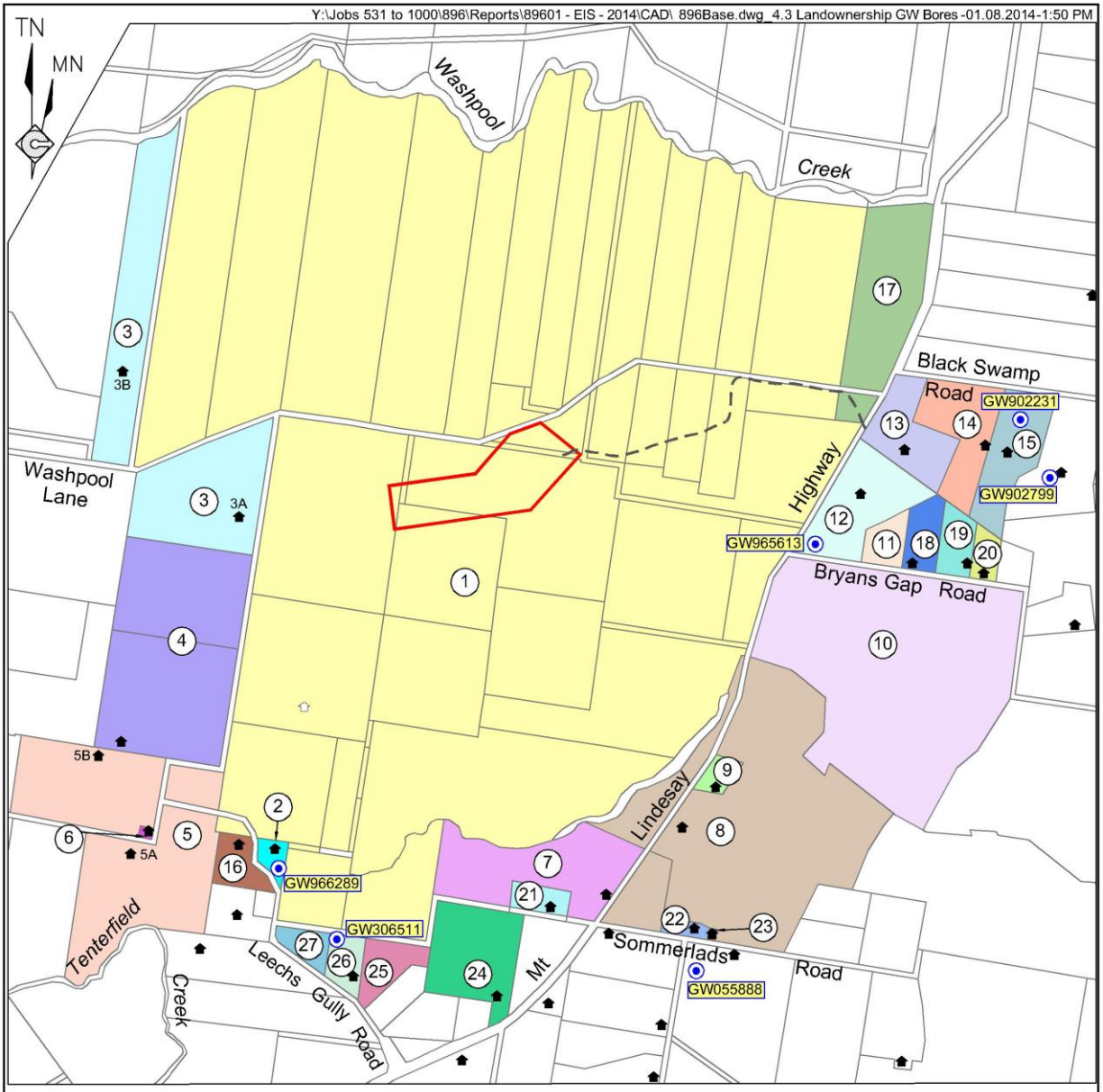
Only one response was received and that was from Natalene Mercy, 26 days after the draft reports were sent out. A copy of her email is included as **Appendix iv**.

3.2. Land Claim No. ALC32071

Figure 5 displays the land ownership within and surrounding the Project Site. The quarry access road traverses a property that abuts Mount Lindesay Road (the green property Ref. 17 in Figure 5), Lot 245 DP751540, which is owned by The State of New South Wales (Crown Land).

The property is a designated Travelling Stock Reserve (TSR), however this property is subject to an Aboriginal Land Claim which was lodged on 15th October 2010 – *Land Claim No. ALC32071*.

RWC has consulted with Crown Lands regarding the land claim and been advised that based on the provisions of *Section 75* of the *Local Land Services Act 2013*; and given that the road in question was in use prior to lodgement of the land claim (refer to *Section 36* of the *Aboriginal Land Rights Act 1983*), it is likely that it will not be claimable Crown Land.



Ref	Landowner	Ref	Landowner
1	RSH & MO Dowe	14	GM O'Reilly, MP Watt
2	J-P Jacquet, MJ Bielski	15	WH & GM Cooper
3A,3B	Vibrato Investments Pty Limited	16	PA & KM Willis
4	RL Caldwell	17	The State of New South Wales
5A,5B	GL & JM Smith	18	MP & CA Moore
6	DB Weir, GR Smith, WF Marsden	19	GB & DK Phillips
7	SJ & JM Martin	20	CA Jackson, D Bunic
8	RB & CA Sewell	21	DM & AJ Mullins
9	MJ & NJ Lewis, RB & CA Sewell	22	JP & SL Doyle
10	KR & LA Willcocks	23	LD Merchant
11	JK & HJ Ingram	24	Harewood Investments Pty Limited
12	TE Barratt (Jnr), NL Bush	25	D Puglisi
13	IM Ibbett	26	JE Ferguson
		27	D Parsons

REFERENCE
Project Site Boundary
Cadastral Boundary
Quarry Access Road
Residence (Project Related)
Residence (Non-Project Related)
(1) Landowner Reference (See Table)
GW965613 Groundwater Bore and Identifier

SCALE 1:25 000 (A4)

250 0 250 500 750 1000 1250 m

Cadastral Source: LPI (2014)
Landowner Source: Department of Lands Online Search - March 2014

Figure 5
LAND OWNERSHIP, SURROUNDING RESIDENCES AND GROUNDWATER BORES

4. THE ARCHAEOLOGICAL RECORD

4.1. AHIMS site search

On 26th March 2014, ASR made a search of the Aboriginal Heritage Information Management System (AHIMS: Site Register) for all sites within an area described by the AMG references Easting 405000-409000: Northing 6788000-6794000 (an area of 4 km west to east, by 6 km long north to south), centred on the survey area – see Section 4.2 following). Details of the results are included as **Appendix v**. Note that the listed map references are based on the Australian Geodetic Datum (AGD66), as is the Topographic map in **Figure 1**.

The listing showed that a single site had been recorded in the 24 sq.km search area represented by **Figure 1**. The site, a modified tree, was recorded in Leechs Gully; however, the map reference places it 2,400m to the northeast of Leechs Gully

4.2. The representativeness of sites on the AHIMS Site Register

One of the major problems with using the AHIMS Site Search results in constructing a predictive model for site location is that the absence of sites on the site register should not be assumed to be representative of the extant archaeological record.

Sites are usually only found when there are archaeological investigations for development, and so the distribution tends to represent only those areas that have been investigated. Also, artefacts are usually only found where there is good archaeological visibility at the time of the survey. Land use and the extent to which the surface deposits have been altered might also affect whether or not artefacts are observable.

Not all archaeological investigations are of areas, but might be of strips of land for roads, communication cables, powerlines, gas pipelines, etc. And the technological changes that have occurred since 1974 (when the National Parks & Wildlife Act 1974 was enacted) have been seen in more detailed mapping, high resolution aerial photographs, the introduction of 1: 25,000 scale maps, more accurate site recording, and increased skills of archaeological consultants.

It should also be noted that the Aboriginal Sites Register has been transposed to different computer software programmes at least three times in the last 20 years and many transposition errors have occurred, with the result that many site map references are now erroneous and place the sites in locations many kilometres from where they were actually recorded. A transposition of one digit in a site reference can 'misplace' a site by up to 10,000m. Hence the location for the 'modified tree' in Leechs Gully which plots to over 2km away from where Leechs Gully occurs on the Topographic map (**Figure 1**) may be either a consequence of a transposition error on the part of the person posting the site details onto AHIMS; or it may be that the site reference was using a 1:250,000 scale Topographic Map and wrongly located the site on the map; or it may be that the site occurred in a location locally known as being in the Leechs Gully area, and that while the site location reference was correct the site was incorrectly named.

5. THE ENVIRONMENTAL CONTEXT

Any discussion of the likely presence of Aboriginal cultural remains or of the basis why such remains might be discovered must be within the context of the environment and the resources that would have been available to any Aboriginal occupants of the area.

5.1. The general geology and topography

The Project Site occurs on the crest and upper slopes of a steep, narrow ridge of quartzose material (the term quartzose applies to sedimentary rocks composed primarily of quartz particles). The ridge is a western outlier of the Great Dividing Range the spine of which is less than 10km to the east of the Project Site.

The Project Site straddles a northeast/southwest trending steep-sided ridge, bracketed by creek-valleys to north and south. The southern valley has been formed by numerous drainage depressions that drain into Tenterfield Creek 2km to the west of the Project Site. The northern valley has been formed by Washpool Creek that flows east to west.

Washpool Creek joins Tenterfield Creek 3.5km to the west of the Project Site and then continues westwards becoming Dumaresq River (forming part of the New South Wales/Queensland border), and eventually becoming Macintyre River west of Goondiwindi.

