Centennial Coal

Cultural Heritage Impact Assessment

Angus Place Extension Project

Date: January, 2014

Centennial Coal
Environment Matters

Cultural Heritage Impact Assessment

Angus Place Extension Project
Lithgow Local Government Area

Prepared by:

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Executive Summary

RPS has been engaged by Centennial Angus Place to prepare a Cultural Heritage Impact Assessment (CHIA) for the proposed extension of mining operations within the mine's current mining lease as part of the Angus Place Extension Project. This project comes under Division 4.1 of Part of the *Environmental Planning & Assessment Act 1979* (NSW). The Project Application Area is located near the Angus Place Colliery pit top in the Lithgow Local Government Area (LGA). The overall Project Application Area encompasses four study areas, comprising 29 survey units in total, which cover an area of 5030.5 hectares (ha). The largest of these study areas is located on the Newnes Plateau to the east of the pit top area and contains 21 survey units. The remaining three study areas are smaller, and are partially located in a valley area composed of paddocks and pastoral land to the immediate north (three survey units), south (three survey units), and east (two survey units) of the pit top area.

The project seeks to obtain approval for the continuation of mining at the Angus Place Colliery. The objectives of the Project are as follows.

- Design of the extension project in accordance with ecological sustainable principles;
- Coal production of a total of up to four (4) million tonnes per annum (Mtpa) of coal from the Lithgow coal seam;
- Extraction of coal using longwall mining techniques from an area identified as Angus Place East within the Project Application Area (refer **Figure 1**);
- Construction and operation of the following facilities to support the extension Project:
  - » A ventilation facility (APC-VS3) consisting of a single downcast (intake) shaft;
  - » Dewatering borehole sites to deliver water into the existing Springvale-Delta Water Transfer Scheme;
  - » Water management structures;
  - » Shaft spoil emplacement area;
- Upgrade of access track from Sunnyside Ridge Road to the proposed ventilation facility (APC-VS3) and dewatering borehole sites; and
- Continue to provide employment of a full-time workforce of 225 persons and up to 75 contractors.

The objective of the CHIA is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within the Project Application Area to formulate mitigation and management strategies necessary for inclusion in an Environmental Impact Statement (EIS).

A search of the Aboriginal Information Management Systems (AHIMS) database identified a total of 49 registered sites within the boundary of the Project Application Area, of which 14 were within the four study areas which encompassed proposed disturbance by both surface works and mining subsidence. Of these, 11 were recorded as shelters with deposit; one was a shelter with art and grinding groove; one was a shelter with deposit and grinding groove; and one was a stone arrangement. Eight of these sites were groundtruthed during the field survey, five could not be groundtruthed due to inaccessibility and one had been recorded and registered by RPS during a separate survey two months prior (Section 7).

Targeted site inspections of the Project Application Area were conducted between March 6th and April 13th 2012. The Project Application Area was divided into 29 survey units as a result of the process and chronology of the survey inspection work. No new Aboriginal objects or sites were identified during the field survey. Of the 14 sites within the Project Application Area boundary, it was considered that three were at potential risk of harm from mine subsidence and no sites will be affected by proposed surface works (Section 8). The draft subsidence report produced by MSEC (2013) suggested that the likelihood of significant

impacts on site #45-1-0084 and site 45-1-2756 (duplicate 45-1-2757) is relatively low (MSEC 2013: 93-94). It is considered that site #45-1-0137 is predicted to experience very low level subsidence, which is highly unlikely to result in any harm to the shelter. Despite this, it has been assessed that the three sites #45-1-0084 , #45-1-0137 and 45-1-2756 (2757) could be harmed (**Table 18**) and will be managed in accordance with monitoring protocols set out in Section 9. Where subsidence is 20mm or less no impact is expected; therefore the minimal subsidence expected to be caused by the project at the remaining 11 sites eliminated them from further consideration for mitigation measures.

The study found no registered historic heritage items within the boundary of the Project Application Area, and none were identified during the field survey. It is considered that there are no historic heritage constraints associated with the proposed works.

The following recommendations have been made on the basis that the Project Application Area will be assessed as a state significant development in accordance with the *Environmental Planning and Assessment Act 1979*.

RECOMMENDATIONS

Recommendation 1

Site #45-1-0084, a shelter with deposit, was originally recorded in 1983 and since recording has become isolated by dense vegetation and rockfalls creating steep and difficult access. As discussed in Section 9 predicted impact for this site is low, with minimal risk of significant harm. If access is possible, the site will be monitored as set out in Section 9.3.1.

Recommendation 2

Site #45-1-0137, which is subject to predicted subsidence as a result of the proposed extension of Angus Place Colliery, must be monitored in accordance with the procedures set out in Section 9.3 of this report. The subsequent Cultural Heritage Management Plan (CHMP) should be implemented and updated where required to take into consideration the commitments made in this heritage assessment and any subsequent conditions of approval.

Recommendation 3

Site #45-1-2756 (Duplicate #45-1-2757) based on the MSEC findings is predicted to experience subsidence that will not cause significant physical impact. However, there is a risk of harm as set out in section 9.2. It should therefore be managed as set out in Section 9.3.1 of this report. Given this site has been assessed as being highly significant at a local and regional level extreme care should be observed.

Recommendation 4

All Aboriginal heritage in the Project Application Area should be managed under a CHMP which must be developed in consultation with the Aboriginal Stakeholders.

Recommendation 5

All relevant Centennial staff and contractors should be made aware of their statutory obligations for heritage under NSW NPW Act (1974) and the NSW Heritage Act (1977), which may be implemented as a heritage induction.

Recommendation 6

If, during the course of development works, suspected Historic cultural heritage material is uncovered, work should cease in that area immediately. A suitably qualified heritage consultant should be contacted and the NSW Heritage Branch (Enviroline 131 555) notified, works can recommence once an approved management strategy is developed.

Terms, Definitions & Abbreviations

Abbreviation/ Term	Meaning
Aboriginal Object	"any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains" (DECCW 2010:18).
Aboriginal Place	"a place declared under s.84 of the NPW Act that, in the opinion of the Minister, is or was of special significance to Aboriginal culture" (DECCW 2010:18). Aboriginal places have been gazetted by the minister.
Aboriginal Culturally Modified Tree	"means a tree that, before or concurrent with (or both) the occupation of the area in which the tree is located by persons of non-Aboriginal extraction, has been scarred, carved or modified by an Aboriginal person by: (a) the deliberate removal, by traditional methods, of bark or wood from the tree, or (b) the deliberate modification, by traditional methods, of the wood of the tree" NPW Regulation 80B (3). Culturally Modified trees are sometimes referred to as scarred trees.
Activity	A project, development, or work (this term is used in its ordinary meaning and is not restricted to an activity as defined by Part 5 EP&A Act 1979).
AHIMS	Aboriginal Heritage Information Management System.
AHIP	Aboriginal Heritage Impact Permit.
cal. years BP	Calibrated years before present, indicates a radiocarbon date has been calibrated using the dendrochronology curves, making the date more accurate than an uncalibrated date.
CHIA	Cultural Heritage Impact Assessment.
CHMP	Cultural Heritage Management Plan.
DECCW	Department of Environment, Climate Change and Water (is now the Office of Environment and Heritage – OEH).
Development area	"Area proposed to be impacted as part of a specified activity or development proposal" (OEH 2011:ii). This report has used proposed **impact area** to mean the same as development area.
Disturbed Land	"Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable." (DECCW 2010:18).
DoPI	Department of Planning and Infrastructure (from April 2011) previously known as Department of Planning (DoP).
Due Diligence	"taking reasonable and practical steps to determine whether a person's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm" (DECCW 2010:18)
EIA	Environmental Impact Assessment.
EIS	Environmental Impact Statement.
EP&A Act	NSW Environmental Planning and Assessment Act 1979.
EPR	Environment Protection and Regulation.
GDA	Geodetic Datum Australia.
GIS	Geographic Information System.
Harm	"destroy, deface, damage an object, move an object from the land on which it is situated, cause or permit an object to be harmed." (DECCW 2010:18).
LALC	Local Aboriginal Land Council.
LEP	Local Environment Plan.
NPWS	National Parks and Wildlife Service.
NPW Act	NSW National Parks and Wildlife Act 1974 (administered by OEH).
NPW Regulation	NSW National Parks and Wildlife Regulation 2009 (administered by OEH).
OEH	Office of Environment and Heritage (formerly DECCW).

Abbreviation/ Term	Meaning
PAD	Potential Archaeological Deposit.
Project Application Area	The area subject to the proposed Activity.
REP	Regional Environment Plan.
REF	Review of Environmental Factors.
Study Area	One of the four areas within the Project Application Area boundary in which a field survey was undertaken as part of the CHIA.

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1.0 Introduction

RPS has been engaged by Centennial Angus Place (the proponent) to prepare a CHIA for an EIS to be prepared for the proposed extension of mining operations within the current mining lease of Angus Place Colliery. This assessment is required under Division 4.1 of Part of the *Environmental Planning & Assessment Act 1979* (NSW). This document has been prepared in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b).

The objectives of this CHIA are: to identify and describe the Aboriginal objects and/or Aboriginal places in the Project Application Area; to assess the significance of the Aboriginal and historic heritage present; to assess whether the proposed activity will harm Aboriginal objects and/or places or historic heritage sites; and to provide heritage management strategies which may include avoidance and mitigation.

1.1 The Project Application Area

This CHIA report has been prepared for the area subject to the proposed activity, herein referred to as the "Project Application Area" (**Figure 1**). The Project Application Area is located near the Angus Place Colliery pit top in the Lithgow Local Government Area (LGA), and encompasses four study areas which cover a total of 5030.5 ha of land (**Figure 2**). The largest of these is located on the Newnes Plateau to the east of the pit top area. The remaining three study areas are smaller, and are partially located on a valley floor comprising paddocks and pastoral land to the immediate north, south, and east of the pit top area.

The closest town, Lidsdale, is located approximately two kilometres (km) to the south west of the Project Application Area. The larger town of Portland is located approximately ten kilometres to the west.

1.2 Project Description

Centennial Angus Place is proposing to extend mining operations within the mine's current mining lease, which will lengthen the life of the mine. The overall objective of this Project is to obtain approval for the continuation of mining at the Angus Place Colliery. The objectives of the Project are as follows:

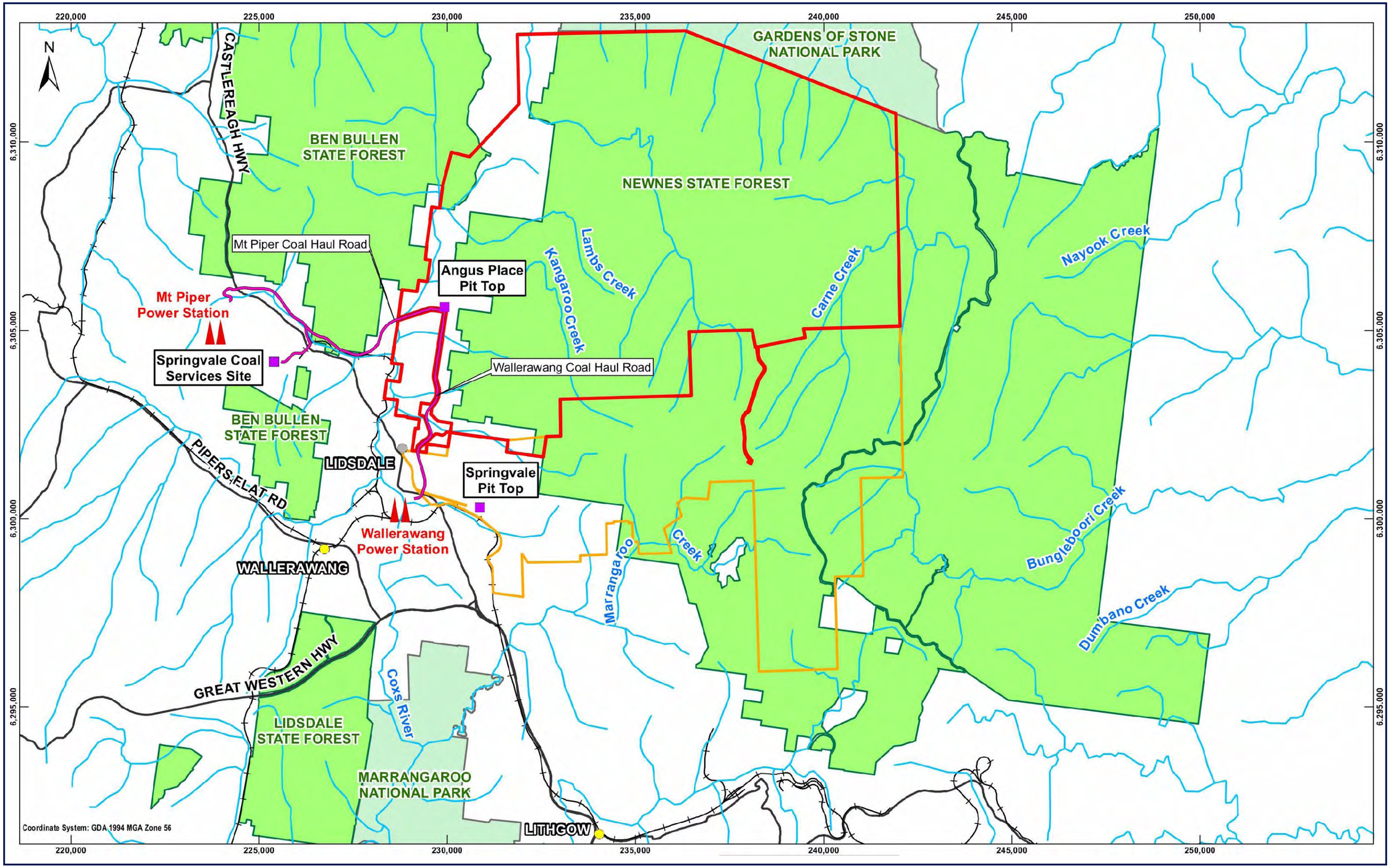
- Design of the extension project in accordance with ecological sustainable principles;
- Coal production of a total of up to four (4) million tonnes per annum (Mtpa) of coal from the Lithgow coal seam;
- Extraction of coal using longwall mining techniques from an area identified as Angus Place East within the Project Application Area (refer **Figure 1**);
- Construction and operation of the following facilities to support the extension Project:
  - A ventilation facility (APC-VS3) consisting of a single downcast (intake) shaft;
  - Dewatering borehole sites to deliver water into the existing Springvale-Delta Water Transfer Scheme;
  - Water management structures;
  - Shaft spoil emplacement area;
- Upgrade of access track from Sunnyside Ridge Road to the proposed ventilation facility (APC-VS3) and dewatering borehole sites; and
- Continue to provide employment of a full-time workforce of 225 persons and up to 75 contractors.

1.3 Authorship and Acknowledgements

This report has been written by suitably qualified heritage professionals in accordance with s1.6 and r1 of the *Code of Practice for Archaeological Investigation* (DECCW 2010b:4,20). This report was prepared by RPS Archaeologists Karyn Virgin and Deborah Farina with editorial assistance from RPS Archaeologist Ali Byrne. The report was reviewed by RPS Regional Technical Director Darrell Rigby. The project team acknowledges the assistance in preparing this report of various organisations and individuals, including but not limited to:

Table 1 Acknowledgements

Name	Organisation
Iain Hornshaw	Centennial Angus Place Coal Pty Ltd
Jack Pennell	Warrabinga Native Title Claimants Aboriginal Corporation
Chantel Peters-Chapman	Bathurst LALC
Elwin Wolfenden	Mingaan Aboriginal Corporation
Tim Lucas	Native Title Bathurst
Brendan Mingaan	Native Title Lithgow
Toni Wilcock	North East Wiradjuri
Jason Brown	Gundungurra Tribal Council Aboriginal Corporation



TITLE:	FIGURE 1: LOCALITY MAP	LOCATION:	ANGUS PLACE	DATUM: PROJECTION:	(GDA 94) MGA ZONE 56	DATE: PURPOSE:	24/01/2013 HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111285 Angus Place Extension \10. Drafting\MapInfo Workspaces\Report Figures
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CLIENT: CENTENNIAL COAL
JOB REF: 111285

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2.0 Legislative Context

Aboriginal heritage (places, sites and objects) in NSW are protected by the *National Parks & Wildlife Act 1974* (NPW Act) which is overseen by the Office of Environment & Heritage. Additional provisions are also covered in the *National Parks and Wildlife Regulation 2009.* In some cases, Aboriginal heritage may also be protected under the *Heritage Act 1977*, which is also overseen by the Office of Environment & Heritage. The *Environmental Planning & Assessment Act 1979*, along with other environmental planning instruments overseen by the Department of Planning and Infrastructure, trigger the requirement for the investigation and assessment of Aboriginal heritage as part of the development approval process. For Crown Land, provisions under the *Aboriginal Land Rights Act 1983* (overseen by the Office of the Registrar of the *Aboriginal Land Rights Act 1983*) and the *Native Title Act 1993* (administered by the National Native Title Tribunal) may also apply.

2.1.1 *National Parks and Wildlife Act 1974* (NPW Act)

The NSW Government is working towards stand alone legislation to protect Aboriginal cultural heritage which will be a significant reform for NSW. The first stage of this work has been completed and includes significant changes in relation to the regulation of Aboriginal cultural heritage management. The primary state legislation relating to Aboriginal cultural heritage in NSW is the *National Parks and Wildlife Act* 1974 (NPW Act). The legislation is currently overseen by the Office of Environment and Heritage (OEH).