Elevations vary from approximately 950m AHD along the crest of the ridge, down to approximately 920m AHD on the northern and southern slopes; and down to 890m AHD at the extreme end of the study area. There are no distinct drainage depressions within the site and any surface water is rapidly discharged over the steep slopes which retain only a very shallow A Horizon – **Image 14** following shows the ground surface stripped of groundcover and soil by ants exposing a surface of angular metasedimentary rubble.

5.2. Vegetation (and potential food resources)

As **Figure 2** shows the site is occupied by dry eucalypt woodland/forest comprising Stringybark, Box and smooth-barked eucalypts. On the southern slopes Stringybark-regrowth predominates and there are few old-growth trees; while on the northern slopes the mix is much more even and more open, but whereas the upper slopes and middle slopes are dominated by regrowth the downslopes outside the Project Site boundary are dominated old-growth trees. However the ridge supports the greatest mix of the three species with smooth-barked old-growth eucalypts predominant. There are also a number of very old tree stumps along the ridge that attest to old logging events, while near the northern dam in the north-western corner there are a number of more recently logged trunks awaiting transportation to a mill.

These environments would have been a potential source of a variety of food resources available both on the ridges and slopes and along the drainage depressions. Such resources available to the Aboriginal people of the area would have included kangaroos, koalas, gliders, possums, snakes, goannas and skinks, and swamp wallabies, as well as many bird species. Also the hollow-trunked Box gums would have housed "sugarbag" or native bees' honey; snakes, goannas, small birds and birds eggs, and bats. The understorey would have contained berries, seeds and leaves, both for sustenance and for treatment of sickness. While these resources have probably been available for at least the last five thousand years they would have only ever been in limited supply and insufficient to support all but a few people for a short period.

5.3. Water resources

As described previously the Project Site occurs on a steep-sided ridge and so no run-off would be retained within the Project Site. The most reliable water source was Washpool Creek 1,000m to the north; and to the less reliable Washbrook Creek 1,000m to the south, and Tenterfield Creek 1,700m to the south. Washpool Creek was flowing at the time of the field visit but as the region has been suffering from drought it is possible that the creek will be "dry" within a week or so. It was noticed that the granite bedrock at London Bridge had been mechanically grooved to channel any flow still available into pools, and as this section is a Travelling Stock Reserve it is probable that the pools are for travelling stock. Such desperate measures to harness the little flow there is underlines how unreliable the creek is as a water source.

The absence of reliable water may have been the primary reason why Aboriginal people may have avoided the area of the Project Site other than for searching out alternative food sources or for crossing through the area between Washpool Creek and Washbrook Creek to the south, although the route taken by Mount Lindesay Road would have been a more direct route and one easier to travel with a group that would have included both very young and very old people.. The unreliability of a water source meant that the site was not a location in which people camped or spent much time.

5.4. Stone resources

As described previously the Project Site occurs on a quartzose ridge - the term quartzose applies to sedimentary rocks composed primarily of quartz particles. However, the quartz is not the kind that might be knapped into tools or weapons, and there was no stone anywhere within the Project Site that would have been suitable knapping material. If there are any stone artefacts in or on the Project Site they were manufactured from material sourced elsewhere.

5.5. Previous impacts

Mention has already been made of the early phase and more recent phase of logging, and from the amount of regrowth on the lower slopes, particularly on the southern slopes, the vegetation was cleared perhaps 20 years or more ago to improve pasture**.** There are also the

immediate impacts such as the quarry pit from rock extraction, the internal access road, the fines dump and the overburden stockpile, as well as the drains and dams (**see Figure 4**). Also within the site there is a log stockpile area near the northern dam, and a road running from the quarry entrance round behind the log stockpile and leaving the northern boundary.

Figure 3 shows the western half of the site shrouded in woodland but in reality this is open woodland with overlapping canopy from the ridge down to the lower slopes, and beneath the canopy very little understorey has survived cattle grazing. The digital image record following **Table 4** shows the extent to which the canopy conceals past impacts...

6. PREDICTIVE MODEL FOR SITE LOCATION

Archaeological investigations and assessments are scientifically structured and in part are based on "ground proofing" of a Predictive Model for site location developed on the distribution and density of known sites (as listed on the AHIMS Site Register), the availability of resources such as stone suitable for quarrying for material to shape into tools and weapons; and potential food resources; the proximity of portable water; shelter; level, elevated, dry terrain suitable for camp sites; and archaeological visibility. The results of the research and the site visit are then addressed in terms of how they compare to the Predictive Model and analysed, particularly in so far as they are representative of the actual archaeological record.

6.1. Site types and their location

In order to design an investigative strategy it is firstly necessary to develop a predictive model for site location. This is not to determine where the investigation should be conducted, but to establish a theoretical model for the distribution of archaeological material against which the effectiveness and subsequent analysis of the survey results can be tested, compared and reasoned. The basis upon which the predictive model is derived must however be one of consideration of which archaeological material might realistically be expected to not only be present, but also detectable.

The first objective of any archaeological investigation must be to observe and record sufficient of the archaeological record that is present to be able to propose that it is representative of the record as a whole. The investigative strategy is therefore directed and designed to detect that

which is representative of the record in the particular study area, and naturally, as different study areas will comprise variations in environment, vegetation, topography, etc., so the investigative strategy must be designed to best suit the circumstances. The objective must be to detect material evidence, and so it is necessary to consider the extent to which artefactual material may be present, and the degree to which it is visible or might be discovered.

There are several factors, which are likely to affect, firstly, where Aboriginal people are most likely to have been, secondly, where they have left evidence of their activities, and thirdly, the degree to which that evidence is observable in the present record.

People visited places mainly to obtain resources, and in general places that were richest in resources were more likely to have been visited by people than those places with fewer resources. Important resources were permanent water, ephemeral water, food resources, stone raw material sources, shelter (from sun, wind, and rain), and perhaps suitable surfaces for rock art, and proximity to mythological natural features. Those resources may have been a factor in the suitability of a location for particular ceremonial activities but cultural boundaries also influenced the choice of ceremonial grounds. Alternatively, sites frequently occurred along preferred access routes and particularly where that route coincided with a watercourse.

However, the attractions of such an environment frequently resulted in the archaeological record becoming discontinuous or significantly disturbed, as stock and vehicles impacted upon it in the post-European contact phase.

Frequency of visits and use of particular locations was also determined by the 'accessibility' or freedom from environmental constraints in the area. For example, whether there were alternative, preferred or easier ways to travel around or over natural barriers, be they geological, geographical, cultural, or imposed by fauna or flora, or whether they were only seasonally accessible, such as mounds on flood terraces, or the availability of water during periods of drought, or whether or not floods, fire or snow hindered access.

Few past Aboriginal activities are represented by surviving material evidence. This in part is because many activities did not leave material evidence (e.g. tools were reused or were not manufactured from a durable material), but it is also because very little cultural material survived. An exception to this was shellfish, which was very durable.

The survival of material that is durable was also affected by recent European land use. Cultivation has destroyed many archaeological sites. However, cultivation can also help expose sites that might otherwise be covered. This brings us to the other important point about site distribution, which is that to a great extent site distribution recorded by archaeologists reflects the distribution of places where the ground surface is sufficiently eroded to expose artefactual material.

By far the majority of recorded sites have been stone artefact scatters or isolated stone artefacts, and in the vast majority of sites they were found in one or more of the following contexts:

i) On or adjacent to deposits containing quartz, quartzite, jasper, silcrete, chert, chalcedony, metamorphosed greywacke, and other indurated or siliceous sedimentary rocks, or redeposited fine-grained volcanics, or
ii) On river banks or adjacent to river banks where the watercourse contains river pebbles of quartz, quartzite, jasper, silcrete, chert, fine-grained volcanics, basalts, etc., and particularly at the junctions of watercourses, or
iii) On ridges and spurs overlooking watercourses or on high vantage points affording uninterrupted views of swamps, water holes, saddles, passes, and any other likely access path into the observer's area, or
iv) In the vicinity of outcrops of suitable raw material such as basalt, silcrete, chert, or other highly silicified sedimentary rock.

Other site types do occur and perhaps because of their lower and less predictable profile, are present in far greater numbers than we are aware of. People died but there are few recorded burials. One reason may be that in many instances the soils are too acid for the preservation of bone, but a far more likely reason is simply that burial frequently entailed subsurface internment, and a surface survey will only discover a burial where there has been erosion of significant disturbance to the surface deposits. As a consequence many burials have only been discovered when exposed by erosion of a sand body or river terrace, or in newly graded tracks.

Other site types such as carved trees, scarred trees, stone arrangements, Bora rings, etc., may once have been present, but are unlikely to have survived in easily accessible country from the attention of non-indigenous people. Thus, much of what might have existed is now lost or destroyed, and the archaeological record has become biased by the post-contact

utilisation of resources, and by the selective exploitation and preservation of particular environments. Other factors which affect the degree to which sites are recorded during an investigation include the time of year at which the fieldwork is performed (the seasonality of some vegetation growth) and the conditions under which the survey is performed – (wet, dry, cold, windy, poor light, etc.) – and the ability, the efficiency and the thoroughness of the investigators.

A brief description of site types such as isolated artefacts, open scatters, camp sites, knapping floors, quarries, middens, mounds, hearths, carved trees, scarred trees, stone arrangements, Bora rings, burials, engravings, paintings, grinding grooves, occupation deposits (and PADs), and ceremonial and mythological sites is included as **Appendix vi**.

6.2. A predictive model for the survey area

Based on the information provided by the Topographic map (**Figure 1**) and the Google image (**Figure 2**) and the Metallogenic map for the region the following model for site distribution was proposed for the survey area which does not contain any reliable water source or useful stone material; or exposed sandstone surfaces that might have been used for sharpening stone axes, or have been engraved; nor does it contain any overhangs or shelters; and has been stripped of all old growth vegetation.