Changes to the NPW Act were made effective on 1 October 2010 and include:

- Increased penalties for Aboriginal heritage offences, in some cases from $22,000 up to $1.1 million in the case of companies who do not comply with the legislation;
- Prevention of companies or individuals claiming 'no knowledge' in cases of serious harm to Aboriginal heritage places and objects by creating new strict liability offences under the Act;
- Introduction of remediation provisions to ensure people who illegally harm significant Aboriginal sites are forced to repair the damage, without need for a court order;
- Unification of Aboriginal heritage permits into a single, more flexible permit; and
- Strengthened offences around breaches of Aboriginal heritage permit conditions.

2.1.2 *National Parks and Wildlife Regulation 2009*

The *National Parks and Wildlife Regulation 2009* (NPW Regulation) provides a framework for undertaking activities and exercising due diligence in respect to Aboriginal heritage. The NPW Regulation outlines the recognised due diligence codes of practice which are relevant to this report, but it also outlines procedures for Aboriginal Heritage Impact Permit (AHIP) applications and Aboriginal Cultural Heritage Consultation Requirements (ACHCRs) (DECCW 2010a); amongst other regulatory processes.

2.1.3 *Heritage Act 1977*

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the *Heritage Act 1977* and may be identified on the State Heritage Register (SHR) or by an active Interim Heritage Order. Certain types of historic Aboriginal sites may be listed on the SHR or subject to an active Interim Heritage Order; in such cases they would be protected under the *Heritage Act 1977* and may require approvals or excavation permits from the NSW Heritage Branch.

2.1.4 *Environmental Planning & Assessment Act 1979* (EP&A ACT)

This Act regulates a system of environmental planning and assessment for NSW. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal heritage. Assessment documents prepared to meet the requirements of the *EP&A Act 1979* including Reviews of Environmental Factors, Environmental Impact Statements (EIS) and Environmental Impact Assessments (EIA) should address Aboriginal heritage, and planning documents such as Local Environment Plans (LEP) and State Environmental Planning Policies (SEPP) typically contain provisions for Aboriginal heritage where relevant.

In addition, Part 4, Division 4.1 of the EP&A Act regulates State Significant Development. This type of development must be designated as such upon application to the Minister for Planning, after which the Minister becomes the Consent Authority for the project, rather than the local council. One of the hallmarks of this type of development is that certain authorisations explicitly do not apply. Two of these are approvals under Part 4 or permits under s139 of the *Heritage Act 1977,* and AHIPs under s90 of the NPW Act (ss 89J (1)(c)-(d)).

2.1.5 *Aboriginal Land Rights Act 1983*

The purpose of this legislation is to provide land rights for Aboriginal people within New South Wales and to establish Local Aboriginal Land Councils. The land able to be claimed by Aboriginal Land Councils on behalf of Aboriginal people is certain Crown land that (s36):

(1) Is able to be lawfully sold, leased, reserved or dedicated;

(2) Is not lawfully used or occupied;

(3) Will not, or not likely, in the opinion of the Crown Lands minister, be needed for residential purposes;

(4) Will not, or not likely, be needed for public purposes;

(5) Does not comprise land under determination by a claim for native title; or

(6) Is not the subject of an approved determination under native title.

Claims for land are by application to the Office of the Registrar, *Aboriginal Land Rights Act 1983*.

2.1.6 *Native Title Act 1993*

The Commonwealth Government enacted the *Native Title Act 1993* to formally recognise and protect native title rights in Australia following the decision of the High Court of Australia in *Mabo & Ors v Queensland (No. 2) (1992)* 175 CLR 1 ("Mabo").

Although there is a presumption of native title in any area where an Aboriginal community or group can establish a traditional or customary connection with that area, there are a number of ways that native title is taken to have been extinguished. For example, land that was designated as having freehold title prior to 1 January 1994 extinguishes native title, as does any commercial, agricultural, pastoral or residential lease. Land that has been utilised for the construction or establishment of public works also extinguishes any native title rights and interests for as long as they are used for that purpose. Other land tenure, such as mining leases, may be subject to native title, depending on when the lease was granted.

Further details on the relevant legislative Acts are provided in **Appendix 1**.

3.0 Aboriginal Community Consultation

The purpose of Aboriginal community consultation is to provide an opportunity for the relevant Aboriginal stakeholders to have an input into the heritage management process. OEH encourages consultation with Aboriginal people for matters relating to Aboriginal cultural heritage. If an AHIP is required, then specific OEH guidelines are triggered in respect to Aboriginal consultation. In some circumstances, OEH consultation guidelines are also used as a framework for Aboriginal consultation, even if not specifically triggered by the preparation of an AHIP application.

In the case of this project, the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs) (DECCW 2010a) have been followed . The ACHCRs include a four stage Aboriginal consultation process and stipulates specific timeframes for each stage. Stage 1 requires that Aboriginal people who hold cultural information are identified, notified and invited to register an expression of interest in the assessment. This identification process should draw on reasonable sources of information including: the relevant OEH regional office, the relevant Local Aboriginal Land Council(s), the Register of Aboriginal Owners, the Native Title Tribunal, Native Title Services Corporation Limited, the relevant local council(s) and the relevant Catchment Management Authority, as well as placing an advertisement in a local newspaper circulating in the general location of the Project Application Area. Aboriginal organisations and/or individuals identified should be notified of the project and invited to register an expression of interest for Aboriginal consultation. Once a list of Aboriginal stakeholders has been compiled from the expression of interest process they need to be consulted in accordance with stage 2, 3 and 4 of the ACHCRs.

As there are a number of concurrent projects occurring across the Centennial Coal Western Holdings, the consultation process has been streamlined to include all active projects, rather than running multiple individual consultation processes. To this end, letters were sent to the relevant OEH regional office, the Bathurst Local Aboriginal Land Council, the registrar of Aboriginal owners, the Native Title Tribunal, Native Title Services Corporation Limited, Lithgow City Council and the Blue Mountains Catchment Management Authority requesting the identification of interested Aboriginal groups for projects involving Springvale, Angus Place, Neubecks Creek, Clarence, Lidsdale, Airly and Coal Services. As a result of contacting these organisations, Aboriginal community groups were identified as potentially having an interest in the project (**Table 2**).

An advertisement was also placed in the Lithgow Mercury on 6 October 2011 calling for registration of interest for Aboriginal Cultural Knowledge Holders in the Capertee, Blackmans Flat, Lidsdale and Newnes Plateau localities (**Appendix 2**).

Table 2 Letters inviting expressions of interest

Organisation	Name of Representative	Date contacted
Bathurst Local Aboriginal Land Council	Tonilee Scott	8/11/2011
Warrabinga/Wiradjuri People	Wendy Lewis; Marvia Agnew; Martin De Launey	8/11/2011
Gundungurra Tribal Council Aboriginal Corporation	Mervyn Trindall; Elsie Stockwell; Pamela Stockwell	8/11/2011
Dhuuluu Yala Aboriginal Corporation	-	8/11/2011
Gundungurra Aboriginal Heritage Association Inc.	-	8/11/2011
Gundungurra Tribal Council Aboriginal Corporation	-	8/11/2011
Hawkesbury-Nepean Catchment Management Authority (Aboriginal Reference Group)	-	8/11/2011
Mingaan Aboriginal Corporation	Sharon Riley	8/11/2011

Organisation	Name of Representative	Date contacted
Mooka Traditional Owners	Neville Williams	8/11/2011
North-East Wiradjuri	Lyn Syme	8/11/2011
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu	William (Bill) Allen; Joe Bugg; Stephen Riley; John Brasher	8/11/2011
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	8/11/2011
Wiradjuri Council of Elders	Helen Riley; Robert Clegg	8/11/2011
Wiradjuri Traditional Owners Central West Aboriginal Corporation	-	8/11/2011
Wiray-dyuraa Ngambaay-dyil	Bill Allen	8/11/2011

As a result of the invitation for expression of interest letters and the advertisement, ten Aboriginal parties registered their interest in the project (**Table 3**).

Table 3 Registered Aboriginal Parties who registered their interest

Organisation	Name of Representative	Date Report was Sent
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	07/06/2013
North East Wiradjuri Company Ltd.	Lyn Syme	07/06/2013
Bathurst Local Aboriginal Land Council	Tonilee Scott	07/06/2013
Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown	07/06/2013
Mingaan Aboriginal Corporation	Helen Riley	07/06/2013
Gundungurra Tribal Council Aboriginal Corporation Native Title Claimants	-	26/06/2013
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu	-	07/06/2013
Mooka Traditional Owners	Sharon Williams	07/06/2013
Wiradjuri Council of Elders	Sharon/Helen Riley	07/06/2013
Warrabinga/Wiradjuri People Native Title Claimants	-	26/06/2013

Information regarding the proposed heritage assessment methodology and strategy for collecting information on cultural heritage significance was provided in writing to the Aboriginal stakeholders on the on the 23 November 2011. Six groups returned their comments on the methodology by the closing date for comments (**Table 4**)

Table 4 Registered Aboriginal Parties who responded to the methodology

Organisation	Name of Representative	Date of Reply for Methodology due 23 December 2011
Mingaan Aboriginal Corporation	Helen Riley	07/12/2011
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	07/12/2011
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu	Sharon Riley	20/12/2011
Gundungurra Tribal Council Aboriginal Corporation	Jason Brown	21/12/2011
North East Wiradjuri Company Ltd.	Lyn Syme	21/12/2011
Bathurst Local Aboriginal Land Council	Tonilee Scott	21/12/2011

In addition, the letter of 23 November 2011 invited registered Aboriginal parties to attend an information session at Black Gold Cabins on 7 December 2011. This information session included a formal presentation of the relevant upcoming Centennial projects as well as a 'Questions & Answers' session in order to allow Aboriginal parties to clarify any heritage, methodological, or timing issues regarding the projects. The following representatives attended the information session on 7 December 2011 (**Table 5**).

Table 5 Registered Aboriginal Parties who participated in the information session on 7 December 2011

Organisation	Name of Representative
Gundungurra Tribal Council Aboriginal Corporation	Jason Brown
Mingaan Aboriginal Corporation	Elwin Wolfenden
North East Wiradjuri	Robyn Williams
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis
Wiradjuri Council of Elders	Helen Riley

According to the ACHCR process, a site survey should be undertaken with reference to the nature, scale, and complexity of the project. With these factors considered, it was deemed appropriate that the registered Aboriginal stakeholders be offered the opportunity to participate in a field visit to the Project Application Area. However, on 31 January 2012 it came to the attention of both the proponent and RPS that an altercation had taken place earlier that morning between two of the stakeholders whilst working on another project. As a result, the proponent suspended that survey, and elected not to invite stakeholders to take part in any further surveys until a Code of Conduct had been executed by all parties. By 26 March 2012 all parties had signed the Code of Conduct. The following representatives were invited to take part in the survey for as long as they thought necessary to cover areas they felt were important in relation to the Project Application Area (**Table 6**). As such, the RPS cultural heritage team undertook a series of field visits to the Project Application Area from 6 March to 13 April 2012. Aboriginal stakeholders were present at the site visits conducted between 3-5 April 2012 and 11-13 April 2012 (**Table 7**).

Table 6 Registered Aboriginal Parties invited to take part in the survey

Organisation	Name of Representative
Gundungurra Tribal Council Aboriginal Corporation	Thomas Brown
Warrabinga Native Title Claimants Aboriginal Corporation	Jack Pennell
North East Wiradjuri Company Ltd.	Toni Wilock
Mingaan Aboriginal Corporation	Tim Lucas
Bathurst Local Aboriginal Land Council	Chantel Peters

Table 7 Representatives of Registered Aboriginal Parties who participated in site visits to the Project Application Area

Organisation	Name of Representative	Date
Gundungurra Tribal Council Aboriginal Corporation	Nathan Brown	3-5 April 2012
Warrabinga Native Title Claimants Aboriginal Corporation	Jack Pennell	3-5 April 2012 11-13 April 2012
North East Wiradjuri Company Ltd.	Craig McConnell	3-5 April 2012
Mingaan Aboriginal Corporation	Tim Lucas Brendon Worrell	3-5 April 2012 11-13 April 2012
Bathurst Local Aboriginal Land Council	Tim Lucas	11-13 April 2012

A copy of the draft report was sent to the Aboriginal stakeholders listed in **Table 7**, providing an opportunity to comment on the significance of the Aboriginal sites identified.

Table 8 Registered Aboriginal Parties who received the draft report

Organisation	Name of Representative	Date Report was Sent
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	23/07/2013
North East Wiradjuri Company Ltd.	Lyn Syme	23/07/2013
Bathurst Local Aboriginal Land Council	Tonilee Scott	23/07/2013
Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown	23/07/2013
Mingaan Aboriginal Corporation	Helen Riley	23/07/2013
Gundungurra Tribal Council Aboriginal Corporation Native Title Claimants	-	23/07/2013
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu	-	23/07/2013
Mooka Traditional Owners	Sharon Williams	23/07/2013
Wiradjuri Council of Elders	Sharon/Helen Riley	23/07/2013
Warrabinga/Wiradjuri People Native Title Claimants	-	23/07/2013

Comments from the Aboriginal community stakeholders on the draft report were due on 20 August 2013. None of the Aboriginal stakeholder groups listed in **Table 8** responded with written comments on the draft report by this due date.

However, telephone calls were made to each of the Aboriginal stakeholder groups listed in **Table 8** on 8 August 2013. The following groups were able to be reached via telephone, and stated that they were satisfied with the draft report and had no additional comments to make: North East Wiradjuri Company Ltd, Bathurst Local Aboriginal Land Council, Mingaan Aboriginal Co-operation, Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu and Wiradjuri Council of Elders.

The following groups could not be contacted via telephone, and therefore did not make any verbal comments on the draft report: Gundungurra Tribal Council Aboriginal Corporation, Gundungurra Tribal Council Aboriginal Corporation Native Title Claimants, Mooka Traditional Owners, Warrabinga Native Title Claimants Aboriginal Corporation and Warrabinga/Wiradjuri People Native Title Claimants. None of these groups provided written responses relating to the draft report despite emails from RPS requesting them to respond. Further attempts were made to contact these groups via email, telephone and post on 5 September 2013; none of the groups were able to be contacted.

The final draft of this report was sent to all of the Aboriginal stakeholders listed in **Table 8** on 1 October 2013 with a request for comments to be provided by cob 29 October 2013. No comments were received by that date, so attempts were made to contact all groups requesting comment. The contact number provided for Warrabinga/Wiradjuri People Native Title Claimants was incorrect, therefore an email was sent requesting comment by cob 30 October 2013. All other stakeholders were contacted by telephone to see whether there was an intention to submit a comment on the final draft report. Only two groups expressed a desire to make a comment, being Sharon Brown of Gundungurra Tribal Council Aboriginal Corporation and Sharon Riley of Wiray-dyuaraa Ngambaay-dyil and Wiray-dyuraa Maying-gu. Lyn Syme of North East Wiradjuri stated that she did not receive the electronic copy sent to her email address. All three stakeholders of these stakeholders were requested to make comments by cob 30 October 2013. No comments were received by that date and time.

A full consultation log documenting the ACHCR process is located in **Appendix 3**.

4.0 Environmental Context

An understanding of environmental context is important for the predictive modelling and interpretation of Aboriginal sites. The local environment provided natural resources for Aboriginal people, such as stone (for manufacturing stone tools), food and medicines, wood and bark (for implements such as shields, spears, canoes, bowls, shelters, amongst others), as well as areas for camping and other activities. The nature of Aboriginal occupation and resource procurement is related to the local environment and it therefore needs to be considered as part of the cultural heritage assessment process. An assessment of the environmental context is required under the Code of Practice.

4.1 Geology and Soils

Aboriginal people often made stone tools using siliceous, metamorphic or igneous rocks. Therefore, understanding the local geology can provide important information regarding resources in the Project Application Area. The nature of stone exploitation by Aboriginal people depends on the characteristics of the source, for example whether it outcrops on the surface (a primary source), or whether it occurs as gravels (a secondary source) (Doelman et al. 2008).

The Blue Mountains area typically comprises deep incised gorges with sandstone bedrock, steep sided cliffs and pagodas, narrow incised valleys with spring fed creek lines and inter-bedded sandstone conglomerate rocks. The geology for the Project Application Area is primarily an undifferentiated mix of sandstone, shale and tuff, formed on the Narrabeen Group, laid down in the Triassic period. This is bounded by nearby deposits of the Illawarra Coal Measures laid down in the Permian period, comprising shale, sandstone, conglomerate and chert, with coal and torbanite seams and a quaternary alluvium of gravel, sand, silt and clay, found mainly along watercourses (Bryan, McElroy and Rose 1966).

The Project Application Area is situated over a number of soil landscapes including; Hassans Walls, Warragamba, Wollongambe, Cullen Bullen, Lithgow, Medlow Bath, Mount Sinai, Newnes Plateau, Deanes Creek, and Long Swamp. These soil landscapes occur in relation to specific landform elements such as swamps, cliffs, outcrops or terrace plains, and are associated with the natural geological processes that formed them. Swamp soil landscapes are characterised by seasonally wet soils, large amounts of decayed organic matter, and shallow water tables. They occur in association with swamps, abandoned channels and lagoons or swales, and are susceptible to waterlogging and high run-on (King 1994: 122). Swamp soil landscapes present in the Project Application Area include Deanes Creek and Long Swamp. In these soil landscapes, topsoil is typically 30 to 40 centimetres deep, and can either be a peaty loam, sandy clay loam, or sandy loam. Subsoil can be either sandy clay loam or coarse sand (King 1994: 127, 133).