- Isolated artefacts may be present, but if they are they are most likely to occur randomly in disturbed contexts and will only be found opportunistically.
- Low-density artefact scatters are unlikely to be visible if present.
- It is highly unlikely there will be any shell-midden remains.
- It is highly likely there will few surviving old-growth trees, and therefore -
- It is unlikely there will be any scarred or carved trees.
- There will be no art sites, engravings or occupation deposits.
- There will be no axe-grinding grooves.
- There will be no quarries.
- There will be no visible burials
- There will be no Bora rings.
- There will be no stone arrangements
- There is no known Aboriginal association with the Project Site.

In summary, the only sites likely to be present if at all are isolated artefacts. The table following is constructed on 'before' and 'after' information. The "site type likely to be present' column was based on the Predictive Model for site location before the field investigation the 'found' column represents the results of the field investigation.

SITE TYPE	PRESENCE OF POTENTIAL CONTEXT	SITE TYPE LIKELY TO BE PRESENT	SURVEYED FOR	FOUND
ISOLATED ARTEFACT	YES	POSSIBLE	YES	NO
ARTEFACT SCATTER	YES	POSSIBLE	YES	NO
SCARRED TREE	NO	POSSIBLE	YES	NO
CARVED TREE	NO	POSSIBLE	YES	NO
MIDDEN	NO	NO	NO	NO
BURIAL	NO	NO	NO	NO
MOUND	NO	NO	NO	NO
SHELTER	NO	NO	NO	NO
NATURAL WELL	NO	NO	YES	NO
QUARRY	NO	NO	YES	NO
GRINDING GROOVES	NO	NO	NO	NO
ENGRAVINGS	NO	NO	NO	NO
STONE ARRANGEMENT	NO	NO	YES	NO
HEARTH/FIREPLACE	NO	NO	NO	NO
BORA RING	NO	NO	NO	NO
PAD	YES	POSSIBLE (but see earlier ref. to PADS)	YES	NO

Table 2 - Showing the predicted likely presence of site types and the results of the field investigation.

Clearly some site types do not depend on the nearby presence of a natural resource, as for example stone artefacts, burials, Bora rings, burials and middens; while other site types do, such as for example shelters, engravings, PADs, scarred and carved trees.

Predictive Models for site location are based on the information taken from Topographic maps, geological maps, aerial photographs and the knowledge of the site type that might be present within such environments, but what those information sources cannot show are features less than 10m high or 10m across, and many site types are far less than 10m high.

7. THE SITE VISIT (Ground-proofing the Predictive Model)

7.1. The site assessment strategy (the sampling strategy)

It was clear from the aerial photograph that there would be access to all areas shown in **Figure 1**, and that as the Project Site was a relatively small area to assess the entire Project Site could be inspected.
In order to test the validity of the Predictive Model it was just as necessary to survey those environments and places where it was predicted sites would not occur, as it was to survey where it was predicted sites might occur.

7.2. Survey details

The field inspection was undertaken on 2nd April 2014, under a sometimes cloudy sky but in temperatures of 26° C, in conditions ideal for observing artefacts and modified trees. Appleton performed the site inspection alone and on foot.

All relevant observations as to the topography, vegetation cover, and conditions, were recorded with a Panasonic "Lumix" DMC-TZ7 Digital Camera, to record the character of the survey area, and to witness survey conditions. The entire site and surrounds were inspected on foot.

7.3. Survey methodology

The following digital images have been grouped for practical reasons. The survey commenced at the northern-western rim of current quarrying operations, and then moved to the west as far as a boundary fence, then returned further downslope, before zig-zagging down slope to the site boundary. The next section to the west of the above was similarly surveyed in a zig-zagging strategy to cover as much ground surface as possible. At the western end Appleton commenced the zig-zagging strategy across the end of the site, going eastwards then returning westwards etc. At that point it was clear that the lower slopes on the southern side were relatively less steep than the middle and upper slopes and that whereas the upper slopes was littered with boulders and rubble, the middle and lower slopes were less steep and were virtually rubble and boulder free. As a consequence Appleton decided to treat the upper

slopes and the middle and lower slopes as two distinct survey areas. He then commenced the same zig-zagging survey strategy on both of them.

The purpose of the zig-zagging strategy was to ensure that the sampling included those areas that might be subjected to minor impact from peripheral activities – such as fire-reduction clearing at some future date. Appleton also paid particular attention to any surviving old growth trees and to all areas where there was exposed bedrock or vehicle tracks.

Having completed the southern slopes Appleton proceeded to the eastern end of the site where there was a narrow cleared ridge that was used as a defunct equipment storage area.

From there Appleton crossed the internal access road and continued his inspection of the north-eastern corner of the site; the northern "logging" vehicle track, and the surrounds of the northern dam. He then returned to the start point.

Throughout the walk-over Appleton also examined areas of poor archaeological thereby providing a balanced search in both those places where artefacts where the predictive model indicated sites were most likely to occur, as well as those places where artefacts were least likely to occur.

7.4. Constraints to survey effectiveness.

Archaeological visibility varied significantly throughout the Project Site. Visibility was in excess of 80% along vehicle tracks and on the exposed bedrock, but conversely was zero where leaves, bark and twigs accumulated in hollows and swales. However as the most likely places where artefacts might be found were on the spines of ridges and along vehicle tracks (which followed the most accessible routes) the overall archaeological visibility was better than expected. There were no other constraints to an effective walkover of the Project Site.

8. THE EFFECTIVE SURVEY COVERAGE

The effectiveness of the site visit should be assessed in terms of the site types that might be present, and **Table 2** (pages 27 and 28) addresses the issue of whether the context in which the site type would occur was present, and to what extent the site type was likely to occur. It is

important to remember that much of the area would have been populated by dense wet eucalypt woodland and coastal rain forest.

The first of the following two tables (**Tables 3 and 4**) shows the calculated approximations of the survey coverage; and the second shows the calculated approximations of the survey effectiveness in terms of the landform, as prescribed in *"National Parks and Wildlife Amendment (Archaeological Investigations) Regulation 2010".*

It should be noted that neither of these tables take into consideration the extent to which there may be considerable differences in land use and past impacts within a single landform unit; or in the variable height or density of the ground cover across any single landform; or the extent to which soils are aggrading or degrading; or the differences in visibility between a scarred tree, a shell midden, a müller, and a single microlith of less than 10mm maximum dimension (to take only four examples); or the differences in abilities and perceptions of individual archaeologists, varying between those of a recent graduate who has specialised in one particular aspect of archaeology such as shell middens, compared to a "twenty-year consultant"; or an academic using fist-year students in the survey; or an inexperienced field-worker with no formal training in artefact recognition.

There are many factors that determine the effectiveness of a field survey, and the tables merely represent a statistical exercise to comply with the new regulations, but which in reality have little to do with how effective the field investigation has been.

The digital images that follow **Tables 3 and 4** show various aspects of the Project Site, focussing on the variations in vegetation and ground-cover and the nature and extent of the ground exposures.

A	B	C	D	E	F	G	H	I	J
Survey unit approx. 1,700,000 sqm (includes impact footprint of 14.8ha - i.e. 148,000sqm all of which occurs above 1160m AHD)	**Landform**	**Survey unit (broad estimates)**	**Horizontal exposure % (av) incl roads & creeks**	**Area of exposure (C x D) [approx.]**	**Visibility % (average)**	**Area available for site detection (E x F) - [approx.]**	**Area avail. for site detection % (G/C x 100) - [approx.]**	**Vertical exposure % (average)**	**Effective coverage sqm - [approx.]**
Ridges and plateaus above 1180m AHD	Ridges and upper slopes	560,000	20%	112,000	80%	89,600	16.00%	n/a	89,600
Slopes between 1180m AHD and 1160m AHD	Mid-slopes	940,000	5%	47,000	40%	18,800	2.00%	n/a	18,800
Swales, gullies and drainage lines below 1160m AHD	Drainage lines	200,000	5%	10,000	60%	6,000	3.00%	n/a	6,000

TABLE 3 - SURVEY COVERAGE

Landform	Survey unit	Area surveyed (approx.)	Area effectively surveyed (= effective coverage)	% of landform surveyed (= area surveyed/ landform area x 100) [approx.]	% of landform effectively surveyed (= area effectively surveyed/landform area x 100) [approx.]	Number of sites (previously recorded) within 3km	Number of new sites	Number of artefacts or features
Ridges and upper slopes	560,000	300,000	89,600	54.0%	16.0%	0	0	0
Mid-slopes	940,000	200,000	18,800	21%	2%	0	0	0
Drainage lines (and swales and gullies)	200,000	30,000	6,000	15%	3%	0	0	0

TABLE 4 - LANDFORM SUMMARY

Image 1 – Looking westwards in the north-eastern corner of the site. The quarry is to the left.

Image 2 – Looking south-westwards across the northern dam to the fines dump.

Image 3 – Looking southwards towards the ridge on the upper northern slopes midway along the site.

Image 4 – Looking westwards midway along the northern slopes.

Image 5 – Looking towards the end of the ridge from the western boundary.

Image 6 – Looking southwards across the western end of the site.

Image 7 – The upper slopes at the western end of the southern slopes.

Image 8 – View showing the steepness of the upper slopes of the southern slopes.

Image 9 – Stringybark regrowth on the middle and lower slopes midway along the southern slopes.

Image 10 – The slopes to the south of the existing quarry.

Image 11 – Looking eastwards along the ridge just to the west of the existing quarry.

Image 12 – Looking westwards along the spine of the ridge.

Image 13 – Looking eastwards at the western end of the ridge.

Image 14 – Rubble on the northern slopes exposed by ant activity

Image 15 – View of the existing quarrying operation viewed from the east.

9. THE RESULTS OF THE SITE VISIT.

No sites were recorded as a result of the field visit.

10. ANALYSIS AND DISCUSSION.

10.1. Sites previously recorded in the area

To understand why no sites were found in the Project Site one only has to consider that because there was no stone within the site suitable for knapping into tools and weapons any artefacts within the site must have been manufactured from suitable stone located elsewhere. If people had visited the site it was probably only in a hunting or gathering role or to

The valley was also a natural corridor and route from the Barwon, via Laura Creek and Reedy Creek to the ceremonial ground at Black Mountain, whereas the Study Area was neither a natural route nor one easy to travel over with elderly and very young group members and a far more difficult route to get to Black Mountain.

10.2. Representativeness of the results

The results of the site visit and desk top analysis were as predicted primarily because of the absence of resources such as shelter, water and knapping stone. Isolated artefacts occur in all kinds of environments but probably represent a single journey during which the artefact was lost or discarded. Isolated artefacts are found opportunistically and if there are any in the Study Area they are unlikely to be discovered unless purely by accident.

If Aboriginal people did visit the site it would have been for opportune hunting and gathering from which the only likely artefactual remains would be a discarded or misplaced isolated artefact, none of which are likely to be recovered.

10.3. Limitations of the results

As referred to previously the author considers it unlikely that the Project Site ever included a camp site or tool manufacturing (knapping) site, but considers it likely that at least sometime during the last 50,000 years Aboriginal people may have passed through the Project Site in transit; or may have entered the area in a search for food such as berries and fruits or insects, rodents, rock wallaby, goanna or possum. Such activities may have left few material remains such as stone tools or weapons, however if such artefacts exist they will only be as isolated artefacts or very low density scatters, neither of which are likely to be found. In most instances isolated artefacts tend to be near water but in the absence of any reliable water in the Project Site there was no particular location on which to focus in an attempt to find an artefact.

10.4. The conclusions arising from the site visit and the desk top assessment

The field investigation to ground-proof the Predictive Model took place in an environment in which there is no record of Aboriginal sites having been found. The scarred tree recorded by White and Sonter occurred on the upper slopes of the Reedy Creek valley where the soils supported large old growth trees and healthy native grasses. The vegetation at that location comprised open eucalypt woodland with well grassed slopes, an environment that while adjacent to the Study Area was far less rugged and far less hostile.

The Study Area which included the Project Site was not an environment in which people would have wanted to stay for any length of time. Not only was it bereft of reliable resources its surface was littered with angular sharp-edged metamorphosed rubble and boulders. The only shelter would have been handmade gunyahs of bark; there was no reliable water; and there were far more preferable environments not more than 500m to the north in Reedy Creek valley.

The results of the field survey do not stand alone. The study area was previously surveyed by White and Sonter in November 2012 (see **Appendix vii**) and although their letter report did not include a description of survey conditions it is probable that they were different to the conditions of the current survey. But importantly they too did not find any sites within the Project Site.

A full draft copy of this report was forwarded to each of the registered Aboriginal stakeholders for review to give them the opportunity to add any cultural information directly relevant to the Project Site.

The only response received by the date on which this report was completed, 26 days after the draft report was sent to each of the registered Aboriginal stakeholders, was from Natalene Mercy (see Appendix v). Natalene expressed her satisfaction with the draft report and had nothing to add to the cultural information in relation to the proposed quarry extensions

11. SIGNIFICANCE ASSESSMENT

The NSW OE&H policy to safeguard all sites, Aboriginal places, and archaeological material of significance wherever possible requires that some means of assessing the significance of the sites is necessary. This is not only for the purpose of determining whether the proposed development can proceed as proposed, but also to provide Cultural Resource Managers with the information for future management of the area.

11.1. Cultural significance

The Aboriginal or cultural significance of Aboriginal relics and sites can only be assessed by the Aboriginal community, and in particular, the Elders. It is the responsibility of the archaeologist to ensure that the Elders or elected representatives of the Aboriginal community are advised of the survey results, and are consulted as to their knowledge and opinion of the significance of the area, and to transcribe and present those expressions in report form.

As referred to previously, a copy of the draft of this report was sent to each of the registered Aboriginal stakeholders for review and comment on **4th June 2014** to provide them with the opportunity to provide any information of a cultural nature directly relating to the Project Site, so that it could be considered in the final recommendations of this report.

No additional cultural information in relation to the quarry site was received

11.2. Research potential

In the absence of sites there is nothing to assess.

11.3. Educational potential

In the absence of sites there is nothing to assess.

11.4. Aesthetic value

In the absence of sites there is nothing to assess.

11.5. Uniqueness and/or rarity

In the absence of sites there is nothing to assess.

12. IMPACT ASSESSMENT

In the absence of Aboriginal sites in the Project Site there is nothing to assess.

13. MANAGEMENT AND MITIGATION MEASURES.

In the absence of sites or cultural information specific to the quarry site there is nothing to manage or mitigate damage to. However, while no sites were recorded the proponents are advised that it is their responsibility to ensure that if any artefactual material becomes exposed and visible during the proposed works that they have a Duty of Care to avoid damage to both Aboriginal sites and the artefactual material they contain. To cause damage to a site or its contents without authorisation from OEH may lead to prosecution, and if found guilty, the offender may be fined and may be imprisoned. This may equally apply to the property owners, to their employees or to any sub-contractors they might engage.

14. RECOMMENDATIONS

In the absence of artefactual material or identification of the Project Site as being a place of Aboriginal cultural significance there is nothing to manage or avoid in the proposed works, however NSW OE&H has made the following recommendations in relation to any earthwork-operations as additional Statements of Commitment or as conditions of approval as appropriate:

1. If Aboriginal cultural objects are uncovered due to the development activities, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and Aboriginal community representatives must be contacted to determine the significance of the object(s). The site is to be registered in the AHIMS (managed by NSW OE&H) and the management outcome for the site included in the information provided to the AHIMS. It is recommended that the Aboriginal community representatives are consulted in developing and implementing management strategies for all sites, with all information required for informed consent being given to the representatives for this purpose.

2. If human remains are located during the project, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police, the Aboriginal community and NSW OE&H are to be notified. If the remains are found to be of Aboriginal origin and the police consider the site not an investigation site for criminal activities, OE&H should be contacted and notified of the situation and works are not to resume in the designated area until approval in writing is provided by NSW OE&H. In the event that a criminal investigation ensues, works are not to resume in the designated area until approval in writing (*has been received*) from NSW Police and NSW OE&H.

3. All reasonable efforts must be made to avoid impact to Aboriginal cultural heritage values at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the Aboriginal community and NSW OE&H.

15. GENERAL GLOSSARY

The definitions that follow are for terms used in this and other reports written by the author, and do not necessarily apply to their use in different contexts.

ADZE : A modified flake with at least one steeply-retouched working edge. While all adzes are generally considered to be wood-working tools it is probable that some also served as cores and others as scrapers. Adzes with a uniform butt were frequently hafted to make a chisel-like tool, but the intended use of the adze determined the size of the adze and whether it was hafted (Flenniken and White, 1985).

ARCHAEOLOGICAL DEPOSIT :
Sediments which contain evidence of past Aboriginal use of the place, such as artefacts, hearths, burials etc.

ARTEFACT : Any object that has attributes as a consequence of human activity (Dunnell, 1971). In this report 'artefacts' has been used generally to describe pieces of stone that have been modified to produce flakes, flaked pieces, cores, hammerstones, or axes.

BACKED BLADE :
A stone tool manufactured from a flake on which one margin has been modified by the removal of small flakes to blunt the edge or margin opposite the cutting edge.

BORA GROUND :
A ceremonial site comprising of one or two connected circles composed of compacted or mounded earth, or defined by an arrangement of stones, of 2 to 30m diameter, generally used in male initiation rites.

CAMPSITE : A place at which the density of artefacts and the variety of material indicates that people 'frequently' used the place as a stopping or resting place. Such places are also likely to contain or be close to water resources, food resources, or stone material resources. In this report a campsite is used to describe artefact scatters that are associated with hearths or fireplaces, as distinct from scatters that are not associated with hearths or fireplaces, which are described as Open Scatters.

CHALCEDONY :
A form of silica (partially translucent), which occurs as linings in cavities in rocks. When banded it is known as AGATE (Department of Mines, 1973). Chalcedony is uniformly coloured and agate has curved bands or zones of varying colour (Cook & Kirk, 1991).

CHERT : Another name for sedimentary chalcedony. It occurs most frequently in limestones, or in marine sedimentary rock, or as pebbles in sedimentary rock. In its depositional context it is often concentrated in bedding planes. Chert found in deep-water limestones is formed from radiolaria and diatoms (siliceous planktonic micro-organisms) (Cook & Kirk, 1991).
Chert is a form of amorphous or extremely fine-grained silica, partially hydrous, found in concertions and beds. It is classified as a chemical sedimentary rock although it may be precipitated both organically and inorganically (Department of Mineral Resources, n.d.).

CONGLOMERATE :
Naturally cemented gravel. Conglomerate is a coarse-grained clastic sedimentary rock composed of generally rounded fragments of other rock types larger than 2 mm in diameter, set in a fine-grained matrix of sand, silt, or any of the common natural cementing materials (Department of Mineral Resources, n.d.).

CORE : A piece of stone from which flakes have been removed, that cannot otherwise be described as a retouched or modified artefact.

CORTEX : The naturally altered surface of stone – e.g. the water-worn surface of river pebbles.

DEBITAGE : The small waste material observed in knapping floors. Generally, waste material is described as all those fragments having a maximum dimension of less than 10mm.