Colluvial soil landscapes present in the Project Application Area include the Hassans Walls and Warragamba soil landscapes. Colluvial soil landscapes occur in association with alcoves, cliffs, cliff footslopes and scarps, and are therefore susceptible to mass movement, water erosion, and high-run on (King 1994: 52). Topsoil in these landscapes can be either loamy sand, sand, or clayey sand, and can be between 35 and 100 centimetres deep, depending on the landforms with which they are associated (King 1994: 54-55, 74).

Erosional soil landscapes are those which have been formed by the erosive action of running water and are associated with steep to undulating hillslopes; benches; areas of rock outcrop; and generally shallow soils (King 1994: 75). The Cullen Bullen and Wollongambe soil landscapes are erosional, and are characterised by sandy clay loam or loamy sand topsoils that are typically less than 60 centimetres (King 1994: 82-84, 105-108). Residual soil landscapes are associated with summit surfaces and terrace plains, and are susceptible to localised water erosion and high-run on (King 1994: 22; King 1992: 53-56). The Lithgow and Medlow Bath soils landscapes comprise sandy loam, clay loam, or organic-rich sand topsoils that overlie bedrock or clay subsoils, depending on associated landforms. This topsoil can reach a depth of approximately 40 centimetres (King 1994: 36, 39). The Newnes Plateau soil landscape is dominant in the Project Application

Area, and is also residual. This soil landscape comprises a loose quartz-rich sand A_1 horizon, reddish brown clayey sand A_2 horizon, and earthy sandy clay loam B horizon subsoil (King 1992: 29-33). Topsoil in this soil landscape, which encompasses both A_1 and A_2 horizon soils, can reach a depth of up to 100 centimetres.

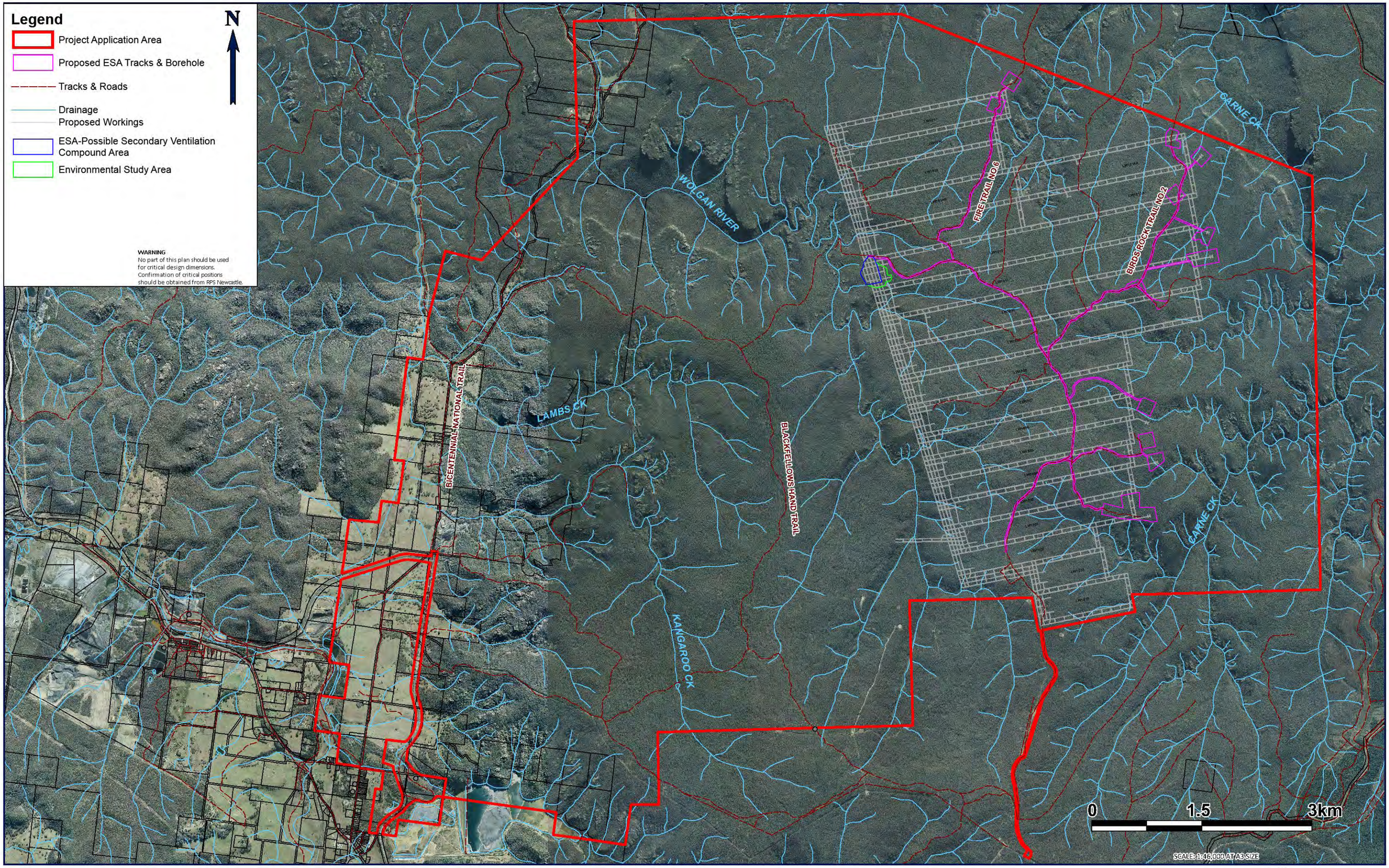
Vestigial soil landscapes are susceptible to extreme water erosion, wind erosion, and rock fall hazards as a result of their association with summit surfaces and plateaus. Soils are generally shallow, with topsoil depths of less than 20 centimetres and total soil depths of less than 70 centimetres (King 1994: 44). The vestigial Mount Sinai soil landscape is characterised by a loose pebbly quartz sand or brownish black loamy sand topsoil which overlies loamy sand topsoil or bedrock, depending on the associated landform (King 1994: 50).

It is not anticipated that Aboriginal artefacts will be present in subsoil layers. Therefore, potential archaeological deposits, if present, are likely to be limited to the topsoil layers of these soil landscapes.

4.2 Topography and Hydrology

The Project Application Area is dominated by high ridgelines and steep slopes intersected by narrow valleys and drainage lines. Elevation in this area ranges between 1000 and 1160 metres Australian Height Datum (AHD). Donkey Mountain and Mt Wolgan are located approximately 6 kilometres north of the Project Application Area and have maximum elevation of 900 metres AHD. The Blue Mountain Range and Sunnyside Ridge are also within the Project Application Area boundary but in between the study areas. Rounded crests and moderately to steeply inclined sideslopes, narrow crests, and localised rock outcrops in the form of small benches, cliffs, and scarps are typical in the area. Additionally, precipitous sandstone cliffs and characteristic pagoda rock formations above steep to very steep colluvial sidelopes are also common. Limitations associated with these landforms include high levels of water erosion, shallow soils, steep slopes, and the potential for mass movement and localised surface movement (King 1994: 53-56, 105-108).

The hydrology of the Project Application Area is defined by several major catchments. A number of rivers and high order creeks and their tributaries traverse the area which would have been accessible as drinkable water for Aboriginal people moving though the area. As such, there was enough water in the area to sustain at least seasonal habitation and it is considered that these resource zones were probably large enough to provide reliable water for most of the year. The major waterways and their tributaries are: the Wolgan River, Carne Creek, Deanes Creek and their tributaries in the east; Coxs River and a number of small and large tributaries in the west and Kangaroo Creek and Lambs Creek in the south-west (Department of Lands 2006) (**Figure 2**). High order water sources and their tributaries were often used by Aboriginal people in the past as suitable areas for camping and food and resource procurement. As such, the potential for archaeological sites and deposits to be found in their vicinity is generally high (Attenbrow 2003: 49).



TITLE: FIGURE 2: PROJECT APPLICATION AREA WITH STUDY AREAS

LOCATION: ANGUS PLACE

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 20/01/2014
PURPOSE: HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111285 Angus Place Extension\10. Drafting\MapInfo Workspaces\Report Figures
VERSION (PLAN BY): C A3 (KV-AB-NW)

CLIENT: CENTENNIAL COAL
JOB REF: 111285

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4.3 Climate

Approximately 18,000 years BP, climatic conditions began to alter which affected the movement and behaviour of past populations within their environs. During this time, notably at the start of the Holocene (more than 11,000 years ago), the melting of the ice sheets in the Northern Hemisphere and Antarctica caused the sea levels to rise, with a corresponding increase in rainfall and temperature. The change in climatic conditions reached its peak about 7,000 years BP (Lambeck, Yokoyama and Purcell 2002). Between 6,000 and 1,500 years ago, there was a slight increase in temperature, which then stabilised about 1,000 years ago and has since remained similar to the temperatures currently experienced. Consequently, the climate of the Project Application Area for the past 1,000 years would probably have been much the same as present day, providing a year round habitable environment.

The climate of the Newnes Plateau area is cool temperate climate, characterised by cold winters and warm summers. The warmest month is January, with an average maximum temperature of 23.9°C, whilst the coldest is July, with an average minimum temperature of 2.5°C. Snow and/or sleet are common in the winters. The wettest month is February, with an average of 113.9 millimetres, and the driest month is July, with an average monthly rainfall of 44.5 millimetres (Bureau of Meteorology 2012).

4.4 Flora and Fauna

The purpose of the following summary is to provide an indication of the types of flora and fauna which may have been available to Aboriginal people in the past for sustenance and raw material resources. It is based on broad scale vegetation mapping for NSW (Keith 2006), and does not replace more detailed ecological studies relevant to the area.

The Project Application Area is vegetated by the Sydney Montane Dry Sclerophyll Forest, which is characterised by a suite of open eucalypt forests and woodlands which grow 10 to 25 metres tall, with a diverse and distinctive sclerophyll shrub understorey and an open ground cover of shrubs and sclerophyll sedges (Keith 2006: 160). Indicative species of tree include the Blue Mountain ash, Sydney peppermint, hard-leaved scribbly gum and several species of stringybark. Shrub species commonly present include several species of wattle and geebung, as well as the broad-leaved bitter pea, Sydney waratah and crinkle bush. Typical herbs and grasses include the blue flax lily, leafy purple-flag, many-flowered mat-rush, and silvertop wallaby grass (Keith 2006: 161).

This vegetation community provides habitats for a variety of animals and would have also provided potential food and raw material sources for Aboriginal people. The leaves of the flax lily were boiled for tea and the roots and fruits were edible, the bark of the geebung was used to soak string and fishing line, and mat-rush was used to make woven baskets for fishing (Nash 2004: 4-8; Stewart and Percival 1997:42). Eucalyptus trees were a particularly important resource; leaves were crushed and soaked for medicinal purposes, bowls, dishes, and canoes were made from the bark, and spears, boomerangs and shields were crafted from the hard wood (Nash 2004: 4-8).

Typical animals which may have been present in the area and hunted by Aboriginal people include kangaroos, wallabies, wombats, sugar gliders, possums, echidnas, a variety of lizards and snakes, birds, as well as native rats and mice. The bones of such animals have been recovered from Aboriginal sites excavated in the Sydney region suggesting that they were sources of food, although the hides, bones and teeth of some of the larger mammals may have been used for Aboriginal clothing, ornamentation, or other implements (Attenbrow 2003:70-76).

4.5 Synthesis

A review of the environmental context indicates that rich food and raw material sources are available on the plateau and in the nearby valleys and thus this area would probably have been a favourable area for Aboriginal occupation. In particular, the location of the plateau with reliable water sources and the abundance of plant and animal life, plus the presence of rockshelters would have provided adequate food, water and shelter. Some areas have been highly modified but the soil landscape suggests that the Project Application Area has the potential to contain *in situ* subsurface artefact deposits where the soils remain deep and have not been disturbed. Additionally, there are areas of intact vegetation and these areas may possibly contain scarred trees. The geology underlying the Project Application Area would have provided raw materials suitable for the manufacture of stone tools. The Illawarra Coal Measures in the area are known to produce chert and interbedded sandstone conglomerate from which quartz could be procured. Both chert and quartz were favourable raw materials for tool production. An overview of the environmental context of the Project Application Area indicates that there are rich food and raw material sources available that would have made it a favourable area for Aboriginal occupation.

5.0 Historic Heritage Context

5.1 Regional Historic Heritage Context

Lithgow Valley's first European settlers arrived in 1824 and the town was named in 1827 by the explorer Hamilton Hume, in honour of William Lithgow, Governor Brisbane's private secretary (Leslie 1988:6). Settlement in the area was slow; by 1860 only four properties were settled in the valley (Cremin 1989:35). In 1838, one of the owners of those properties, Andrew Brown of "Cooerwull", wrote in his diary "getting coal" (Cremin et al. 1987:3). This is the first written record of coal in the Lithgow Valley.

The town began to thrive after 1869, when the western railway line was extended to Lithgow. Construction of the railway line into the Lithgow Valley commenced in 1866. After its completion in 1869, the Zig Zag Railway was acclaimed as a major engineering feat (Leslie 1988:19).

In 1868, the construction of the railway line through the Valley spread workmen who built their campsites close to the cuttings, embankments and viaducts throughout the length of the valley. To supply their needs for cooking fires and for heating during the winter, Mr. Poole in 1868 opened the Hermitage Colliery as the first commercial mine to engage in mining and selling coal. By 1874, there were four mines producing - Eskbank Colliery (at the eastern end of Main Street near the present Hoskins Church), the Lithgow Valley Colliery, Vale of Clywdd Colliery and the Hermitage Colliery. The owners of the Lithgow Valley Colliery secured contracts to supply coal to the Railways to run their locomotives. The exportation of coal also became commercially viable with the construction of the railway line.

Also following the arrival of the railway, other heavy industries began appearing in the area, such as iron-making, copper-smelting and brickworks. These industries brought more workers to the town, which in turn brought with them services such as banking, medicine supplies, breweries and other food and drink suppliers (Cremin, 1989:36). Living conditions for the workers were basic and were described thus:

> *"...the miners' homes in this spot being perhaps less comfortable than picturesque. Their habitations are for the most part, huts of mud or wood; but some, manifesting an Arab-like independence, apparently prefer to live in tents."* (NSW Railway Commissioner's Railway Guide to NSW in Cremin 1989:36).

By 1900, Lithgow boasted nine hotels, three banks, a municipal water supply and gaslights in the main street. The population increased from 5,628 in 1901 to 8,196 in 1911, increasing the pressure on housing. In 1908, the sale of a portion of Cooerwull, one of the earliest settled properties in the area, provided an increase in the amount of available residential land; however it was only marginally successful in easing the demand. By 1911, rents were high and only 31% of residents owned their house (Cremin 1989:39).

The population peaked in 1929 at 18,000 people, making it the fourth-largest town in New South Wales, behind Sydney, Newcastle and Broken Hill. Housing was still an issue, increasing the impact of the Great Depression, leading to open spaces being turned into shanty towns as the homeless and unemployed gathered. This was exacerbated by the outbreak of the World War II, as although it led to employment at the Small Arms Factory and collieries, existing housing could not accommodate the incoming labour force (Cremin 1989:40).

Lithgow was declared a city in 1945. By that time, much of the heavy industry was gone, although light industry continued to prosper. Many of the collieries began closing in the 1950s, with five (Cobar, Eskbank, VOC, State and Steelworks) closing between 1957 and 1963 (Cremin et al. 1987: 40).

5.1.1 Coal Mining in the Lithgow Region

The 1838 coal reference by Andrew Brown is the first written record of it in the Lithgow Valley. In 1868, the construction of the railway line through the Valley spread workmen who built their campsites close to the cuttings, embankments and viaducts throughout the length of the valley. To supply their needs for cooking fires and for heating during the cold winter, a Mr. Poole in 1868 opened the Hermitage Colliery as the first commercial mine to engage in mining and selling coal. By 1874, there were four mines producing - Eskbank Colliery (at the eastern end of Main Street near the present Hoskins Church), the Lithgow Valley Colliery, Vale of Clywdd Colliery and the Hermitage Colliery. The owners of the Lithgow Valley Colliery secured contracts to supply coal to the Railways to run their locomotives.

The nature of coal as a low value, high volume resource necessitates that it must be able to be delivered in bulk or to be located near to established transport infrastructure. In NSW, especially in the Western Coalfields region, it meant that railway networks needed to be developed. The failure of several coal mines in the Cullen Bullen region prior to the development of the Wallerawang-Mudgee railway line is testament to the importance of developing bulk haulage networks for coal (Christison 2003:7).

The railway reached Wallerawang in 1870. The Cobb and Co. Coach Service provided transport between the station at Wallerawang, Bathurst and Mudgee, utilising the route approximating the current Castlereagh Highway. The exploitation of coal reserves began in Wallerawang around 1873 with a number of mines being opened on the Lithgow seam at Mount Piper, mid-way between Wallerawang and Lidsdale. Completion of the Wallerawang – Mudgee railway branch line in the 1880s coincided with the rapid growth of the coal mining industry in the Western Coalfields. The Lithgow coal seam outcropping was variable in nature between Lidsdale and Portland where it was predominantly expressed in clay shales. The seam became workable once again at Irondale (Carne 1908:201). The mines in the Wallerawang district generally followed the railway line and included Irondale Colliery (1883), Ivanhoe Colliery (1893) and the Commonwealth Colliery (1895), which became the first open cut mine in NSW during World War II (1940). In addition were the Cullen Bullen and Invincible coal mines nearby. The Lithgow coal seam quality was best in its deepest portions, which at Cullen Bullen exhibited an average thickness of four feet, but at both Irondale and Ivanhoe had little more than one foot that was workable (Carne 1908:201).

The accessibility of the Lithgow coal seam at various localities in the region dictated that mines and mining communities developed in close proximity to one another. The best example is at Lithgow, where colliery headworks were located within 100-200 metres of one another (Christison 2003:9). Generally, coal mines between the years 1831-1946 were worked using manual labour with a large number of workers mostly employed on contract or piecework arrangements. Miners would normally walk or ride a horse or bicycle to their work place and were expected to provide their own mining tools and equipment (Christison 2003:29).

5.1.2 Oil Shale Mining in the Region

The first shale oil deposits in NSW were discovered in 1815, and full-scale mining in the area had begun within the next decade. During the 1860s and 1870s, production was at its peak at the Mount Kembla, Joadja, Katoomba, and Hartley Vale mines. Gradually, however, production at these older mines waned, and by the 1890s mine lease holders were actively seeking alternate mining sites. Rich coal seams were identified near Capertee, and in 1896 the mining leases at Genowlan and Airly Mountains were acquired by the Australian Kerosene Oil and Mineral Company (of the Joadja and Katoomba mines) and the Hartley Vale Company (NSW Shale and Oil Company) (Mills 1998: 9).

The Airly Mine was renamed by the Hartley Vale Company as the ‘New Hartley Shale Mine’. Shale from this area required more complex processing than the shale that had been extracted from the old Hartley Vale mine. Consequently, a new retort design was developed and plans to construct the Torbane Retort Complex and an associated private railway were underway by 1898.

In 1913, following several tumultuous years of poor export demand, multiple strikes, disputes between the management and mine workers, and a steady decline in the supply of shale and mine productivity, the New Hartley Shale Mine and Torbane Retort Complex were shut down. In the early 1920s, salvageable items from the mine were removed and relocated to more productive mines at nearby Newnes.

The Newnes mines, located in a remote area of the Wolgan Valley, were established in 1906 and provided a readily accessible source of shale. After an initial investment of $800 into the development of these mines by Sir George Newnes of the Commonwealth Oil Corporation, the mines and the town of Newnes flourished, with the mines producing almost 70,000 tonnes of shale per year by 1912. Operations were suspended in 1912 due to increasing financial difficulties, and ownership of the mines was taken up by John Fell and Company. Production was revived, and continued successfully under Fell until the early 1920s. At this time, shale mining in the area decreased dramatically due to the high cost of shale production and continuing labour problems (Mills 1998: 9). Firebricks from the Newnes mines were relocated to the Clyde Refinery at Duck Creek, and the retorts and engines were moved to the Glen Davis mine in 1939 (Mills 1998: 10).

5.2 Local Historic Heritage Context

The township of Newnes was established in association with the commencement of mining in the area. During the early operational years of the Commonwealth Oil Corporation, the population of Newnes grew rapidly and numbered just over one thousand six-hundred in 1911.

As the production of the mines increased in the first decade of the 1900s, a major period of development and construction occurred at Newnes. 1907 was a particularly busy year, and saw the construction of a general store, newsagency, hairdressing salon, school, two butcher shops, a livery stable, a hop saloon, a billiard hall, a primary school, the local police station and post office (Taylor 1987: 30-31).

With the liquidation of the Commonwealth Oil Company, the population of Newnes decreased dramatically; only 200 or so citizens remained by 1914. A population revival occurred following the outbreak of World War I and the re-opening of the oil works, but this was short lived; the town declined again following the cessation of mining operations in 1923. By 1926 most of the mine workers and their families had left the area. The train service was discontinued in 1926 and the town's telephone services were removed in 1928 (Taylor 1987: 43).

During the 1930s and depression years, the Newnes township was largely dismantled for re-erection in nearby communities including Rylstone, Kandos and Lithgow. Mining operations ended permanently by 1939 and in the 1950s and 60s, the structural remnants of the Newnes Township were demolished.

5.3 Historic Heritage Registers

Historic heritage is recorded in a number of ways/places including the Australian Heritage Database, which is an online database of items listed under the Commonwealth Heritage List, National Heritage List and the Register of the National Estate, along with a variety of State and local heritage registers and organisations.

5.3.1 National Heritage

The National Heritage List is now the lead statutory document for the protection of heritage places considered to have national importance. This list comprises Indigenous, natural and historic places that are of outstanding national heritage significance to Australia. Listed places are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

A search of the National Heritage List (Australian Government 2012: Online) indicates that there are no items within the Lithgow LGA on the National Heritage List, and consequently no items on the National Heritage List in the Project Application Area.

5.3.2 Commonwealth Heritage

The Commonwealth Heritage List is a list of natural, Indigenous and historic heritage places owned or controlled by the Australian Government. These include places connected to defence, communications, customs and other government activities that also reflect Australia's development as a nation. As neither the Project Application Area nor adjacent areas are owned by the Commonwealth, there are no items in the Lithgow LGA or in the Project Application Area listed on the Commonwealth Heritage List.

The Australian Heritage Database is an online database of items listed under the Commonwealth Heritage List, National Heritage List and the Register of the National Estate Archive. A search of the Commonwealth Heritage List indicated that there are no items listed in the Project Application Area.

5.3.3 State Heritage

Heritage items in NSW may be registered as important at the State level and/or at the local level. The Heritage Council has developed a set of seven criteria to help determine whether a heritage item is of State or local significance to the people of New South Wales. Items are assessed by the Heritage Council of NSW, and if deemed eligible for listing, i.e. are of State significance, they are referred to the Minister for Heritage for Listing on the State Heritage Register, a statutory register of heritage items created by the NSW *Heritage Act 1977*.

Some heritage places and items that do not reach the threshold for listing on the State Heritage Register may be of heritage significance within a local government area. These places are listed by local council under their LEP and additionally may be included on the NSW Heritage Inventory database.

The NSW Heritage Inventory database is maintained by the NSW Heritage Office and lists items that have been identified as of State and local heritage value throughout NSW. A search of the State Heritage Register revealed that there are 26 items of State significance in the Lithgow LGA, but that none of these are located within the Project Application Area, Additionally, a search of the s.170 State Government Agency Heritage and Conservation Register revealed 42 sites within the Lithgow LGA, however, none of these items are within the Project Application Area.

5.3.4 Local Heritage

Searches of the Heritage Branch, OEH State Heritage Inventory, and the Lithgow City Local Environmental Plan revealed a total of 100 Local Heritage Items within the Lithgow LGA. None of these were located inside the Project Application Area.

5.4 Conclusion

As there are no registered heritage items within the vicinity of the Project Application Area, it is considered that there are no historic heritage constraints associated with the proposed works.

6.0 Aboriginal Heritage Context

Aboriginal heritage assessment process requires that the significance of Aboriginal sites with the Project Application Area is assessed. It is important that Aboriginal sites are contextualised within the local and regional landscape in order to inform the assessment of significance. The Aboriginal heritage context is also needed in order to develop a predictive model of Aboriginal sites in the Project Application Area. Historical information provides additional information for the interpretation of archaeological sites. A glossary of Aboriginal site types is available in **Appendix 4**.

6.1 Historic Records of Aboriginal Occupation

It is important to acknowledge that early historical documents were produced for a number of reasons and thus may contain inaccuracies and/or bias in their reporting of events or other aspects of Aboriginal culture (L'Oste-Brown, Godwin and Poter 1998). Nonetheless, some historical documents provide important information and insights into local Aboriginal customs and material culture at the time of non-Indigenous settlement and occupation of the region.

6.2 Ethnohistory

6.2.1 Pre European Contact

A number of distinct Aboriginal groups occupied the Sydney Basin when the First Fleet arrived in 1788. The Blue Mountains region was home to three large language groups: the Dharug, the Wiradjuri and the Gundungurra.

Although tribal boundaries are now uncertain, it is thought that the Dharug people occupied much of the Sydney area. It is known that there were two Dharug dialects, one used between Sydney Harbour and Botany Bay, and the other spoken to the west towards the Hawkesbury, Blue Mountains and Nepean districts (the latter known as Muru-Murak or 'Mountain pathway') (Murray and White 1988). The Wiradjuri people were the largest language group in New South Wales, with dialects spoken from Coonabarabran in the north, the Murray River to the south, western Blue Mountains in the east and Condobolin in the west. The Gundungurra people lived chiefly in the southern highlands, but reached as far north as western Sydney near Liverpool, west to parts of the Blue Mountains and south to Lake George.

Although separate nations, all three language groups were neighbours and shared certain similarities with other Aboriginal groups in south-eastern Australia. Plants were used for food, as well as in the manufacture utilitarian items, decorative items and medicines, with some species providing more than one resource. Grass stalks could be used for weaving or basketry. Large trees provided bark and fibres which were used for tools, containers and possibly the construction of watercraft, whilst resinous saps from Grass Trees, for example, were an adhesive used in the hafting process. Bark fibres were twisted into twine which could then be woven into traps, containers or baskets and a variety of wooden tools. Stone was also used for tools.

The Blue Mountains offered a variety of resources to Aboriginal people, including flora, fauna and stone material. Evidence from the Newnes Plateau suggests that as it contains many low gradient land surfaces, it was likely to have been a favoured area for occupation (Gollan 1987:29). The model for prehistoric occupation developed by Bowdler (as cited in Gollan 1987:27) found that, contrary to expectation, flora and fauna resources on the Plateau would have been at their best in the winter months, when the carbohydrate load of swamp plants is maximum and prey species such as the swamp rat and wombat have their breeding season. Summers may have been spent on the eastern slopes or in the Hawkesbury estuary (Gollan 27-28).

Men and women in Aboriginal communities had distinct roles in the hunting and gathering of food resources. Men were responsible for hunting possums, fish, birds and kangaroo, and at times collaborated with other

bands to hunt and eat the larger animals. Fire was used at times to reduce the vegetation in order to catch game. Women often harvested plant foods especially yams, which were a staple food, by means of digging sticks (National Parks and Wildlife Service NSW 2003:189).

Gunyahs or bark huts were usually made from the broad leafed paperbark, box or stringybark trees and were erected mostly by women. They were generally located close to a reliable fresh water source or opportunistically situated on trade routes. Rockshelters are common in the Blue Mountains region, and would have been occupied periodically as shelter or in association with open camp sites. Campsites were places used for sleeping, eating, tool making, social activity and as a base for hunting and gathering (Mid Mountains Historical Society 2007). Resources gathered within an area may have been reserved to be traded with members from neighbouring tribes for items not readily available to them.

Summer weather would generally have required little in the way of protective clothing, the milder days of autumn and spring required more in the way of protection against frequent cool winds. Winter, however, saw the use of animal skins for both clothing and as blankets. These resources were exploited seasonally and included using the by-products of hunting activities, such as the skins from possums, kangaroos and probably koalas for items such as cloaks (Murray and White 1988).

6.2.2 Post European Contact

Initial contact between the European settlers and the Dharug people occurred in 1791 when Governor Phillip's party arrived at the banks of the Hawkesbury. At this time the settlers were greeted peacefully by the Aboriginal population. Captain Watkins Tench and Second Lieutenant William Dawes, two early explorers, made plans to explore the Blue Mountains and were ferried across the river by Aboriginal people in bark canoes (Mid Mountains Historical Society 2007).

In 1794, 22 European settlers obtained land along the shorelines of the Hawkesbury-Nepean. Within a year there were 546 people occupying the banks of the river which accounted for the main source of the colony's food supply. This area was also an important source of food for the Dharug people (Mid Mountains Historical Society 2007).

Initially, when white explorers entered the Blue Mountains they did not record any large groups of Aboriginal people being in residence. Aboriginal presence was noted by Blaxland in 1814 in the valleys where he heard people calling (Gollan 1987). However, in an expedition in 1802 Barrallier, who met and observed Aboriginal people in the Wollondilly Valley, was escorted out of the Blue Mountains by an Aboriginal guide who had knowledge of the tracks leading to the coast.

Three Frenchmen; Quoy, Gaudichaud and Pellion travelled across the Blue Mountains to Bathurst where they encountered Aboriginal people in the Springwood area. Pellion made drawings of those they encountered, including Karadra, a sick old man lying on kangaroo skins near a fire and receiving attentions from a younger man. It was recorded that a local man was peacefully disposed towards the explorers (Mid Mountains Historical Society 2007).

Windradyne (c.1800-1829) was an Aboriginal resistance leader, also known as "Saturday". He was a northern Wiradjuri man of the upper Macquarie River region in central-western New South Wales (First Australians ND).

On arrival of the first settlers, Windradyne attempted to peacefully communicate with the Europeans. Windradyne had Wiradjuri people befriend the new settlers and assist them with areas to camp. However, when the Europeans began to clear the land, it became obvious to the Aboriginal people that their arrival to Australia was not on a temporary basis. The settlers started destroying the environment, including sacred places, Windradyne was determined not to let the settlers destroy or take land which belonged to the Wiradjuri. Following a conflict many of the Wiradjuri surrendered to the British, but Windradyne was able to

elude capture. In 1824 Windradyne and 130 Wiradjuri warriors walked for 17 days from Bathurst across the Blue Mountains and into the settlement of Parramatta to attend an annual gathering of Aboriginal peoples. On arrival, Windradyne had the word 'peace' stuck in his hat (First Australians, ND). He was accepted by the British as a result of this encounter.

6.3 Regional Archaeological Heritage Context

In 1987, the National Parks and Wildlife Service commissioned a regional archaeological study of the Newnes Plateau region in order to provide a comprehensive assessment of the archaeological resources of the area and their regional and local significance (Gollan 1987). Through this research, a number of regional archaeological patterns based on the relationship between site types and land use were identified.

Gollan (1987) concluded that at a regional level, the plateau area provided suitable resources for Aboriginal occupation (Gollan 1987:114-120). He suggested that artefact scatters (and isolated finds) are likely to be found on fringes of swamps because lithic material and food resources were available in these areas. This is evidenced by the predominance of sites in association with these areas. It was found that there was evidence of the grinding of stone artefacts on the plateau with several grinding groove sites and ground edged artefacts recorded. Shelters with art were also present in areas of the plateau where suitable rock types such as pagodas and interbedded sandstone and claystone rock outcrops were found (Gollan 1987:118).

Gollan considered the plateau to be of high scientific and social significance based on the diversity of Aboriginal cultural heritage sites in the area (Gollan 1987:130). At a regional level, Gollan was of the opinion that the plateau area was important with respect to both inter-site as well as intra-site diversity (Gollan 1987:131). Gollan described the forested upland areas as having the potential to have provided substantial archaeological resources for an upland hunter/ gatherer economy (Gollan 1987:114).

A predictive archaeological model undertaken in the Clarence Outbye Area (RPS HSO 2008) showed that 80% of shelter sites were located along minor drainage lines and 20% along major drainage lines; 80% of artefact scatters were identified near smaller tributaries and only 16% along major drainage lines. Scarred trees were found on moderate slopes close to the 1000 metre elevation and axe grinding grooves were located just below ridges at high elevations.

At a regional level, the Blue Mountains area was therefore able to provide shelter and a resource-rich habitat – as evidenced by the distribution of sites in the gently sloping and relatively flat swamp margins, low lying crest areas, flat lying ridge tops, and rocky outcrops lining the various water courses.

6.3.1 Regional Archaeological and Heritage Studies

6.3.1.1 Lidsdale Open Site Excavation

This report details open site excavations that were conducted in the vicinity of Lidsdale in preparation for road works in the area (OzArk Cultural Heritage Management 2003). It involved the excavation of registered AHIMS sites #45-1-2573 and #45-1-2574, and resulted in the recovery of almost 6100 flaked stone artefacts across an area of 150 square metres. The most dominant raw materials in the assemblage were quartz (n=3371), silicified tuff (n=2011), and a stone material identified as being between quartzite and silcrete (n=190). Lesser numbers of artefacts manufactured from quartzite, silcrete, fine-grained siliceous materials, igneous rock and ochre were also recorded. In addition to stone flakes, distinctive artefact types that were recovered included backed artefacts, a flake from a hatchet head, and several hammers and anvils.

During excavation, Optically Stimulated Luminescence (OSL) dating techniques were used on sediment from AHIMS site #45-1-2574. This resulted in a date range of 6700-8100 years BP for artefacts recovered from spits 1 and 2 (up to 40 centimetres below ground surface). In Area 1, which was the largest excavation area,

OSL was used on sediment from spit 3 (45 centimetres below ground surface), and yielded a date range of 12500-14500 years BP. Artefacts derived from this spit and the spit below appeared to be pre-Bondaian in age based on the absence of backed artefacts. Higher frequencies of artefacts manufactured from quartzite and igneous material were found in these spits.

6.3.1.2 W5 and W6 Open Site Excavations

This report details the results of open site excavations conducted by Silcox in 1988 (Silcox 1989: 10-11) at sites W5 and W6. At site W5, quartz was the dominant lithic material excavated, followed by indurated mudstone. At site W6, a total of seven artefacts were recovered. This included five pieces of quartz, a broken chert flake, and a water worn cobble hammer stone.

6.3.1.3 Marrangaroo Open Site Excavations

Excavations at Marrangaroo Creek were undertaken by Rich (1983) at the site of a surface artefact scatter. In total, 15 trenches were excavated across three locations, yielding a total of 66 stone artefacts including four cores. Indurated mudstone was the most dominant raw material type, accounting for 47% of artefacts. Quartz was also well represented and accounted for 44% of the total assemblage. Siltstone and chert artefacts were also present, collectively accounting for 7.5% of artefacts. The highest number of artefacts recovered from a single trench was 19.

6.3.1.4 Walls Cave Rockshelter Excavation

Both flaked and backed stone artefacts, including two Bondi points, were excavated by Stockton (1974) at the Walls Cave rockshelter in 1974. A well sealed cluster of charcoal was excavated in association with the two Bondi points, and yielded a radiocarbon date of 3360 ±100 years BP. These excavations also allowed for initial occupation of the shelter to be radiocarbon dated to around 12000 ±350 years BP.