FLAKE : A fragment of stone exhibiting features indicating that it has been deliberately removed from a core piece. These features are evident as:

i) Platform: Plane or point at which a blow was delivered to remove the flake.
ii) Bulb of Percussion: Convex surface that occurs on the face or ventral surface of a flake, radiating from the point of impact, produced as a consequence of the force pattern.
iii) Eraillure: see below.

Other terms:

i) Dorsal: The back or outer face of a flake as it would have been prior to removal from a core. Frequently either ridged or exhibiting negative flake scars when removed in secondary flaking, with a natural weathered cortex when removed in primary flaking.
ii) Ventral: The 'chest' or inner face of a flake as it would have been prior to removal from the core. The surface upon which the Bulb of Percussion occurs.
iii) Platform Preparation: The removal of flakes from a surface to produce a level platform. May be evidenced by retouch scars to the platform.
iv) Retouch: The removal of small flakes from an edge or margin of an artefact to modify its shape or resharpen its edge.
v) Proximal: The end of a flake closest to the striking platform.
vi) Distal: The end of a flake furthest from the striking platform.
vii) Margin: The edge of an artefact.
viii) Eraillure: A small circular to elliptical negative flake scar occurring on the surface of the bulb of percussion on flakes of very fine-grained or highly silicified material. It occurs 'naturally' as a consequence of internal forces generated at the time of flake removal.
ix) Split Cone: Occurs when the flake splits down its axis frequently removing part of the striking platform. Generally believed to be produced by faulty knapping technique, but is also probably a consequence of flawed material.
x) Transverse Snap: Occurs when a flake snaps across its axis. Generally believed to be caused by post-depositional impacts such as human or stock treadage, or vehicular traffic.

FLAKED PIECE :

A fragment of stone exhibiting flake scars indicating that it is an artefact, but not displaying diagnostic features, such as a Bulb of Percussion, Striking Platform, or an Eraillure.

GREYWACKE :

A type of sandstone, grey or greenish-grey in colour, tough and well indurated and typically poorly sorted (Clark & Cook, 1986).

A generally poorly sorted, dark sandstone containing feldspar and sand-sized rock fragments of metamorphic or volcanic rocks (Department of Mineral Resources, n.d.).

Usually a dark and coarse-grained rock compared to mudstones and siltstones that are much finer-grained and better sorted.

HOLOCENE PERIOD :

The period from 10,000 years ago to the present.

IGNEOUS ROCK :

Rock formed by the cooling and solidification of magma on or below the earth's surface (Geography Dictionary, 1985).

In situ : In its original place – as deposited.

ISOLATED ARTEFACT :

A solitary stone artefact, at least 50m from its nearest neighbour. This is based on NPWS policy that two artefacts within 50m of each other constitute a site.

KNAPPING FLOOR:

A discrete scatter of artefacts in which at least two artefacts are recognisably of the same material, and derive from the same piece of stone. Also described as a stone tool manufacturing site or floor.

LOCATION : The place at which an artefact is found, or a place identified as having either archaeological or Aboriginal significance.

MEASUREMENT :

I) Flake:
   i) Length: Measured along the percussion axis at right angles to the platform.
   ii) Width: The greatest width measured at right angles to the percussion axis.
   iii) Thickness: The greatest thickness measured at right angles to the percussion axis.

II) Flaked piece:
   i) Length: The longest dimension
   ii) Width: The greatest width measured perpendicular to the length.
   iii) Thickness: The greatest thickness measured perpendicular to the length.

III) Core:
   i) Length: The longest dimension.
   ii) Width: The greatest width measured perpendicular to the length.
   iii) Thickness: The greatest thickness measured perpendicular to the length.

MIDDEN : A refuse heap or stratum of food remains, such as mollusc shells, and other occupational debris (Dortch, 1984 – see also Meehan, 1982).

MUDSTONE : A fine-grained detrital rock, usually quite massive and well consolidated. May be black through grey to off-white, browns, reds and dark blues/greens. Frequently found in association with sandstones (Cook & Kirk, 1991).

Identification is often aided by colour variations in layering. A source for stone material tool manufacturing material found as river pebbles in creek beds, and artefacts often display a water-worn cortex.

NEGATIVE FLAKE SCAR :

A concave surface resulting from the removal of a flake, occurring on the surface of the rock from which a flake has been removed.

PLEISTOCENE PERIOD :

The period from about 10,000 years ago to 2 million years ago.

POTENTIAL ARCHAEOLOGICAL DEPOSIT (PAD):

Synonymous with Potentially Archaeologically Sensitive : Having the potential to contain archaeological material although none is visible.

QUARTZITE :

Quartzites are formed by the regional or contact metamorphism of quartz arenites, siltstones, and flints (cherts). They are composed essentially of quartz, and usually have a fine-grained granoblastic (grains are roughly the same size) texture. Generally massive, but may sometimes show sedimentary structures (Cook & Kirk, 1991).

ROTATION :

The removal of flakes from a core by blows directed at different angles, to different platforms. May be evident on the dorsal surface of a flake as negative flake scars, which do not follow the same direction as the percussion axis of the flake. This may be confused with scars produced during core preparation.

SCAT : The solid waste material produced by an animal – dung, droppings, manure (Triggs, 1985).

SCATTER : Two or more artefacts occurring within 50 metres. Scatter may also be used in the context of 'background scatter', meaning the general distribution of artefacts across the landscape that cannot be recognised as discrete concentrations.

SILCRETE : A near surface or surface siliceous induration (Desen & Peterson, 1992).
A conglomerate consisting of surficial sand and gravel cemented into a hard mass by silica.
A siliceous duricrust (Bates & Jackson, 1980).
Crusts may form as a result of low, infrequent rainfall, on reasonably flat surfaces. These are known as duricrusts – those cemented by silica are known as silcretes (Clark & Cook, 1986), sometimes referred to locally as 'billy' (Gentilli, 1968), or 'grey billy'.
Silcrete on the northern tablelands of NSW forms at the surface contact between sediments of the Sandon Beds and the Armidale Beds with overlying basalt, where groundwater (more rich in silica than surficial water) interacts with surficial water and precipitates new quartz as the matrix to the sediments (N.D.J. Cook, Dept. of Geophysics, UNE, pers. Comm.).
In softer formations of quartz sands, groundwater has apparently been responsible for the formation of concretionary layers of silcrete. Under altered climatic conditions, the less competent beds erode away leaving concretions. Since they are often the size of old-fashioned woolsacks and are greyish and white, they are popularly known as gray billy (slang for billy goat) (Fairbridge, 1968).

SITE : A discrete area or concentration of artefactual material, place of past Aboriginal activity, or place of significance to Aboriginal people.

SCIENCE TERMS (taken from Banks 1995, and others as referenced).

BEDROCK : Outcrop of *in situ* rock material below the soil profile.

BENCH : A strip of relatively level earth or rock breaking the continuity of a slope.

BLOWOUT : A closed depression formed in the land surface by wind eroding sands and depositing them on adjacent land.

CLAYPAN : A depression caused by the aeolian deflation of sediments, or by the presence of a prior lake.

DUNE : A ridge built up by wind action composed of sands, silts, or sand-sized aggregates of clay.

FLOODPLAIN : A large flat area, adjacent to a watercourse, characterised by frequent active erosion and aggradation by channelled and overbank stream flow.

GIBBER : A level surface covered by a thick deposit of gravel or broken siliceous pebbles, occurring in the more arid parts of the continent, thought to have been formed from the break-up of a siliceous (silcrete) surface crust, and termed gibber plains (Whittow, 1984) – see also silcrete.

GILGAI : Surface microrelief associated with soils containing shrink-swell clays. Gilgai consists of mounds and depressions, or irregularly distributed small mounds and subcircular depressions varying in size and spacing. Vertical interval usually <0.3m; horizontal interval usually 3-10m, and surface almost level. Sometimes called 'crab-hole' soils.

GULLY : An open incised channel in the landscape generally greater than 30cm deep and characterised by moderately to very gently inclined floors and steep walls.

HUMMOCK : A small raised feature above the general ground surface.

LANDFORM ELEMENTS :
Crest : Landform element standing above all points in the adjacent terrain.
Flat : Neither a crest or a depression <3% slope.
Upper slope : Adjacent to and below a crest or flat but not a depression.
Midslope : Not adjacent to a crest, a flat or a depression.
Lower slope :Adjacent to and above a flat or a depression but not a crest.

LITHOSOLS : Shallow soils showing minimal profile development and dominated by the presence of weathering rock and rock fragments.

QUARTZOSE: A term applied to sedimentary rocks composed primarily of quartz particles (http://www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems/inland-and-alpine...) accessed 22nd April 2014

RILL : A small channel cut by concentrated runoff through which water flows during and immediately after rain.

RUNOFF : That portion of precipitation not immediately absorbed into or detained upon the soil and which thus becomes surface flow.

SCARP/CLIFF : A steep slope terminating a plateau or any level upland surface.

SCRUB : vegetation structure consisting of shrubs 2-8m tall.

SHEET EROSION : The removal of the upper layers of soil by raindrop splash and/or runoff.

SOIL PROFILE :
"A HORIZON" : The top layer of mineral soil. This may consist of two parts:
A_1 HORIZON: Surface soil and generally referred to as the topsoil.
A_2 HORIZON: similar in texture, but paler in colour, poorer in structure, and less fertile.

" B HORIZON" : The layer below the A Horizon. This consists of 2 parts:
B_1 HORIZON: A transitional horizon dominated by properties characteristic of the underlying B_2 horizon.

B_2 HORIZON: typically contains concentrations of silicate clay and/or iron, and/or aluminium and/or translocated organic material.

"C HORIZON" : The parent rock. Recognised by its lack of pedological development, and by the presence of remnants of geologic organization.