6.3.1.5 Lyre Bird Dell Rockshelter Excavations

The Lyre Bird Dell rockshelter excavations were conducted by Stockton in 1974. Two rockshelters were excavated at this location. Rockshelter La was identified as the main shelter, and rockshelter Lb identified as a secondary shelter. Radiocarbon dating initially found that occupation of rockshelter La was approximately around 12550 ±145 years BP. At the time of excavation La had been modified by the installation of a drain and retaining wall and general public use. Consequently evidence of subsequent occupation was thought to have been disturbed. In total, 500 stone flakes were recovered and approximately dated to 5000 years old (Capertian).

Occupation of rockshelter Lb, the smaller of the two, was also able to be dated, with a charcoal sample taken from the site producing a radiocarbon date of around 530 ±80 years BP. Assemblage analysis led to the conclusion that the occupation of this site was Bondaian.

6.3.1.6 Kings Table Rockshelter Excavation

The Kings Table Rockshelter excavations, also conducted by Stockton in 1974, resulted in the identification of several occupation phases and the recovery of 3464 stone flakes, 32 complete Bondi points, and seven ground stone axe fragments. Chert and quartz were the dominant raw materials, though quartzite and basalt were also present. Phase II of the site, which contained 474 stone flakes and Bondaian material, was radiocarbon dated to 980±70 years BP. A total of 144 flakes, a geometric microlith, and two ground axe fragments were recovered from Phase VI, which was radiocarbon dated to 1075±90 years BP. The oldest layer of occupation, Phase VII, yielded two radiocarbon dates of 14534±300 years BP and 22240±1000 years BP, and 47 stone flakes were recovered from this layer.

6.3.1.7 Horseshoe Falls Rockshelter Excavation

The Horseshoe Falls Rockshelter Excavations, again undertaken by Stockton in 1974, resulted in the recovery of 375 stone flakes and 20 stone tools. The dominant raw material in the assemblage was chert, which accounted for over 60% of all artefacts. Quartz was also well represented, with just over 30% of all artefacts having been manufactured from this material. Stratification at the site was not clear, and although a radiocarbon date was obtained during the excavations (7280±230 years BP), it was thought by Stockton to be associated with displaced material from an earlier occupation floor.

6.3.1.8 Springwood Creek Rockshelter Excavation

A range of stone artefacts was recovered and reliable sequences of occupation dates were obtained at the Springwood Creek rockshelter. In total, 717 stone flakes, nine Bondi points, a geometric microlith, and several scraper tools were recovered. The dominant raw material in this assemblage was chert, though large quantities of artefacts manufactured from quartz were also present.

A total of six occupation phases were identified; Phases I-IV, identified as Bondaian, yielded radiocarbon dates of 615±80 years BP (20 centimetres below ground surface) and 2930±165 years BP (40 centimetres below ground surface). Phases V-VI, identified as Capertian, yielded radiocarbon dates of 6050±170 years BP and 8730±330 years BP (> 70cm below ground surface). It was concluded that there was a break in occupation at this rockshelter between the two phases.

6.3.1.9 Shaws Creek Rockshelter Excavation

Rockshelters K1 and K2, at Shaws Creek are located near the Nepean River in the Blue Mountains. Rockshelter K1 contained approximately 6000 stone flakes per cubic metre of excavated deposit. The stratification of this deposit was unclear. A charcoal sample collected at Rockshelter K2 was radiocarbon dated to 14700±250 years BP. Artefacts recovered from this rockshelter were manufactured predominantly from chert and quartz.

6.3.1.10 Lapstone Creek Rockshelter Excavation

The accumulated deposit at Lapstone Creek, excavated in 1936 (McCarthy 1948), is notable for the absence of well-defined stratigraphy offset by evidence of continuity in manufacturing techniques and artefact types. This allowed for the artefact assemblage to be defined based on artefact characteristics and composition rather than stratigraphic origin, and led to the identification of two distinctive cultural periods in Aboriginal prehistory; Bondaian and Eloueran.

6.4 Local Archaeological Heritage Context

The local Aboriginal heritage context provides a review of previous archaeological work conducted in the local landscape, determines whether Aboriginal sites have been previously identified in the Project Application Area and informs the predictive model of Aboriginal sites for the Project Application Area. The review of previous archaeological work includes relevant local research publications and archaeological consultancy reports. Two types of archaeological investigations are generally undertaken: excavations and surveys. Archaeological excavations can provide high resolution data regarding specific sites, such as the dates or chronology of Aboriginal occupation and information on stone tool technology, such as reduction sequences, raw material use, tool production, usewear and retouch. Archaeological surveys generally cover wider areas than excavations and can provide important information on the spatial distribution of sites. The detection of sites during survey can be influenced by the amount of disturbance or erosion and therefore sensitivity mapping is sometimes also required to interpret survey results. The local Aboriginal heritage context also provides a context for assessing archaeological significance of sites.

6.4.1 Aboriginal Heritage Information Management System (AHIMS)

Several searches of the AHIMS database were undertaken on the 8th and 28th of February 2012, and more recently to ensure the currency of the data 9th April 2013. The co ordinates searched were GDA Zone 56 Eastings 227181 to 242714 and Northings 6301570 to 6313570. A total of 73 sites were identified within the search parameters, however, one site was identified as a "European stone arrangement" and listed as "*Not an Aboriginal site". C*onsequently, it has been deleted from the overall AHIMS site count and the total number of sites adjusted to 72 (**Table 9**, **Figure 3**).

Table 9 Summary of AHIMS Sites within the searched co-ordinates

Site Type	Quantity	Percent
Shelter with Deposit	33	45.8%
Shelter with Art	10	13.9%
Artefact(s) Unspecified	10	13.9%
Isolated find	6	8.3%
Scarred Tree	4	5.6%
Shelter with Deposit; Art	2	2.8%
Shelter	2	2.8%
Potential Archaeological Deposit (PAD)	2	2.8%
Shelter with deposit; grinding groove	1	1.4%
Shelter with Art; grinding groove	1	1.4%
Stone Arrangement	1	1.4%
Total	**72**	**100%**

The total number of sites inside the Project Application Area boundary numbers 49 (**Table 10**). Of these 49 sites, only 14 sites were situated within any of the survey units in the four study areas (**Table 11**). Both tables list the types of sites present and provide a percentage of the total in order to demonstrate the frequency of each site type.

Table 10 Summary of AHIMS Sites within the Project Application Area

Site Type	Quantity	Percent
Shelter with Deposit	29	59.2%
Shelter with Art	9	18.4%
Isolated find	2	4.1%
Shelter with Deposit; Art	2	4.1%
Artefact(s) Unspecified	1	2%
Scarred Tree	1	2%
Shelter	1	2%
Potential Archaeological Deposit (PAD)	1	2%
Shelter with deposit; grinding groove	1	2%
Shelter with Art; grinding groove	1	2%
Stone Arrangement	1	2%
Total	**49**	**100%**

Table 11 Summary of AHIMS Sites within the four study areas

Site Type	Quantity	Percent
Shelter with deposit	11	72.7%
Shelter with deposit; grinding groove	1	9.1%
Shelter with art; grinding groove	1	9.1%
Stone arrangement	1	9.1%
Total	**14**	**100%**

Of the 72 registered sites in the Project Application Area and surrounding region, the most common site type was overwhelmingly shelters with deposit (33), followed by shelters with art (10) and artefact sites including artefact scatters and isolated finds (16). Other site types include scarred tree (4), shelters with deposit and art (2), shelters (2), PADs (2), shelter with deposit and grinding groove (1), shelter with art and grinding groove (1) and stone arrangement (1). The abundance of rock shelters is a result of the outcropping sandstone along creek lines, gorges, escarpments and slopes. Stone artefacts are generally found in flat or gently sloping open regions and on level, well-drained land features near watercourses and swamps. Scarred trees are usually found in close proximity to water or on easily accessible slopes.

A copy of the AHIMS searches is located in **Appendix 5**.

Legend

N

Angus Place Project Application Area

AHIMS

- Stone Arrangement
- Artefact(s) unspecified
- Isolated Find
- PAD
- Scarred Tree
- Shelter
- Shelter with Art
- Shelter with Deposit
- Shelter with Art and Deposit
- Shelter with Art, Grinding groove
- Shelter with deposit, Grinding groove

Proposed Workings

Proposed ESA Tracks & Borehole

Second Ventilation Area

Environmental Study Area

Tracks & Roads

Drainage

WARNING
No part of this plan should be used for critical design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.

45-1-2666
45-1-2664
45-1-0123
45-1-2667
45-1-0126
45-1-2665
45-1-0125
45-1-0156
45-1-0153
45-1-0254
45-1-0046
45-1-2555
45-1-0255
45-1-0253
45-1-0007
45-1-2556
45-1-0155
45-1-0142
45-1-0157
45-1-0135
same as 45-1-0158
45-1-0141
45-1-0140
45-1-0133
45-1-0136
45-1-0160
45-1-0143
45-1-0146
45-1-0084
45-1-0138
45-1-0150
45-1-0137
45-1-0144
45-1-0139
45-1-0149
45-1-0024
45-1-0131
45-1-0154
45-1-0078
45-1-0152
45-1-0132
45-1-0100
45-1-0094
45-1-0093
45-1-0041
45-1-0151
45-1-2692
45-1-0040
45-1-2689
same as 45-1-2757
45-1-2756
45-1-0178
45-1-0177
45-1-2739
45-1-2740
45-1-0198
45-1-2600
45-1-0052
45-1-0044
45-1-0197
45-1-0147
45-1-0051
45-1-0148
45-1-2758
45-1-2759
45-1-0159
45-1-0008
45-1-2715
45-1-0206
45-1-0179

0 1.5 3km

SCALE: 1:47,000 AT A3 SIZE

TITLE:	FIGURE 3: PROJECT APPLICATION AREA WITH AHIMS	LOCATION:	ANGUS PLACE	DATUM: PROJECTION:	(GDA 94) MGA ZONE 56	DATE: PURPOSE:	20/01/2014 HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111285 Angus Place Extension\10. Drafting\MapInfo Workspaces\Report Figures
VERSION (PLAN BY): E A3 (KV-AB-NW)

CLIENT: CENTENNIAL COAL
JOB REF: 111285

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
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6.4.2 Local Archaeological and Heritage Studies

Gaul, post 1980. Prehistoric Archaeology 391-1, Assignment 2: Black-Fellows Hands Shelter and Environs. University of New England

Blackfellows Hand rockshelter was recorded by Johnson (1979) but the art component was not described until the completion of Gaul's research in the 1980s (AHIMS #45-1-0007) (Gaul post 1980). The assignment was aimed at recording the art component of a group of three rockshelters at the western escarpment of the Blue Mountains, west of Sydney. Three shelters were surveyed using a 20 metre tape, string level and a camera.

Site A – Blackfellows Hand Shelter was located approximately one kilometre north-east from the start of Blackfellows Hand Track. It comprised a large open shelter with the main section being 60 metres long. The shelter contained an occupational deposit that extended for about 40 metres. There were a small number of chert flakes near the entrance of the shelter. The art panel contained a combination of motifs including arms, feet, weapons and kangaroo appendages. The colours of the motifs comprised white, yellow and red.

Site B – Shelter was located approximately 700 metres north-east of Site A, along Blackfellows Hand Track. The area contained a 40 metre long shelter with a low overhanging roof. The floor contained a deposit approximately 50 centimetres to one (1) metre in depth. Red hand stencils were found on walls and ceiling and those on the ceiling were the best preserved.

Site C – Shelter was situated approximately 300 metres further along the track than Shelter B, further east, on the north side of the road. The shelter was 30 metres long and strewn with large rocks from roof-fall. There was little deposit as the majority of it had eroded down the slope. The numbers of stencils were difficult to measure and contained mainly fingertips. The stencils were coloured white and yellow but many of them were faded.

Gorecki, 1983, Archaeological Survey Kariwara Colliery Lease

A field survey of the Kariwara Colliery Lease was undertaken by Gorecki (1983) commissioned by Longworth and McKenzie Pty Limited. The survey was conducted from the 24th to 29th of January on the Newnes Plateau in the Newnes State Forest, approximately nine kilometres north of Lithgow. The aim of the survey was to locate and establish the archaeological significance of Aboriginal relics in the area, and provide subsequent recommendations regarding protective measures. The survey area was divided into four environmental zones based upon geology, topography, vegetation cover, and ground cover visibility. The archaeological potential of these zones were assessed.

The survey resulted in the identification of five archaeological sites and 19 potential occupation sites. The most common type of site was shelters with art and deposit, with the deposited raw material consisting of quartz, chert, indurated mudstone, quartzite and fine grained igneous inclusions. Potential occupation sites were referred to as shelters, which were possibly used in the past, and had the potential for, but did not exhibit any visible evidence of, archaeological deposit.

Stockton, 1983, Survey for Prehistoric Sites on the proposed Clarence Transfer

This study was conducted by Stockton (1983) to support the water requirements of the City of Greater Lithgow due to the rapid increase in coal mining and power generation in the area. Proposed developments included the construction of a dam, settling ponds, and a lined channel. The Project Area was located approximately seven kilometres to the north east of Lithgow Post Office, and incorporated the gently sloping ridge of the undulating surface of the Newnes Plateau.

During the field survey, an isolated grey chert flake and a small artefact scatter comprising two grey quartzite flakes were identified along an inspected creek channel.

Rich, 1983, Proposed Prison at Marrangaroo Creek

The Marrangaroo Creek proposed prison site was located approximately six kilometres north of Lithgow, and was surveyed by Rich (1983) following the proposal of development works including prison construction, and the installation of access roads, additional buildings, car parks and a lake.

The pedestrian field survey was conducted in transects. A total of eight open sites were uncovered, and two previously registered AHIMS sites (#45-1-0089, 45-1-0090) were groundtruthed. Artefacts at the open sites, which included both isolated finds and artefact scatters, were manufactured from quartz, quartzite, and mudstone.

Rich and Gorman, 1988, Archaeological Survey of Proposed Springvale Colliery and Conveyor

Rich and Gorman (1988) conducted an archaeological assessment for the proposed Springvale Colliery and related facilities located near Wallerawang in the Blue Mountains. The survey was divided into four locations; Springvale Pit Top Area (500 x 350 metres), Proposed Springvale Longwall Mine Area (7.5 x 5 kilometres), Proposed Conveyor Route (less than 10 metres wide and approximately 10 kilometres long), and the Proposed Washery (1 kilometre x 500 metres), including the reject emplacement areas and dams.

The field survey uncovered 11 artefact scatter sites, an isolated find, two possible site locations, and three shelters with PAD (Potential Archaeological Deposit). Artefact scatters were generally located on well exposed areas and contained several artefacts. The dominant raw materials were identified as quartz, quartzite and mudstone. Shelters were predominantly composed of sandstone pagodas, which are typical for the regional landscape and commonly located along tributary lines. Two of the shelters contained evidence of rock art.

Rich, 1993, Archaeological Inspection of Aboriginal Sites in the Springvale Coal Project

This report details the field inspection that was undertaken by Rich (1993) subsequent to the 1988 archaeological assessment undertaken by Rich and Gorman. An assessment was made of existing recorded sites that had been, or were likely to be, affected by development works.

Several recommendations were made additional to those outlined in the 1988 report. These included the updating of existing recorded site cards where necessary.

Central West Archaeological and Heritage Services, 2000, Aboriginal Archaeological Study of the Marangaroo Site

Central West Archaeological and Heritage Services (2000) carried out an Aboriginal archaeological study of the Marrangaroo Department of Defence Site. The site entrance was located approximately 2.2 kilometres east of the Great Western Highway and ten kilometres north of Lithgow. The Project Area was approximately 1,700 hectares in size, and the survey was conducted both by vehicle and on foot.

The survey yielded 17 Aboriginal sites, which consisted of ten rockshelter sites, two rockshelter sites with art, and one rockshelter with deposit. Four artefact scatter sites and one isolated artefact were also found, as well as 12 PAD (Potential Archaeological Deposit) sites.

OzArk, 2006, Flora/ Fauna and Heritage Assessment: Two Proposed Dewatering Borehole Sites within the Newnes State Forest

This OzArk (2006) report was commissioned by Centennial Angus Place and details the results of a heritage assessment of approximately one hectare of land in the Newnes State Forest, Lithgow. The survey was conducted in transects on foot.

No Aboriginal sites were recorded at either the locations of the two proposed dewatering boreholes, or at the sites of the associated easement and access tracks. The report concluded that there were no constraints to the proposed development, and no further archaeological investigation was considered necessary.

OzArk, 2007a, Indigenous Heritage Assessment for Subsidence Management Plan for Baal Bone Colliery

OzArk (2007a) was commissioned by Xstrata Coal for the preparation of a Subsidence Management Plan (SMP) for the proposed Longwall 29, Longwall 30, and Longwall 31 at the Baal Bone Colliery, near Lithgow.

A pedestrian field survey was conducted over a 250 hectare area. One isolated find and one rock shelter with no surface evidence of Aboriginal occupation were recorded. The report stated that if subsidence predictions indicate that the location of the shelter is likely to suffer extensive disturbance, and plans of the underlying longwalls cannot be altered, then a programme of limited subsurface test excavation in the rock shelter and its immediate environment should be undertaken to determine the presence or absence of Aboriginal occupation.

RPS, 2010, Cultural Heritage Impact Assessment for Angus Place Colliery s75W Modification

RPS (2010) was commissioned by Centennial Angus Place to prepare a CHIA for proposed modifications to the existing approval for works associated with Longwalls within the Angus Place mining lease. The proposed amendments related to the development and extraction of Longwall 910 and Longwall 900W, construction of a de-watering borehole, and associated supporting infrastructure (the dewatering bore and associated infrastructure were later withdrawn from the proposals).