"R HORIZON" : Hard rock that is continuous (Charman & Murphy, 1993; 350-1).

SPUR : A ridge which projects downwards from the crest of a mountain as a water-parting (Whittow, 1984).

SUBSOIL : Sub-surface material comprising the B and C Horizons of soil with distinct profiles; often having brighter colours and higher clay contrasts.

SURFACE CONDITION :
Gravelly : Over 60% of the surface consists of gravel (2-69mm).
Hardsetting : Soil is compact and hard.
Loose : Soil that is not cohesive.
Friable : Easily crumbled or cultivated.
Self-mulching : A loose surface mulch of very small peds forms when the soil dries out.

SWALE : A linear level-floored open depression excavated by wind or formed by the build-up of two adjacent ridges.

SWAMP : Watertable at or above the ground surface for most of the year.

TERRACE : A flat or gently inclined surface bounded by a steeper ascending slope on its inner margin and a steeper descending slope on its outer margin (Whittow, 1984).

TOPSOIL : A part of the soil profile, typically the A_1 horizon, containing material that is usually darker, more fertile and better structured than the underlying layers.

UNDERSTOREY : A layer of vegetation below the main canopy layer.

VEGETATION: Forest types.
Closed forest: Canopy provides complete cover – these areas are often called rainforests.
Tall open (wet eucalypt) forest: Canopy cover is reduced – understorey of trees and shrubs.
Open forest (dry eucalypt) Canopy is lower and more open – understorey of hard-leaved shrubs and grasses.
Woodland: Trees are more widely spaced – understorey is grass rather than shrubs

Hardwood: A group of trees called angiosperms, or flowering plants, also called broadleaved plants. Most common is eucalypt.
Softwood: A group of trees called gymnosperms or conifers. Includes pine trees, spruces and firs, cypress pine. Used as timber.

Forests can be described as: open or closed; tall or short; wet or dry; softwood or hardwood.
Varieties: rainforest; wet eucalypt forest; mixed eucalypt forests; dry eucalypts forests; cypress pine forests.

Old growth forests are forests that have not been disturbed for 200 years (Underwood S & G, 1995)

ZEOLITE: Family of alumina-silicate minerals. Used in industry as catalysts and drying agents.
Occurs as low-grade metamorphic minerals, and also in vesicules in lavas, or in shallow igneous intrusions (Cook & Kirk 1991).
Various natural zeolites have applications in agriculture, aquaculture, water treatment, and pollution control, in soil conditioning and as an odour control agent in stock feeds, pet litters, fertilizers, sewerage treatment and other uses (Mineral Resources 2001).

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APPENDICES

Appendix i – Letter to Government Departments and Agencies (example).

Appendix ii - Advertisement inviting Aboriginal stakeholders to register their interest in the project site, "The Tenterfield Star" 1/4/2014

Appendix iii – Responses to letters to Government Departments and Agencies

Appendix iv – Email from Natalene Mercy

Appendix v - Results of the AHIMS search

Appendix vi – Site Types.

Appendix i – Letter to Government Departments and Agencies (example).

Archaeological Surveys & Reports Pty Ltd

John Appleton
A.C.I.S., A.C.I.M., B.A. (Hons)

16 Curtis Street, Armidale, NSW 2350
Tel. 02 6772 6512 Fax 02 6772 4567 Mob. 0428 651 789
Email japples@northnet.com.au

ABN 67 075 625 722

Office of the Registrar, ALRA
Tranby Aboriginal College
11-13 Mansfield Street
Glebe 2037

20th March 2014

Re: Archaeological assessment:
Dowe's Quarry, Part Lots 38 and 309 DP 751540, and Lot 3 DP 42044,
Mount Lindesay Highway, Tenterfield

Dear Sir/Madam

This is to advise that Archaeological Surveys & Reports Pty Ltd has been engaged by R.W. Corkery & Co. Pty Limited, to undertake an archaeological assessment of the site of proposed quarrying operations at Dowe's Quarry, Part Lots 38 and 309 DP 751540 and Lot 3 DP 42044, Mount Lindesay Highway, Tenterfield, on behalf of the operator, Darryl McCarthy Constructions Pty Ltd.

The Assessment is to identify the potential for sites of archaeological and Indigenous cultural significance to occur in the Project Site. The assessment is to be included in an Environmental Impact Statement.

In accordance with Best Practice we are now seeking information on any Aboriginal groups, stakeholders or traditional knowledge holders with an interest in the management of Indigenous heritage matters in the Guyra area. Would you please provide contact details for any known Aboriginal groups with a cultural interest in the area. The nominated groups can then be included in the consultation process with regard to Indigenous heritage issues.

Regards

1

Your details	Name:	JOHN APPLETON
	Position:	DIRECTOR
	Company/organisation:	ARCHAEOLOGICAL SURVEYS & REPORTS PTY LTD
	Postal address:	16 CURTIS STREET, ARMIDALE 2350
	Your reference:	DOWES
	Email address:	japples@northnet.com.au
	Telephone No.:	02 6772 6512
	Fax No.:	02 6772 4567
	Date of request:	3/4/2014
Reason for search request	☐ **I am a party to a native title proceeding** – please specify Federal Court/Tribunal file number/application name:	
	☒ **I need to identify existing native title interests to comply with the NTA or other State/Territory legislation** – please provide details: "Code of Practice for Archaeological Investigation in NSW" (OEH 2010) "Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)	
Details of the area to be searched Please complete the relevant description fields (fields marked with an asterisk must be completed) **and** provide a clear map of the area including landmarks	**Mining Tenure:**	
	*State/Territory:	
	*Mining/ exploration details: Tenement number(s) (i.e. EL No or MCN No) or block/sub block description:	
	Other Land Tenure:	
	*State/Territory:	NEW SOUTH WALES
	Land parcels: *Lot number(s)*:	Lot 260 DP 751540; Lot 4 DP 42044; Lot 239 DP 751540; Lot 3 DP 42044; Lot 309 DP 751540; Lot 308 DP 751540
	*Tenure type (*e.g. agricultural lease*):	FARMLAND
	Property name:	"NAREENA"
	Pastoral Lease number or name:	
	*Local Government Area(s):	TENTERFIELD SHIRE COUNCIL
	County:	CLIVE
	Parish:	TENTERFIELD
	Town:	TENTERFIELD
	Section:	
	Hundred:	
	Northern Territory Portion:	
	Other details: (additional information may be attached):	

Note: Search requests cannot be processed if insufficient detail is supplied.

Note: Map coordinates that form part of the attachments to a search result will not be sent with results unless specifically requested. Maps and any other formal attachments will be sent.

Appendix ii – Advertisement inviting Aboriginal stakeholders to register their interest. "Tenterfield Star" 1/4/2014

PUBLIC NOTICE

ARCHAEOLOGICAL ASSESSMENT

Darryl McCarthy Constructions Pty Ltd (DMC) operates the Dowe's Quarry off Mount Lindesay Highway, 8km northeast of Tenterfield, and proposes to lodge a Development Application (DA) with Tenterfield Shire Council to extend ongoing operations. DMC has engaged R.W. Corkery & Co. Pty Limited (RWC) to prepare an Environmental Impact Statement to support the DA requirements.

RWC has engaged Archaeological Surveys & Reports Pty Ltd to undertake an archaeological assessment of the site to identify any Indigenous cultural issues that might present a constraint to the proposed operations.

In accordance with the "Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales" (OE&H 2010); the "Code of Practice for Archaeological Investigation in NSW" (OE&H 2010); the "Aboriginal Cultural Heritage Consultation Requirements for Proponents" (OE&H 2010); and the "Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW" (OE&H 2011) all registered Aboriginal stakeholders with an interest in the Study Area are invited to register their interest in providing any cultural information pertaining to the Study Area.

Please register your interest within 14 days with

John Appleton, Archaeological Surveys & Reports Pty Ltd

Tel. 02 6772 6512 - Mob. 0428 651 789

Email: japples@northnet.com.au

John Appleton

From: melinda.campbell@fairfaxmedia.com.au
Sent: Wednesday, 2 April 2014 10:24 AM
To: japples@northnet.com.au
Subject: PUBLIC NOTICE ARCHAEOLOGICAL ASSES
Attachments: 1360282_616661734.jpg

ADVERTISING PROOF

Ref no: AW1360282 Printed: 02/04/2014 10:23:34 (FP-TAMWORTH)
Attention: JOHN APPLETON
Company: ARCHAEOLOGICAL SURVEYS AND REPORTS P/L

BOOKING DETAILS

Name:	ARCHAEOLOGICAL SURVEYS AND REPORTS P/L
Address:	16 CURTIS ST
City:	ARMIDALE
State:	NSW
Postcode:	2350
Authorised by:	JOHN APPLETON
PO Number:	
Cost:	$231.26
Size:	8 x 2
Class / section:	Public Notices (628)

APPEARANCE DETAILS		
09/04/2014	Tenterfield Star	$231.26 inc GST

AUTHORISATION
I have checked all details contained in the advertisement (including phone numbers and spelling) and authorise you to proceed as per the booking details above.
Name:
Signature:
Date:

Comments
Hi John, Please find attached ad for proof. Please advise asap if ok to print. I will also need to organise payment, if possible, via credit card over phone. Regards Melinda

Once authorised, please reply with 'authorised' in the subject field to melinda.campbell@fairfaxmedia.com.au

or fax back to (02) 6766 3181

Should you have any further enquiries please do not hesitate to contact me.
Regards,

1

Appendix iii – Responses to letters to Government Departments and Agencies

National Native Title Tribunal

Sydney Office, Operations East
Level 16
Law Courts Building
Queens Square
Sydney NSW 2000
GPO Box 9973
Sydney NSW 2001
Telephone (02) 9227 4000
Facsimile (02) 9227 4030

15 April 2014

John Appleton
Director
Archaeological Surveys & Reports
16 Curtis Street
ARMIDALE NSW 2350

Our Reference: 6142/6143-14SJ
Your Reference: Hardacres & Dowes

Dear Mr Appleton

Native Title Search Results for "Hardacres" & "Nareena"

Thank you for your search requests in relation to the above areas.

As your request was related to areas of land which are freehold it should be noted that under the *Native Title Act 1993* (Cwlth), the valid grant of a freehold estate (other than certain types of Aboriginal and Torres Strait Islander land) on or before 23 December 1996 is known as a 'previous exclusive possession act'. This means that native title has been extinguished over the area.

Native title claimants are not allowed to include land and waters covered by previous exclusive possession acts in their applications; therefore they would normally exclude freehold areas. Although a native title application may be made over freehold land on the basis that freehold was invalidly granted, the chances of this happening are very low.

For more information on native title and freehold tenure, you may also wish to visit our website at http://www.nntt.gov.au/Applications-And-Determinations/Registers/Pages/Register-Searches-for-Native-Title-Claims-Over-Freehold-Land.aspx

Yours sincerely

Sylvia Jagtman

Sylvia Jagtman | SENIOR CASE MANAGEMENT ASSISTANT
National Native Title Tribunal | Sydney Office
Level 16, Federal Law Courts Building, Queens Square, Sydney, New South Wales 2000
Telephone (02) 9227 4013 | Facsimile (02) 9227 4030 | Email sylvia.jagtman@nntt.gov.au
Shared country, shared future.

NSW GOVERNMENT Office of Environment & Heritage

Our reference: DOC14/66858
Contact: Rosalie Neve (02) 6659 8221

Mr John Appleton
Archaeological Surveys & Reports Pty Ltd
16 Curtis Street,
Armidale NSW 2350

Dear Mr Appleton

RE: Archaeological assessment: Dowe's Quarry, Part Lots 38 and 309 DP 751540, and Lot 3 DP42044, Mount Lindesay Highway, Tenterfield

Thank you for your correspondence of 20 March 2014 to the Office of Environment and Heritage (OEH) regarding Aboriginal cultural heritage consultation for the proposed assessment of the abovementioned property which lies in the Tenterfield local government area. I apologise for the delay in responding.

Please find enclosed a list of known Aboriginal parties for the Tenterfield local government area (Attachment A) that OEH considers likely to have an interest in the proposal. Note this is not necessarily an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with the OEH '*Aboriginal cultural heritage consultation requirements for proponents 2010*' (the CRs).

OEH would also like to take this opportunity to remind the proponent and consultant to:

- Ensure the project documents the full consultation process in the Aboriginal Cultural Heritage Assessment Report and to include copies of all correspondence sent to or received from all relevant stakeholders (including Aboriginal stakeholders and the agencies listed in section 4.1.2 of the CRs). Omission of these records in the final report may cause delays in the assessment of the Aboriginal Heritage Impact Permit application or require parts of the consultation process to be repeated if the evidence provided to OEH does not demonstrate that the consultation process has been fair, equitable and transparent.

- Ensure OEH is provided with evidence that reasonable attempts have been made to contact the relevant parties associated with the CRs. If this is not provided then OEH will deem that the consultation process has not complied with the CRs. OEH considers evidence of reasonable efforts to contact relevant parties would include, but not be limited to, multiple forms of communication; faxes (with confirmation slips demonstrating successful transmission), an e-mail log, registered post details, copies of letters and a phone call log.

Locked Bag 914, Coffs Harbour NSW 2450
Federation House Level 7, 24 Moonee Street,
Coffs Harbour NSW 2450
Tel: (02) 6651 5946 Fax: (02) 6651 6187
ABN 30 841 387 271
www.environment.nsw.gov.au

- Note that Appendix A of the CRs contains a map illustrating which Regional Office of OEH should be contacted regarding the AHIP application based on the local government area in which the project is located. Full details of the consultation requirements and the relevant Fact Sheets can be located on the OEH website at: www.environment.nsw.gov.au/licences/consultation.htm.
- Forward to OEH any changes to the contact details of interested Aboriginal parties, or information regarding additional parties, so that OEH can update its records.
- Ensure that consultation is fair, equitable and transparent. If the Aboriginal parties express concern or are opposed to parts of or the entire project, OEH expects that evidence will be provided to demonstrate the efforts made to find common ground between the opponents and the proponent.

If you require further information or clarification please do not hesitate to contact Rosalie Neve, Aboriginal Heritage Planning Officer, on (02) 6659 8221.

Yours sincerely

Dimitri Young 20 May 2014

DIMITRI YOUNG
Senior Team Leader Planning, North East Region
Regional Operations

Enclosure: Attachment A

ATTACHMENT A: OEH Known Aboriginal Parties (other than Aboriginal Land Councils for the Tenterfield Local Government Area

1. Kwiembal Elders Indigenous Group
   21A Dudley Street
   ASHFORD NSW

2. Natalene Mercy
   6 Bando Street
   GUNNEDAH NSW 2380
   0457 617 117

3. Ngoorabul Elders
   PO Box 157
   GLEN INNES NSW

Page 1 of 1

John Appleton

From: Tamai Davidson [t.davidson@tenterfield.nsw.gov.au]
Sent: Thursday, 22 May 2014 3:52 PM
To: japples@northnet.com.au
Subject: Archaeological Assessment - Dowe's Quarry, Mt Lindesay Highway, Tenterfield
Attachments: Tenterfield%20Aboriginal%20Heritage%20Study%20-%20PUBLIC%20COPY%20LO-RES%20%20-%201101192V3[1].pdf

Hi John,
In reference to your correspondence of 13 May 2014 and the proposed archaeological assessment at Dowe's Quarry, Part Lots 38 and 309 DP 751540 and Lot 3 DP 42044, Mt Lindesay Highway, Tenterfield, please find attached Council's Aboriginal Heritage Study, which identifies informatoni in relation to Aboriginal stakeholders and other information which may be pertinent to your assessment. Should you require any further information, please contact me.
Regards,

Tamai Davidson
Senior Planner
Tenterfield Shire Council
PO Box 214, Tenterfield NSW 2372

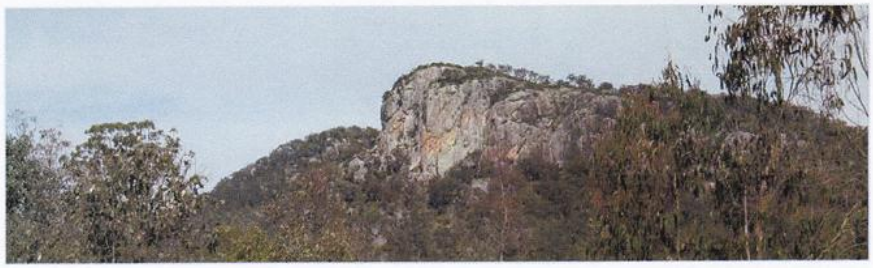
Phone: (02) 6736 6000
Direct Phone: (02) 6736 6015
Mobile: -
Fax: (02) 6736 6005
Email: t.davidson@tenterfield.nsw.gov.au
Website: www.tenterfield.nsw.gov.au

Confidentiality Notice
The information contained in this email is for the named recipient only. It may contain privileged and confidential information. If you are not the intended recipient, you must not copy, distribute, take any action in reliance on it, or disclose any details of the email to any other person, firm or corporation. If you have received this email in error please notify the sender and destroy the original.

1

Australian museum
BUSINESS SERVICES

Tenterfield LGA
Aboriginal Heritage Study



Prepared by Australian Museum Business Services
for Tenterfield Shire Council

Final
Adopted by Council Resolution 139/13 of 24 April 2013

1101192

TENTERFIELD SHIRE COUNCIL

NSW GOVERNMENT Office of Environment & Heritage

WARNING: Aboriginal and Torres Strait Islander people are warned that the following document contains images of deceased persons.

AMBS
Australian Museum Business Services - 6 College Street, Sydney NSW 2010, Ph (02) 9320 6311, Fax (02) 9320 6428
australianmuseum.net.au/AMBS ambs@austmus.gov.au

Appendix iv – Email from Natalene Mercy

John Appleton

From: Aaron Talbott [atgomilaroi@outlook.com]
Sent: Wednesday, 25 June 2014 10:42 AM
To: japples@northnet.com.au
Subject: Dowes Quarry

Hi John

In reading the Draft Report, I am satisified with the report that has been comprised. Without continuous water resource and limited shelter, I agree that it was a area that had limited occupation. Historical evidence of logging attributes to the fact that original landscape has been modified, hence, any possible remnants of Aboriginal Occupation would have been highly succeptible to destruction.

Management plan of habitat trees that support wildlife in the subject area need to be strictly enforced to ensure wildlife remains in the area. Possible habitat trees to be created to encourage wildlife to stay despite activity of quarry. It is possible a lot of the wildlife has moved because of damaged habitat environment or noise and environment pollution.

Additionally, regeneration of flora in the area with the RAP's and local Aboriginal Community being involved in such activities.

Is it possible to arrange another site visit.

Overall, the draft seems responsible.

Regards
Natalene Mercy
6 Bando Street
Gunnedah 2380
(M) 0456 103 871
Email: atgomilaroi@outlook.com

I Acknowledge the Traditional Custodians. Respect to Elders Past and Present.