A pedestrian survey of the Project Area identified a single site. The site, a rockshelter with PAD, was identified within the western section of the proposed Longwall 910. A subsidence study predicted that the site would not be affected by subsidence, nor would the proposed works impact upon the site. It was therefore recommended that the site be monitored periodically, in association with the Bathurst Local Aboriginal Land Council.

6.5 Summary of the Aboriginal Heritage Context

Early archaeological studies in the Blue Mountains region were primarily research based, and concentrated on rockshelters. Excavations conducted by Stockton throughout the 1970s were conducted exclusively at rockshelters, and were largely focused on identifying and dating occupation phases and stratigraphic sequences. Radiocarbon dates from these excavations ranged from 22240±1000 years BP to 530±80 years BP, and artefact assemblages associated with all three of the Eastern Regional Sequences (Capertian, Eloueran, and Bondaian) were identified. These excavations generally yielded high numbers of flaked stone artefacts (between 300 and several thousand), and backed artefacts, including Bondi points and geometric microliths, scrapers, and axes were also recovered. Chert and quartz were consistently the most dominant raw materials at these sites.

More recent archaeological studies in the area have been conducted in association with development projects including mining activities, infrastructure development, and state forest works. These studies are primarily based on survey (RPS 2011; RPS 2012a; RPS HSO 2009), though open site excavations have also been undertaken (OzArk 2006; OzArk 2007b). The results of these studies suggest that artefact scatters

(usually containing only small numbers of artefacts) and isolated finds, PADs, scarred trees, and rockshelters with deposits and/or art are the site types most likely to be found in the area. Landform elements associated with these sites include sandstone outcrops and pagodas, and elevated areas including saddles and spurs. Based on these studies, archaeological sites are not likely to be found on steep slopes or in areas that are difficult to access. AHIMS data relevant to the area supports this.

6.6 Predictive Model

A predictive model is created to provide an indication of Aboriginal sites likely to occur within the Project Application Area. It draws on the review of the existing information from the regional and local archaeological context and from the environmental context. The predictive model is necessary for the formulation of appropriate field methodologies and to provide information for the assessment of archaeological significance.

There are a number of factors which influence Aboriginal occupation of an area. These include essential subsistence resources such as food (flora and fauna) and fresh water. However, other resources such as raw stone materials, wood and bark, animal skins and reeds for basket weaving, string and clothing were also used. The presence of landscape features such as ridges, flat elevated areas and outcrops or boulders of sandstone forming rockshelters may have also influenced Aboriginal occupation of an area. In addition, cultural activities may have also taken place at certain locations in the landscape for example corroborees, mythological places and initiation sites.

6.7 Site Predictions

The following site predictions for the Project Application Area have been made on the basis of the environmental context, available historic observations of Aboriginal people in the region, archaeological studies and analysis of the AHIMS data.

6.7.1 Site Type

Based on previous archaeological investigations and Aboriginal sites recorded on the AHIMS database, the most likely site type to be encountered within the Project Application Area would be shelters with deposit, followed by shelters with art, and shelter with deposit and art or grinding grooves. Other site types, including artefact scatters/isolated finds, stone arrangements and grinding groove sites may also occur. In areas where old growth vegetation remains, culturally scarred trees may also be found.

6.7.2 Site Locations

Shelter sites are usually identified in cliff faces, pagodas and sandstone outcrops or large boulders. They are unlikely to be found on the plateau areas. Grinding grooves are usually found in exposed sandstone outcrops along creek lines and may be found near to rockshelters. It is also likely that grinding groove sites may be associated with wells. Stone arrangements may also be found in the Project Application Area. Artefact scatters and isolated finds may be found in any landscape, but more often within 100 metres of a watercourse. It is therefore predicted that the locations near watercourses within the Project Application Area will have a higher potential for containing artefact sites. Scarred trees are possible where vegetation has not previously been cleared.

6.7.3 Site Contents

A review of previous archaeological investigations indicates that any artefact sites found in the area generally comprised flaked stone artefacts manufactured from quartz, chert, quartzite, mudstone and silcrete raw materials. It is therefore predicted that stone artefacts such as flakes and cores within the Project Application Area will be manufactured from the same stone types. The potential for subsurface archaeological deposits is only likely if there is intact or undisturbed A horizon soils. This may be a reasonable expectation in undisturbed shelters; however it is unlikely in open areas, given the erosional nature of the soils in the Project Application Area.

Legend

Project Application Area

Survey Units

01	11	21
02	12	22
03	13	23
04	14	24
05	15	25
06	16	26
07	17	27
08	18	28
09	19	29
10	20	Desktop Sudy Area

Proposed ESA Tracks & Borehole

Second Ventilation Area

Environmental Study Area

WARNING
No part of this plan should be used for critical design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.

N

WOLGAN RIVER
LAMBS CK
BICENTENNIAL NATIONAL TRAIL
BLACKFELLOWS HAND TRAIL
GARNE CK
FIRE TRAIL NO.6
FIRE TRAIL NO.5
SUNNYSIDE RIDGE ROAD
BIRDS ROCK TRAIL NO.1
BIRDS ROCK TRAIL NO.2
BIRDS ROCK TRAIL
WOLGAN RD
BEECROFT TRAIL
ANGUS PLACE TRAIL
KANGAROO CK

0 1.5 3km

SCALE: 1:46,000 AT A3 SIZE

TITLE:	FIGURE 4: PROJECT APPLICATION AREA WITH SURVEY UNITS	LOCATION:	ANGUS PLACE	DATUM: PROJECTION:	(GDA 94) MGA ZONE 56	DATE: PURPOSE:	21/01/2014 HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111285 Angus Place Extension\10. Drafting\MapInfo Workspaces\Report Figures
VERSION (PLAN BY): D A3 (KV-AB-NW)

CLIENT: CENTENNIAL COAL
JOB REF: 111285

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7.0 Archaeological Survey and Field Results

7.1 Survey Methodology

The study area was surveyed in accordance with the requirements set out in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

7.1.1 Survey Aims

The purpose of the survey was to inspect visible ground surfaces, observe exposed soil profiles and sample all landform types in the Project Application Area in order to record any material evidence for Aboriginal and historic occupation. The survey also aimed to record any cultural sites or Aboriginal landscapes, if identified by the Aboriginal stakeholders. Any Aboriginal objects or sites were to be recorded and a site card submitted to the OEH for inclusion on the AHIMS database.

7.1.2 Survey Strategy

Due to the size and the inaccessibility of some parts of the Project Application Area, it was not feasible to survey the entire area. Instead, the survey team elected to adopt a sampling methodology by focussing the survey on landforms and features most likely to contain archaeological evidence of occupation, such as ridges, creek lines, rocky outcrops, sandstone sheets and inspection of mature trees capable of bearing cultural modification (scarred or carved). In addition, attempts were made to relocate previously recorded sites inside the Project Application Area.

7.1.3 Field Methods

The survey was conducted on foot (pedestrian) and targeted the landforms identified in the survey strategy above. The area surveyed was recorded in survey units (refer **Figure 4**). Each survey unit was mapped and recorded in accordance with landforms, Project Application Area boundaries, impact area boundaries, changes in survey conditions (such as visibility or ground surface exposure) and/or other relevant considerations. The mapping of survey units was undertaken on the basis of GPS recorded data and with reference to aerial and topographic information. The recording of survey units was undertaken using representative digital photographs and field notes which included observations of soils, ground surface exposure and visibility, vegetation cover, rocky outcrops, levels of ground surface disturbance and erosion.

7.1.4 Site Recording

The field notes provide a basis for the reporting of survey coverage and calculating survey effectiveness. It is required that any Aboriginal sites identified are recorded and submitted for inclusion on the AHIMS database. Such recording involves the documentation of the material traces of past Aboriginal land use, including the spatial extent of sites and any other obvious physical boundaries. Aboriginal cultural sites identified by Aboriginal stakeholders may not always involve material traces and the boundaries of such sites need to be mapped on the basis of information provided by the stakeholders. The positions of such sites are to be recorded by GPS receivers and mapped accordingly.

Rockshelters will only be submitted for registration on the AHIMS database if there is archaeological evidence for Aboriginal occupation and the required features for AHIMS registration such as deposit, grinding grooves, art or PAD. Previous correspondence with the OEH on the matter was that rockshelters must have associated features for example PAD, art, grinding grooves, and/or artefacts for AHIMS registration. Site cards will be generated where necessary for any newly recorded sites and submitted for registration on the AHIMS database.

7.1.5 Survey Coverage

Portions of land in the Project Application Area were inaccessible due to extremely difficult and dangerous terrain, therefore creating OH&S issues for those undertaking visual inspections and groundtruth surveys.

7.1.6 Ground Surface Visibility

Ground surface visibility (GSV) is defined as the amount of bare ground on exposures which might reveal artefacts or other archaeological materials, although it is not considered a reliable indicator for detecting buried archaeological material. Visibility in an area may be affected by vegetation, leaf litter, loose sand, stony ground or introduced materials (DECCW 2012: 39). The GSV ratings are described in **Table 12** below. The generalised terminology used in the 'Overall Rating' column is employed for description of the GSV in a given area.

Table 12 Ground surface visibility rating

Ground surface visibility Rating	Overall rating	Description
0-9%	Low	Heavy vegetation with scrub foliage, debris cover and/or dense tree cover. Ground surface not clearly visible.
10-29%	Low	Moderate level of vegetation, scrub or tree cover. Small patches of soil surface visible resulting from animal tracks, erosion or blowouts. Patches of ground surface visible.
30-49%	Moderate	Moderate levels of vegetation, scrub and/or tree cover. Moderate sized patches of soil surface visible possibly associated with animal tracks, walking tracks and erosion surfaces. Moderate to small patches across a larger section of the project area.
50-59%	Moderate	Moderate to low level of vegetation, tree and/or scrub. Greater amounts of areas of ground surface visible in the form of erosion scalds, recent ploughing, grading or clearing.
60-79%	High	Low levels of vegetation and scrub cover. High incidence of ground surface visible due to recent or past land-use practices such as ploughing grading and mining. Moderate level of ground surface visibility due to sheet wash erosion, erosion scalds and erosion scours.
80-100%	High	Very low to nonexistent levels of vegetation and scrub cover. High incidence of ground surface visible due to past or recent land use practices, such as ploughing, grading and mining. Extensive erosion such as rill erosion, gilgai, sheet wash, erosion scours and scalds.

7.1.7 Ground Surface Exposure

Ground surface exposure (GSE) differs from visibility in that it is considered to be the area with a likelihood of revealing buried artefacts or deposits. Where GSV is an observation of the amount of bare ground, the GSE is the percentage of land where erosion and exposure were sufficient enough to reveal archaeological evidence if present on the ground surface. Exposure types include those resulting from processes such as sheet wash, gullying, blow-outs, salt scalds, tracks or animal pads. They can also be caused by vehicles and machinery (DECCW 2010: 37-38).

Both GSV and GSE are elaborated upon in relation to each survey unit, summaries for which can be found in Section 7.2.

7.2 Survey Units

A pedestrian survey of the Project Application Area was undertaken by RPS archaeologists David White, Philippa Sokol, Rebecca Yit and Kerrie Grant from 6 March to 13 April 2012. Aboriginal stakeholders were present at the site visits conducted between 3-5 April 2012 and 11-13 April 2012**.** These stakeholders represented Gundungurra Tribal Council Aboriginal Corporation, Mingaan Aboriginal Corporation, North East Wiradjuri Company Ltd., Bathurst Local Aboriginal Land Council, and Warrabinga Native Title Claimants Aboriginal Corporation. Information regarding the landscape, cultural values, and potential for archaeological sites were sought from the Aboriginal community stakeholders at various stages throughout the survey.

Pedestrian survey was undertaken in the four study areas within the Project Application Area, which were divided in to 29 survey units, with an additional area subject to a desktop study only (**Figure 2** and **Figure 4**). The desktop study was completed for areas in which Centennial Coal does not intend to mine as part of the proposed mine extension. Therefore, sites located in this area are at no risk of harm from proposed new longwalls. Two survey teams, comprising two archaeologists accessed each survey unit and assessed each area according to the criteria described in the methodology above. Ground surface visibility was calculated following the descriptions outlined in **Table12,** in Section 7.1.6 above. The survey coverage for the Project Application Area is summarised in **Table 13** in Section 7.3 below.

Known archaeological sites within the Project Application Area were mapped as shown in **Figure 3**. Rockshelters were overwhelmingly the most frequently identified sites in the Project Application Area. The previously identified Aboriginal archaeological sites were then groundtruthed during the course of the survey. In past archaeological surveys, co ordinate data was collected using varying recording systems. As a result, the coordinates given for some of the registered sites were found to be inaccurate by up to 150 metres. As such RPS used Differential GPS units utilising the now standard GDA56 datum in order to establish the actual location of the sites once relocated (**Figure 5**). During the course of the archaeological survey, no new Aboriginal sites or objects, and no new historic heritage sites were identified.

7.2.1 Survey Unit 1

In order to reach the northern boundary of the Project Application Area several trails were followed including Sunnyside Ridge Road to Birds Rock Trail and Birds Rock Trail No. 2. The track offered good exposure and visibility, but also had evidence of sheet wash from recent rain periods. The track was on a gradual downward slope along an elongated spur (**Plate 1**).

This survey unit was in the north east of the Project Application Area and was surveyed by following contours towards drainage lines. A couple of tributary lines were reached that were densely vegetated with shrubs, banksias and thick leaf litter (**Plate 2**). A tributary of Carne Creek contained running water. This was followed further east in the direction of Carne Creek. Scattered pinnacle rocks were identified in the area. These were investigated, but did not contain overhangs or possible shelters. The tributary line was followed north-east where it opened to approximately 500 metres of sheer sandstone faces, canyon formation and Carne Creek running through the valley. Carne Creek was not accessible.

Remaining mid slope areas were investigated including other drainage lines. No pagodas or overhangs were observed. In most cases, the vegetation was thick with shrubs and banksias. Scattered sandstone and quartz fragments were noted. Grass trees and Geebung plants were also observed.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.2 Survey Unit 2

This survey unit comprised an upper slope west of Birds Rock Trail No. 2. Vegetation was mainly open forest with banksia noted on upper slope areas where it is drier. Shrubs (mainly acacia), heavy leaf litter and fallen trees were also noted (**Plate 3**). Mature trees, where observed, were inspected for cultural modification but none was observed.

Soil exposure was limited to areas affected by sheet wash erosion and visibility was low; little to no stone material was observed and no sheets or outcrops of sandstone were present. A number of minor tributaries were present in the survey unit and a trickling drainage line was surveyed, however, dense ferns restricted visibility to almost nil along the banks.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.3 Survey Unit 3

This survey unit was bounded by Sunnyside Ridge Road in the west, Birds Rock Trail in the south, Birds Rock Trail No. 1 in the east and an unnamed fire trail in the north. The survey commenced at Birds Rock, which is an existing lookout and is also considered to have been a potential location for use as a lookout area during times of Aboriginal occupation.

A highly eroded vehicle track ran alongside the lookout providing high ground surface visibility and quartz and sandstone fragments were noted in the soil. The north of the survey unit was open regenerating forest with no mature trees and a low shrub cover and thick leaf litter (**Plate 4**). As such, ground surface visibility in vegetated areas was severely limited. The low order creek line which runs through the survey unit was inspected; however, the creek's banks were quite steep and thickly vegetated and access was severely limited. No sandstone outcrops, pagodas or boulders formed any possible shelters (**Plate 5**).

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.4 Survey Unit 4

This survey unit was located in the Birds Rock Flora Reserve, with Sunnyside Ridge Road in the west and Birds Rock Trail No. 2 in the north. Birds Rock Trail was utilised for access, however, vehicle access was only possible for the first 500 metres. The remainder of the survey was conducted on foot. The majority of the old road and access areas were defined by marking tape.

The vegetation across the survey unit comprised open forest. Leaf litter obscured much of the visible ground surface in the forested areas and GSV and GSE were low (**Plate 6**). A number of small drainage lines and tributaries of Carne Creek were present within the survey unit, including larger watercourses which contained trickling water running through ferns and grass cover from recent rain.

Tracks offered the best access and visibility; however, little raw material was identified, with only quartz and sandstone fragments from local bedrock present. Crest and saddle landforms were followed and outcropping sandstone along the upper slopes was inspected. A 30 x 30 metre disused borehole site was located, with ground disturbance and exposure high in the area; no cultural material was identified (**Plate 7**).

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.5 Survey Unit 5

This survey unit was located in the south-east corner of the Newnes Plateau and incorporated the west trending tributaries of Carne Creek south of Birds Rock Trail. The area was highly vegetated open forest;

with dense patches of banksias growing on mid to upper slopes (**Plate 8**). Large sandstone pinnacle outcrops were present but none of the outcrops had undercuts or overhangs with potential for shelters. Some of the pinnacles exhibited exfoliation (**Plate 9**).

Ground surface exposure was considered to be moderate to high along the track and pinnacle areas, but the ground surface in other areas was dense with leaf litter. Quartz fragments were noted on the ground, having eroded from the local sandstone. A track area identified between two south trending low order tributaries was followed to the larger tributary. A cluster of the exfoliated sandstone pinnacles was present in this area but no shelter potential was observed. The creek lines were steep with poor accessibility and no rock outcrops suitable for shelters or grinding grooves.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.6 Survey Unit 6

This survey unit was located to the north of the Angus Place pit top, in the high ground north of the junction of Wolgan Road and the Bicentennial National Trail. Vehicle access was difficult due to tracks being boggy and eroded from heavy rain the previous day and the survey was conducted entirely on foot (**Plate 10**).