Appendix v - Results of the AHIMS search

Office of Environment & Heritage
NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Your Ref Number : DOWES
Client Service ID : 129793

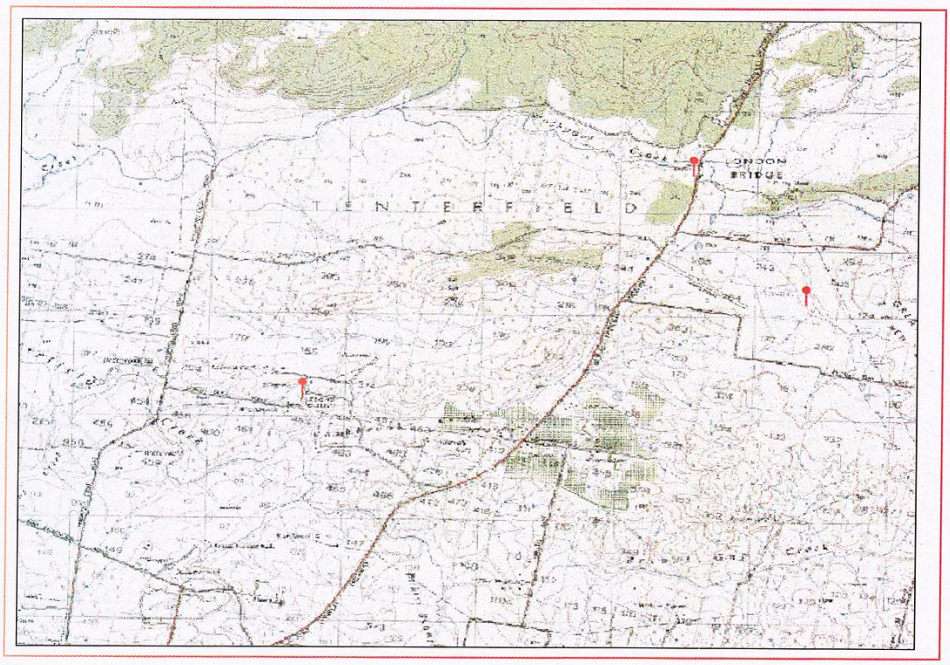
John Appleton
16 Curtis Street
Armidale New South Wales 2350
Attention: John Appleton
Email: japples@northnet.com.au

Date: 26 March 2014

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 405000 - 409000, Northings : 6788000 - 6794000 with a Buffer of 50 meters. Additional Info : Archaeological assessment for proposed extensions to an existing quarry north of Tenterfield for R.W.Corkery Co PL on behalf of Darryl McCarthy Constructions PL, conducted by John Appleton on 26 March 2014.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

PO BOX 1967 Hurstville NSW 2220
43 Bridge Street HURSTVILLE NSW 2220
Tel: (02)9585 6345 (02)9585 6471 Fax: (02)9585 6094

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

Office of Environment & Heritage
NSW GOVERNMENT

AHIMS Web Services (AWS)

Note: This Excel report shows the sites found in AHIMS on the 27/03/2014. If this date is not the same as the original date of the Search Results letter obtai letter.

Site ID	Site name	Datum	Zone	Easting	Northing	Context	Site status	Primary contact
12-2-0005	Leach's Gully;	AGD	56	408200	6790800	Open site	Valid	

Your Ref Number : DOWES

Client Service ID : 129793

ined during the Basic Search, then the search results might be different. The PDF version of this report will always coincide with the Basic Search Results

Site features	Site types	Recorders	Reports	Permits	Longitude GDA94	Latitude GDA94
Modified Tree (Carved c	Scarred Tree	ASRSYS			152.06	-29.01

Appendix vi – Site Types

Site types associated with Indigenous activities and cultural beliefs

The definitions that follow are for terms used in this report, and do not necessarily apply to their use in different contexts.

Art sites are defined as places where any medium has been applied to a rock surface either as symbols, characters, drawings, paintings, or any other rendition, recognisable as not being a natural discolouration or feature. They also include markings to a rock surface, either by engraving, abrading, or pecking, and which cannot be identified as being a natural feature.

Bora rings are circles of 2-30 metres diameter of compressed earth (from repeated treading or dancing), or stone arrangements, at which men performed initiation ceremonies, and are the most frequently recorded ceremonial sites. Sometimes they occur as two rings joined by a central track in a barbell configuration. They usually occur on level or low-lying country, which is usually the first topographical unit to be cultivated, or utilised for highways and roads, but they may also occur as circular stone arrangements on elevated rock platforms and hilltops. If they are or were present then they are usually either already known and have been recorded, or they have long since been destroyed.

Carved trees are readily recognised by even the untrained observer. The carving is incised either into the outer bark, or more commonly, into the living wood after removal of a section of the bark. The designs frequently consist of 'diamond cross-cuts', but may also consist of stylised animal motifs. Previously unrecorded carved trees are still discovered in relatively remote or inaccessible areas. Carved trees frequently occur near burial sites and/or Bora rings, but in some regions they may have been tribal boundary markers.

Fish traps may occur either in rivers or on seashores. They are recognisable as unnaturally formed stone arrangements that were constructed to trap fish (or eels or turtles) carried into the enclosure in deep water, and which are left stranded within the enclosure as the water level drops. The fish were then caught by nets, hand, or by spear.

Grinding grooves are usually observed on the surfaces of large sedimentary boulders or exposed shelves and outcrops of sedimentary rock along creek banks and beds, or near water. They have been produced by Aborigines using the rock surface to shape and sharpen the edges of stone to produce ground-edged axes, or to sharpen wooden spears (the latter tend to be narrow and deep). Water was used to lubricate the surface of the rock. The grooves frequently occur as linear abraded depressions in the rock, and may each be between 10 and 50 centimetres long, up to 15 centimetres wide, and 2 to 5 centimetres deep. Some sedimentary rock surfaces may exhibit shallow ground depressions of roughly round or elliptical shape, and these are more likely to be associated with seed grinding, root crushing, or other food preparation.

Middens may be identified variously as beach, lagoon, lacustrine, or estuarine, and are most likely to be observed at or above the water line where erosion, topsoil removal, or mining has exposed the shell. The size of the midden can vary enormously, with the smallest comprising a 'one off', "dinner-time camp" (Meehan. 1982), with as few as two or three shells, or a shallow lens of only a few centimetres. The largest middens may extend for many kilometres and may comprise of a number of lenses and layers of shell and ash up to several metres deep. These large middens may be evidence of continuous exploitation of the resource over many thousands of years. Middens of fresh water mussel shell may be found in eroding creek banks or in eroding terraces, particularly near both existing and defunct water holes.

Isolated shell or fragments may occur on any surface and in any situation. A single shell may have been discarded by a bird, but the presence of use-wear would indicate Aboriginal use of the shell as a tool, which was discarded after use. Such occurrence is likely to be where there is no immediate source of stone material suitable for tool manufacture.

Natural Mythological sites are places of significance to Aborigines, either because they are described in mythological stories or songlines, or because they were used in religious ceremonies. They may occur anywhere and while some are more predictable than others – as for example, permanent water holes, waterfalls, rock promontories, etc., others may have no particularly remarkable features. Seldom is there any recognisable artefactual evidence or anything to distinguish it from similar features in the vicinity. These sites must of necessity be identified by Aboriginal people with an association with the place.

Open sites, campsites, knapping floors, scatters, and isolated artefacts, are most likely to occur on eroded and exposed creek banks, particularly where slope wash or stock trails has removed the humic layer, or on eroded ridges and spurs, particularly near the junctions in watercourses.

Open sites are most likely to be present in greatest numbers near a source of either raw stone material, or potential food resources, or in a natural corridor between two differentially preferred environmental zones, or at the contact between two environmental zones containing different resources.

Artefacts in open scatters are likely to be manufactured from the dominant raw material available; i.e. Greywacke on greywacke-sourced soils, quartz on granite-sourced soils, silcrete and chert on relict sedimentary soils.

Artefact assemblages in open scatters are likely to consist predominantly of discard material, i.e., cores, flakes, flaked pieces, and debitage.

Artefacts exhibiting retouch scars and backing are most likely to occur in sites where secondary activity took place peripheral to the central camp site, although this is a generality and can only be observed where there is sufficient surface visibility to identify peripheral sites. Fragments of flakes with retouch or backing may occur on knapping floors indicating breakage occurring during manufacture, or maintenance areas in which damaged tools have been replaced and discarded.

Isolated artefacts are likely to be most frequently observed where the groundcover obscures all but the larger artefacts, such as cores, and large flakes, or where there is little contrast between the texture of artefactual material and the surface upon which it lies. Artefacts of materials contrasting with the matrix may be visible regardless of size; e.g. quartz artefacts may be far more visible than much larger basalt artefacts against a background of dark humic terrace soils.

PADs or Potential Archaeological Deposits are deposits, usually in shelters (but they may also be identified where there are intact deposits in open areas), which although not containing any visible archaeological material, are considered likely to contain archaeological material below the surface. These 'sites' are not recorded as sites on the Aboriginal Site Register, but are identified as places that require subsurface testing to establish whether a site exists or not.

Rock shelters with art or occupation deposits, are most likely to occur where the character of the parent rock is sufficiently massive or consolidated for it to retain a structure that weathers differentially to form shelters and overhangs.

Scarred trees are perhaps the most difficult site type to determine as having been caused by deliberate removal of the bark by humans and not as a consequence of natural events; such as abrasion from falling trees or branches, natural branch attrition, fire damage, or contact from vehicles or stock. They may occur in places wherever there are tree species that produce bark suitable for tool and implement manufacture. While some scars are clearly the consequence of deliberate bark removal by Aborigines (either evidenced by stone axe marks, or identified by Knowledge Holders), some scars were made by settlers, and stockmen, and surveyors who frequently blazed trails and property boundaries by scarring the trees, and by timber men who removed a strip of bark to test the suitability of a tree for logging.

Other site types such as hearths, burials, etc., are less easily predicted, although burials are frequently associated with carved trees, and Bora rings, and hearths with campsites, shelters, and shell middens.