The survey unit contained a number of exposures in which non-archaeological fragments of sandstone and quartz were observed. Exposed sandstone was steeply inclined, with little to no potential for containing grinding grooves or other cultural material observed. Large sandstone pinnacles (**Plate 11**) were also inspected for shelters and whilst there were some overhangs, these did not meet the OEH criteria for Aboriginal rockshelter sites, as there were no potential deposits, artefacts or art. No mature trees were identified inside the survey unit and therefore there was no possibility of culturally modified trees (scarred or carved) being present (**Plate 12**).

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.7 Survey Unit 7

This survey unit was located to the immediate south and east of the Angus Place pit top facility. The original planned access track intended to be used for access to this survey unit was blocked by a large fallen tree. Access to the area was therefore gained across the haul road and locked gate.

The survey unit was located near two conveyor belts and the area east of these was inspected. The topography was composed of moderate slopes with open forest consisting mainly of re-growth and many young trees (**Plate 13 and Plate 14**). The main disturbances to this survey unit consisted of the vehicle track and an exposed pipeline, with some mine-associated works also noted. Sheet wash exposures on sloped areas revealed quartz and sandstone fragments but no artefacts were identified.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.8 Survey Unit 8

This survey unit was located to the north of the Angus Place pit top, in the high ground north of the junction of Wolgan Road and the Bicentennial National Trail. Access to this survey unit was gained via a dirt track, which had been previously eroded by rainfall. Access to the area was gained on foot by scaling a steep incline heading in an easterly direction. A gently sloping to level spur was reached which contained open forest with low growing shrubs limiting GSV (**Plate 15**). A trail bike track which ran through the survey unit offered the most visibility in the area, exposing B horizon soils with quartz and sandstone fragment inclusions (**Plate 16**).

Coxs River was located to the immediate west of the survey unit, with several small tributaries crossing through the survey unit, one of which was followed and the banks inspected. Sandstone cobbles and boulders were observed along the creek line but no sheets of sandstone were identified.

The recorded location of AHIMS site #45-1-0155, Shelter with deposit, was groundtruthed, but no shelter was observed at that location. A shelter matching the description of #45-1-0155 was observed approximately 100 metres north-east of the original recorded location (refer **Figure 5**). Disturbances resulting from the use of a trail bike track were observed along the south east side of the shelter and the track appeared to have altered the flow of water from around the shelter. The top soil deposit within the shelter was damp. Quartz artefacts which had been originally recorded on the surface of the deposit could not be identified and it was considered likely that they had been washed out by the diversion of the flow of rain water. The site card for this site will be updated to reflect its correct co-ordinates (**Plate 17**). Inspections were made of other pagodas/pinnacles in the area but none contained formations appropriate for use as shelters.

The Shelter with deposit, #45-1-0155 was groundtruthed and found to be approximately 100 metres north-east of the original recorded location. No other Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.9 Survey Unit 9

This survey unit consisted of low lying open paddocks, spanning both banks of Coxs River, to the north-west of the Angus Place pit top. Dense grass cover severely limited GSV and GSE and the ground was marshy in low-lying areas (**Plate 18**). A dam drainage line prevented access in one location due to inundation. No stone outcrops were present, and the vegetation had been cleared in the past for farming purposes. As such, there was no potential for rockshelters, grinding grooves or modified trees in the survey unit. Evidence of regular inundation suggested that the area would not have been favourable for occupation.

On the far western boundary of the survey unit, a retaining wall with concrete sections and gravel fill was noted, demonstrating extensive disturbances to the area (**Plate 19**). Other disturbances to the area included cattle grazing, fencing and modification of the retaining walls. Two red bellied black snakes were observed in the survey unit and, as such, the inspection of some areas was not possible due to safety risks.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.2.10 Survey Unit 10

This survey unit was located to the east of Angus Place Colliery. The access track which had been blocked by a fallen tree in the western part of the Project Application Area was still inaccessible and access was again gained by an alternative track (**Plate 20**). This access track passed through a narrow valley traced by a creek, which tapered to a gorge as it reached the survey unit. The creek banks were heavily vegetated with shrubs and ferns as well as many large trees, both standing and fallen, which restricted visibility and access (**Plate 21**).

The access track offered the highest GSV and GSE in the survey unit, exhibiting eroded B horizon soils. Soils underneath the vegetation was loamy A horizon topsoil. The escarpment predominantly comprised sheer cliff faces and access to the crest was not possible (**Plate 22**). However, a talus slope to the south-east was accessed. The slope was very steep with dense vegetation, resulting in low GSV and GSE. The vegetation on the lower slopes was open forest, which in some areas became difficult to navigate due to the presence of dense shrub growth, fallen rocks and thick layers of leaves and bark that had washed down slope from recent heavy rain.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

Legend

- Angus Place Project Application Area
- Proposed ESA Tracks & Borehole
- Second Ventilation Area
- Environmental Study Area
- Proposed Workings
- Tracks & Roads
- Drainage

AHIMS within PAA

- Stone Arrangement
- Artefact(s) unspecified
- Isolated Find
- PAD
- Scarred Tree
- Shelter
- Shelter with Art
- Shelter with Art and Deposit
- Shelter with Deposit
- Shelter with deposit, Grinding groove
- Shelter with Art, Grinding groove
- Relocated Shelter with Deposit

WARNING
No part of this plan should be used for critical design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.

N

COXS RIVER
WOLGAN RIVER
CARNE CK
FIRE TRAIL NO.6
BIRDS ROCK TRAIL NO.2
BIRDS ROCK TRAIL
CENTENNIAL NATIONAL TRAIL
LAMBS CK
BLACKFELLOWS HAND TRAIL
KANGAROO CK
CARNE CK

45-1-0254
45-1-2555
45-1-0046
45-1-0255
45-1-0253
45-1-0007
45-1-2556
45-1-0155
45-1-0142
45-1-0135
same as 45-1-0158
45-1-0141
45-1-0140
45-1-0160
45-1-0143
45-1-0024
45-1-0078
45-1-0152
45-1-0151
45-1-2692
45-1-0041
45-1-0040
45-1-0093
45-1-0044
45-1-0147
45-1-0148
45-1-0008
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45-1-0146
45-1-0084
45-1-0138
45-1-0137
45-1-0145
45-1-0154
45-1-0132
45-1-2689
45-1-2756
same as 45-1-2757
45-1-0139
45-1-0150
45-1-0144
45-1-0149
45-1-0145
45-1-0137

0 1.5 3km
SCALE: 1:46,000 AT A3 SIZE

TITLE: FIGURE 5: PROJECT APPLICATION AREA WITH SURVEY RESULTS AND IMPACT AREA
LOCATION: ANGUS PLACE
DATUM: (GDA 94)
PROJECTION: MGA ZONE 56
DATE: 21/01/2014
PURPOSE: HERITAGE
LAYOUT REF: J:\JOBS\Centennial\All Jobs\111285 Angus Place Extension\10. Drafting\MapInfo Workspaces\Report Figures
VERSION (PLAN BY): D A3 (KV-AB-NW)

CLIENT: CENTENNIAL COAL
JOB REF: 111285

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7.3 Survey Unit 11

This survey unit was located to the east of the Angus Place Colliery. The access track which had been blocked by a fallen tree in the western part of the Project Application Area was still inaccessible and access to this survey unit required a 2.5 kilometre walk along this trail to reach the boundary.

The survey unit was composed of steep escarpments and ridges, with deeply incised creek valleys and thick vegetation which inhibited not only GSV and GSE but also accessibility (**Plate 23**). Exposures were limited to access tracks and outcropping sandstone. Bark and leaf litter covered the ground surface along the banks of the creek (**Plate 24**).

Access to previously recorded AHIMS site #45-1-0078, Shelter with deposit; grinding groove, was attempted by walking north along a large ridge. While the location was reached, the actual shelter could not be accessed because the sheer walls of the escarpment and dense banksia growth could not be navigated (**Plate 25**).

Further south and down slope from #45-1-0078, another previously recorded rockshelter site, Shelter with deposit near a creek line AHIMS #45-1-0151, was groundtruthed. The shelter exhibited no evidence of serious disturbance or collapse. The artefacts which had been recorded at the shelter were not identified during the groundtruth survey. It was considered likely that they had been washed away by water runoff or covered by vegetation growth since the original site recording.

Two registered sites, #45-1-0078 (shelter with deposit; grinding groove) and #45-1-0151 (shelter with deposit) were situated in this survey unit. Site #45-1-0078 was identified but could not be inspected due to inaccessibility. Site #45-1-0151 was groundtruthed, but the artefacts originally recorded at the site were not found. No new sites were identified in this survey unit.

7.3.1 Survey Unit 12

This survey unit was situated on the southern boundary of the Project Application Area, to the east of Sunnyside Ridge Road. Tributaries of Carne Creek run through the survey unit, with several drainage lines in the south-east corner. A fire trail not noted on topographic maps or the hand-held GPS was located and followed (**Plate 26**). It was found that the track branched out on several occasions, with one branch leading to a recently established drill pad (**Plate 27**). Vegetation in the area was open forest with a moderately dense understorey of shrubs, with evidence of bushfire observed at the beginning of the track. Regeneration of the fire affected area was also observed (**Plate 28**).

Exposed ground surfaces were limited to the tracks as GSV and GSE became very low off track, due to leaf litter and ground covering vegetation. Drainage cuts also provided low to moderate visibility and contained fragments of quartz and sandstone cobbles.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.2 Survey Unit 13

This survey unit was situated to the east of Sunnyside Ridge Road. The area was predominantly characterised by a level to gently sloping plateau, with the exception of a number of steep spurs and sandstone pagodas associated with the drainage system in the north east of the survey unit. The drainage lines include both low and high order tributaries of Carne Creek.

The vegetation which populated the survey unit was regenerating open forest, dominated by ironbark, scribbly gum and banksias, with an understorey of various shrubs (**Plate 29**). Along the drainage lines, there

were less trees and the vegetation was dominated by ferns. Past logging practices have removed the mature trees in the area and the trees which were present during the survey were considered not to be of sufficient age to bear Aboriginal cultural modification.

One previously recorded site, AHIMS # 45-1-2689, a stone arrangement, was groundtruthed and found to be intact with no discernible disturbance (**Plate 30**). The access track to the site had been covered with logs and branches which appeared to be a part of a regeneration project but with the added advantage of preventing access to the stone arrangement site, thereby aiding in its preservation.

Another previously recorded site, #45-1-2756 (also 45-1-2757, duplication), was found in this survey unit, and is a rockshelter recorded by RPS in 2012 during a separate survey (RPS 2012b). Both of these shelters were under a single massive boulder and therefore recorded as a single site and at the time labelled RPS SV RS1 (now AHIMS#45-1-2756/2757). The rockshelter complex is situated on an upper slope near Sunnyside Ridge Road in the Newnes State Forest **(Plate 31).** The site is a large sandstone pagoda that has been undercut by erosion forming one south east facing shelter (Shelter A) and a second shelter (Shelter B) facing east. Shelter A measured 16.0 metres long by 2.9 metres deep by 1.6 metres high and features a hand stencil on its wall **(Plate 32),** a loose grinding stone and a broken piece of hardened ochre is also present. Shelter B measured 6.0 metres long by 2.2 metres deep by 1.8 metres high and was devoid of Aboriginal objects. Both the ceiling and rear wall of the shelter demonstrated weathering and exfoliation. The floor of the rockshelter was covered with leaf litter and weathered pieces of rock, presumably resulting from erosion of the roof by natural causes. Lichen covered much of the ceiling and rear wall.

AHIMS #45-1-2689, a stone arrangement site, was groundtruthed and appeared to be in good condition. Site #45-1-2756 was not groundtruthed as it had been recorded by RPS only two months prior to this survey. No new Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.3 Survey Unit 14

This survey unit was located in the eastern portion of the Project Application Area, to the south of a large tributary of Carne Creek which ran parallel with Fire Trail No. 4. The topography of this area was characterised by undulating hills, moderately steep valley slopes, and spurs and pagodas in the east of the survey unit.

The vegetation in this survey unit was open forest, dominated by ironbark and scribbly gum with a moderate to very dense understorey of low lying shrubs and banksias present at the edge of the survey area (**Plate 33**). Vegetation along the tributary system was generally populated by overgrown ferns and other shrubs. Disturbances in the area were generally a result of recreation, evidenced by the presence of trail bike tracks, and the dumping of domestic refuse (**Plate 34**).

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.4 Survey Unit 15

This survey unit was located on the southern boundary of the Project Application Area to the west of Sunnyside Ridge Road. The survey unit was a very small area which consisted of moderately steep inclines associated with tributaries of the Wolgan River which run through the region. There was little to no disturbance in the majority of this survey unit, with the exception of a fenced and cleared area in the west, which had been cleared to establish broad vehicle tracks and turning circles (**Plate 35**).

The vegetation was open woodland, dominated by scribbly gum and some ironbark, with a heath understorey (**Plate 36**). Hanging swamps were also observed in the general area.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.5 Survey Unit 16

This survey unit was located to the west of Sunnyside Ridge Road and an escarpment followed the western boundary. The remainder of the landscape was predominantly level to gently undulating slopes, with no rock outcrops or overhangs noted.

The vegetation in this survey unit was primarily ironbark with a low lying shrub understorey (**Plate 37**). The area appeared to have little disturbance other than access tracks, barrier fencing and number of motorbike trails (**Plate 38**). No domestic refuse was present and no other disturbances were seen. However, it should be noted that adverse weather conditions on the day of the survey made visibility very difficult.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.6 Survey Unit 17

This survey unit was located to the west of Sunnyside Ridge Road and to the east of the Wolgan River (western arm). The topography was variable, being level to gently undulating in the east of the survey unit around Sunnyside Ridge Road and becoming steeper further west in association with the Wolgan River. Several tributaries of the Wolgan River run through the north, west and south of the survey unit.

The vegetation chiefly comprised regenerating open woodland, dominated by scribbly gum, banksias, heath and some ironbark (**Plate 39**). As a result of previous logging practices in the area, most trees in the area were new growth, and therefore not suitable to bear Aboriginal cultural modification. Leaf litter in vegetated areas was thick, severely limiting GSV and GSE (**Plate 40**).

Disturbance was noted in the area in the form of a fenced-off sub-station (also observed during the inspection of survey unit 13, **Plate 34**) and several drill pads, with a graded and well used access track also leading to the survey unit. The track that was used to access the survey area does not appear on available maps. These areas of disturbance, including the access tracks, provided the only exposures in the survey unit, and these were inspected closely for evidence of Aboriginal sites or objects; none were identified.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.7 Survey Unit 18

This survey unit was located in a small area to the north-east of Sunnyside Ridge Road. Topographically, the survey unit comprised a series of moderate slopes with only one rock outcrop observed (**Plate 41**). This rock outcrop displayed no evidence suggesting occupation or use of the site by Aboriginal people. No water courses were noted in this survey unit.

This vegetation was dominated by ironbark, though scribbly gum and stringy bark trees were also present (**Plate 42**). Evidence of recreational and industrial use was noted in this survey unit in the form of domestic refuse, bike trails and evidence of heavy machinery having previously moved through the area (**Plate 43**).

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.8 Survey Unit 19

This survey unit comprised a narrow strip located between a tributary of Carnes Creek and Fire Trail No. 4. The survey unit comprised a moderately steep slope, with a valley and pagodas visible to the east and outside of the eastern boundary of the Project Application Area.

The vegetation was dominated by a mixture of ironbark and scribbly gum, with some banksias and a low

lying shrub understorey. Along tributaries in the survey unit the vegetation became thick, populated by ferns and other ground covering species. No sandstone sheets were observed in or around the water courses. Evidence of disturbance in the area included general rubbish, as well as vehicle tracks.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.9 Survey Unit 20

Survey Unit 20 was situated in an open valley adjacent to the Angus Place Colliery pit top, and was accessed via Wolgan Road. The survey unit extended to the north, west, and south of the pit top, its eastern boundary running parallel to western ridgelines of the Newnes Plateau. As the majority of the survey unit was private property and RPS did not have permission to survey in these areas, the survey was limited to a visual inspection of the area immediately to the west of the pit top, which was conducted from outside of the private properties.

In this survey unit, vegetation consisted primarily of a thick, dense ground cover of pastoral grasses, as well as a number of mature trees and shrubs (**Plate 44**). Due to this dense ground cover, GSV and GSE were low. Several small tributaries of Kangaroo Creek and Coxs River ran through the survey unit in the south, and vegetation was slightly thicker in these areas. The area has been previously disturbed by the construction of a vehicle track, a number of dams, and general residential and farming use.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.10 Survey Unit 21

This survey unit was located on the Newnes Plateau and comprised a ridge and upper slopes. Numerous drainage lines, all tributaries of Carne Creek, traversed the area, with the largest creek running in a roughly west to east direction. Conditions at the time of the survey were foggy, reducing visibility.

The vegetation in this survey unit was open woodland, and a number of mature eucalypt trees (particularly paper bark) were present in the area (**Plate 45**). No evidence of Aboriginal cultural modification was observed. Evidence of recent bushfire was noted, with lower storey vegetation reduced. Leaf litter was extremely dense, reducing GSV and GSE to low.

A long, extended trail bike track was used for access through the survey unit as it provided the best visibility. Disturbances included dumping of waste, such as 44-gallon drums (**Plate 46**). No artefacts were identified.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.11 Survey Unit 22

This survey unit was located on the Newnes Plateau along the western escarpment, adjacent to the Wolgan River. A series of previously recorded rock shelters were recorded as being present in or near this survey unit, and it was observed that high order tributaries of the river were associated with each of the rock shelters. A trail bike track which traced a drainage line was followed to the base of the escarpment, where the shelters were located. Thick bracken formed a low understorey on each side of the drainage channel, which was approximately ten metres wide (**Plate 47 and Plate 48**).

Rockshelter #45-1-0084, a shelter with deposit in this survey unit, was not groundtruthed due to accessibility issues.

Shelter with deposit, AHIMS #45-1-0137, which was situated inside the boundary of the survey unit, was groundtruthed and its condition was assessed as being very good (**Plate 49**). Disturbance was limited to

animal use, particularly wombat burrows. More than 20 artefacts were identified on the floor of the shelter. The artefacts were worked chert flakes, with one core also present; flakes and a core manufactured of silcrete were also noted. Evidence of dried "hearth" material was also observed throughout the shelter and small pieces of burnt bone were also present (**Plate 50**). Given the relatively undisturbed nature of the shelter, having no evidence of recent campfires or other usage, it is considered to be likely that the deposit would contain stratified, *in situ* material.

AHIMS #45-1-0144, a shelter with deposit, was identified, though its current condition could not be properly established due to the presence of fallen trees (**Plate 51**). It was considered that if the trees were removed a more comprehensive assessment could be carried out. No artefacts were observed in visible areas.

AHIMS #45-1-0145, a shelter with deposit situated just inside the survey unit, was groundtruthed and found to be in good condition (**Plate 52**). Two artefacts were identified (**Plate 53**), and large patch of yellow lichen is located on the rear wall but no art was observed in the shelter.

AHIMS #45-1-0149, also a shelter with deposit, was located just inside the survey unit and appeared stable, with no evidence suggesting that collapse had occurred (**Plate 54**).

AHIMS #45-1-0150, another shelter with deposit, was able to be located in the curve of a drainage channel. This shelter faced north east, was in good condition, and would have been a favourable camp site (**Plate 55 and Plate 56**). A waterfall is also located in the shelter. Although evidently currently or very recently used for camping, the shelter is well maintained. There is some leakage at the north end of the shelter, with ferns growing between the back wall and the ceiling.

AHIMS #45-1-0084, could not be groundtruthed due to inaccessibility. AHIMS sites #45-1-0137, #45-1-0144, #45-1-0145, #45-1-0149 and #45-1-0150 were all located and groundtruthed to varying degrees dependent on available access and safety issues. No new Aboriginal sites or objects were identified and no historic heritage sites were identified in this survey unit.

7.3.12 Survey Unit 23

This survey unit was located in the north-east of the Project Application Area. The best access to this survey unit, comprising an access track approaching from Birds Rock Trail No. 2 in the south, was rendered impassable due to recent rains. An alternate trail along the ridge west of the site was sought but not accessible; however, a steep slope between chasms of the gorge to the east was sufficient to grant site access. The survey unit was characterised by steep slopes and escarpments, and vegetated by low-growing dense shrubs and large mature trees (**Plate 57 and Plate 58**). Ground surface visibility and GSE were considered to be low, severely limited by leaf litter and ground covering vegetation.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.13 Survey Unit 24

This survey unit comprised a central escarpment. Two previously recorded sites, both rockshelters, are located within (AHIMS #45-1-0153), and along the boundary of (AHIMS #45-1-0156) this survey unit (see **Figure 3** and **Figure 5**). Access to these rockshelters was attempted by travelling up the central escarpment between the two sites, which was found to terminate at the south point above a large gorge. The two sites were on opposite sides of a large, steep open space. No access to either escarpment was evident.

A fire trail was followed to the east and then a drainage line down to the base of the gorge. Very large eucalypts were noted, along with banksias and tree ferns in the understorey (**Plate 59**). No evidence of disturbance or fire damage was noted in the area, which was very lush, with undergrowth consisting of dense bracken. By this route, #45-1-0153, a shelter with deposit, was located.

The entrance to #45-1-0153 was blocked by a large, dense tree fall (**Plate 60**). From what could be observed from the entrance, the rock shelter appeared to be in good condition. Due to the difficulty of access, little disturbance was evident.

The team followed another track to the east of #45-1-0153 to a ridge. This was followed to the boundary of the Project Application Area. AHIMS site #45-1-0156 was not accessed during the inspection of this survey unit.

AHIMS #45-1-0153, a shelter with deposit, was able to be located in this survey unit. AHIMS #45-1-0156 was not. No new Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.14 Survey Unit 25

This survey unit was located to the north-west of the Blue Mountain range and the Wolgan River. A number of trails in the north east corner were surveyed; however, no Aboriginal sites or objects were identified.

The topography of this portion of the Project Application Area comprised rolling ridges running north to south. Seasonal native grasses and thick leaf litter were observed. The vegetation comprised a regenerating, sparse middle storey of banksias with mature ironbarks and stringy barks throughout (**Plate 61**). Disturbances in the area included cleared vehicle tracks and barrier fencing (**Plate 62**)

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.15 Survey Unit 26

This survey unit was located to the east of Birds Rock Trail No. 1. The dominant landform was a north trending spur, steep slopes to the east and west leading to drainage channels. No overhangs suitable for use as shelters were observed.

The vegetation comprised an open woodland community dominated by ironbarks and stringy barks. Mature banksias provided a thick understorey, along with grasses and thick leaf litter (**Plate 63**). This vegetation obscured the ground surface and severely limited the GSV and GSE in the area. A number of tracks and trails, including dirt bike tracks, traversed this survey unit providing the only ground surface visibility and areas of exposure in the unit. These tracks also provided evidence of the extent to which this survey unit has been used for and disturbed by recreational activities.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.16 Survey Unit 27

This survey unit was located to the west of Sunnyside Ridge Road and east of the Wolgan River. It comprised a west-trending spur between two large tributaries of the river. A large number of drainage lines and tributaries of the river were present in the survey unit. No sandstone outcrops, overhangs or boulders suitable for use as shelters were observed.

The vegetation of the survey unit was dense open forest, with a mixture of mature and juvenile ironbark and stringy bark trees, which were interspersed with banksias, acacias, and low lying shrubs (**Plate 64**). All trees were regrowth and therefore not of a suitable age to bear Aboriginal cultural modification. Heavy leaf litter and dense grass cover obscured the ground surface, thereby limiting GSV and GSE ratings to low.

Due to the frequent use of the area for recreational activities, disturbance was clearly evident in the form of four wheel drive vehicle tracks and smaller trail bike tracks, as well as campfires and general domestic rubbish. Evidence of past logging practices was also noted (**Plate 65**).

A white hand stencil was observed on sandstone on a vehicle track **(Plate 66).** Based on the use of white spray paint to colour the stencil and the horizontal orientation of the hand, both RPS archaeologists and Aboriginal community stakeholders determined that this stencil was modern.

An attempt was made to access previously registered site #45-1-0146, a shelter with deposit, but no viable access could be identified due to the steep and rocky slopes and with dense vegetation.

AHIMS #45-1-0146 was situated in this survey unit, but the site could not be groundtruthed due to inaccessibility. No new Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.17 Survey Unit 28

This survey unit was bisected by Sunnyside Ridge Road and a Fire Trail No.6 formed the southern border. The dominant landforms in this survey unit were ridges and narrow valley areas, with a steep escarpment forming the eastern boundary. The escarpment also contained AHIMS #45-1-0156, a shelter with deposit.

This site had been targeted previously in the Survey Unit 24, but entry to the site could not be navigated due to steep cliffs. A further attempt was made to access the site by coming down and through the valley before moving to the east. This, however, proved impossible due to extremely heavy vegetation, including large fallen trees and branches, and the presence of wild pig traps. It was agreed upon by all members of the survey team (RPS archaeologists and Aboriginal community representatives) that this site could no longer be accessed on foot (**Plate 67**).

The vegetation of the ridge and slopes was open woodland dominated by stringybark, with some ironbark and small numbers of pine trees. Within the valley and along drainage lines, ferns became increasingly prevalent.

AHIMS #45-1-0156, a shelter with deposit, was situated in this survey unit, but was not able to be groundtruthed due to inaccessibility. No new Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.3.18 Survey Unit 29

Survey Unit 29 was located to the north of the Angus Place Colliery pit top. The survey unit was situated in an open valley associated with the Coxs River and was accessed via Wolgan Road. As the majority of the area was private property and RPS did not have permission to survey in these areas, the survey was limited to a visual inspection of the area from Wolgan Road, and no pedestrian survey was conducted.

In this survey unit, vegetation consisted primarily of a thick, dense ground cover of pastoral grasses, as well as a large number of mature trees and shrubs in the northern and south eastern portions of the unit. Due to this dense ground cover, ground surface visibility was low (**Plate 68**).

Lambs Creek ran through the survey unit in a roughly east-west direction, and the Coxs River ran through the western portion of the unit in a roughly north-south direction. Vegetation was noticeably thicker along the banks of both Lambs Creek and Coxs River.

The area has been previously disturbed by the construction of Wolgan Road, the construction of a dam, and general residential and farming use.

No Aboriginal sites/objects or historic heritage sites were identified in this survey unit.

7.4 Survey Coverage Data

The survey coverage table is required as part of OEH requirements (DECCW 2010) and its purpose is to give an indication of the level of probable detection of artefact sites following indicators presented by Burke and Smith (2004). As presented earlier in this report, rockshelters were predicted to be the most common site type and therefore the survey targeted such areas resulting in high survey coverage. OEH's survey coverage table is not designed to reflect coverage of obtrusive features such as rockshelters (DECCW 2010:17) and therefore the survey coverage in this table relates only to artefact sites and related unobtrusive features.

Table 13 Survey Coverage data

Survey Unit	Survey Unit area (m²)	Area surveyed (m²)	Exposure%	Visibility%	Effective Coverage Area (m²)	Effective coverage %
1	2218434	89366	10	5	446.83225	0.5
2	950579.7	58499	10	10	584.98606	1.0
3	542700	44201	10	10	442.00905	1.0
4	2166000	88304	10	5	441.5201	0.5
5	2336104	91706	10	5	458.52956	0.5
6	158600	23895	10	10	238.94769	1.0
7	158600	23895	40	20	1911.5815	8.0
8	407300	38292	10	10	382.92036	1.0
9	331800	34561	40	15	2073.675	6.0
10	790800	53356	40	20	4268.4929	8.0
11	442500	39912	40	20	3192.9923	8.0
12	1348000	69662	40	20	5572.9633	8.0
13	2872000	101682	10	10	1016.8186	1.0
14	1463000	72573	10	10	725.72722	1.0
15	745500	51805	10	5	259.02703	0.5
16	2119000	87341	15	10	1310.1107	1.5
17	2126000	87485	40	20	6998.7885	8.0
18	183100	25674	10	5	128.37056	0.5
19	524300	43445	10	5	217.22569	0.5
20	1820000	80944	10	10	809.44425	1.0
21	1857000	81763	40	20	6541.0458	8.0
22	866700	55858	15	10	837.87052	1.5
23	1407437.8	71181	10	10	711.8129	1.0
24	1300000	68411	10	5	342.05263	0.5
25	3859456.9	117873	10	10	1178.73	1.0
26	1550835.7	74720	10	5	373.59766	0.5
27	4149000	122215	10	10	1222.1457	1.0
28	4120463.6	121794	10	10	1217.9355	1.0
29	953600	58591	40	15	3515.488	6.0

7.5 Non-Accessible Survey Units

During the course of the field work it was noted that some parts of the Project Application Area were not accessible and therefore not surveyed. Such areas were considered too steep to walk or sheer cliffs created large drop-offs that were not navigable. It is unlikely that these areas would have occupation evidence due to the difficulty in accessing the area. The non-accessible survey units are usually located in the steep hills. The predictive model in Section 6, did not predict that Aboriginal sites would be located in this area.

7.6 Summary of Aboriginal Sites Identified During the Survey

No new Aboriginal objects or sites were identified during the survey. Of the 14 registered AHIMS sites that are located within the designated study areas (**Figure 2**) of the Project Application Area, eight were able to be located and inspected during the survey and one had been recorded by RPS only two months prior to the commencement of the field survey (**Table 14**).

Table 14 Summary of registered AHIMS sites groundtruthed inside Project Application Area

Site Code	Site Name	Eastings GDA94/Zone56	Northings GDA94/Zone56	Site Type	Current condition	Survey Unit
45-1-0137	11 Newnes State Forest	236600	6306900	Shelter with Deposit	As per site card	22
45-1-0144	18 Newnes State Forest	236350	6306800	Shelter with Deposit	As per site card	22
45-1-0145	19 Newnes State Forest	236400	6306750	Shelter with Deposit	As per site card	22
45-1-0149	23 Newnes State Forest	236300	6306800	Shelter with Deposit	As per site card	22
45-1-0150	24 Newnes State Forest	236200	6306800	Shelter with Deposit	As per site card	22
45-1-2689	Angus Place Stone Arrangement #1	239700	6305359	Stone Arrangement	As per site card	13
45-1-0151	27 Newnes State Forest	232050	6305550	Shelter with Deposit	As per site card	11
45-1-0155	31 Newnes State Forest	226800	6308700	Shelter with Deposit	Incorrect co-ordinates. Site card to be updated	8
45-1-2756/45-1-02757	RPS SV RS1	238703	6304891	Shelter with Art; grinding groove	As per site card	13

The remaining five sites were not able to be relocated primarily due to issues of accessibility (**Table 15**).

Table 15 Summary of registered AHIMS sites unable to be groundtruthed

Site Code	Site Name	Eastings GDA94/Zone56	Northings GDA94/Zone56	Site type	Survey Unit
45-1-0146	20 Newnes State Forest	236050	6307300	Shelter with Deposit	27
45-1-0153	29 Newnes State Forest	238300	6310480	Shelter with Deposit	24

Site Code	Site Name	Eastings GDA94/Zone56	Northings GDA94/Zone56	Site type	Survey Unit
45-1-0146	20 Newnes State Forest	236050	6307300	Shelter with Deposit	27
45-1-0156	32 Newnes State Forest	237750	6311000	Shelter with Deposit	28
45-1-0078	Rock Art Angus Place Colliery 26 Kangaroo Creek	232100	6306050	Axe Grinding Groove, Shelter with Deposit	11
45-1-0084	Location 15, Site 3; Newnes State	236900	6307300	Shelter with Deposit	22

7.7 Interpretation of Survey Results and Summary of Evidence of Aboriginal Occupation

During the course of the archaeological survey, no new Aboriginal sites or objects, and no new historic heritage sites were identified. A total of eight previously registered AHIMS sites were able to be located and inspected.

Previous archaeological studies in the area (Electricity Commission of New South Wales 1990; Gorecki 1983) have comprehensively surveyed the Project Application Area and its surrounds. Consequently, this assessment did not result in the identification of further Aboriginal or historic heritage sites, but did allow for the groundtruthing and inspection of eight previously recorded and registered AHIMS sites.

7.8 Discussion of Survey Results

7.8.1 Aboriginal Sites

A predictive model of the Project Application Area was formulated on the basis of a review of the relevant environmental and archaeological information. Based on AHIMS data and previous archaeological investigations in the vicinity of the Project Application Area, it was predicted that the most common types of sites would be rockshelters (with art, deposit or artefacts) and open artefact scatters/isolated finds. It was predicted further that the archaeological contents of such artefact sites would comprise flaked stone artefacts; that up to 30 artefacts would be expected as a maximum frequency for artefact scatters; and that raw materials would include quartz, chert, quartzite, silcrete, mudstone and tuff. It was also predicted that the location of the sites would be within 100 metres of watercourses.

No new Aboriginal sites were identified as a result of this survey. This was as expected, given the number of surveys that have already been conducted in the region, the extent of disturbance by both industrial and recreational users and the general poor visibility caused by dense vegetation.

Not all previously recorded sites were able to be re-located and thus updates to the condition of these sites could not be tabulated. In some cases, the location of the recorded co-ordinates did not match recorded site descriptions; whilst in others site descriptions matched those recorded, but features such as artefacts were not able to be identified. As mentioned above, it should be borne in mind that heavy vegetation across the Project Application Area obscured much of the ground surface, thereby limiting the ability to identify sites such as artefact scatters and/or isolated finds. As these sites can be in any landscape, it may be that these types of sites are present within the Project Application Area, beneath the leaf litter.

8.0 Significance Assessment

In order to develop appropriate heritage management outcomes, it is necessary for the significance of sites or areas of archaeological sensitivity to be assessed.

With respect to Aboriginal heritage, sites can be significant for cultural and/or scientific reasons. Aboriginal people are the best placed to assess cultural significance and are therefore consulted in the Aboriginal heritage management process. Scientific significance is assessed according to scientific criteria outlined in OEH guidelines (April 2011).

8.1 Aboriginal Cultural Significance Criteria and Assessment

An assessment of cultural significance incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the sites and their own value system. An opportunity for Aboriginal stakeholders to comment on the significance of the sites within the Project Application Area was provided along with the draft copy of this report. No written comments were received by RPS, however, telephone conversations with North East Wiradjuri Company Ltd, Bathurst Local Aboriginal Land Council, Mingaan Aboriginal Co-operation, Wiray-dyuraa Ngambaay-dyil, Wiray-dyuraa Maying-gu and Wiradjuri Council of Elders on 8 August 2013, indicated that they were satisfied with the draft report, and had no additional comments to make.

8.2 Scientific (Archaeological) Significance Criteria

Scientific significance, also referred to as archaeological significance, is determined by assessing an Aboriginal heritage site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies. Criteria for archaeological significance have been developed in accordance OEH guidelines, as shown in **Table 16** (Office of Environment and Heritage 2011).

Table 16 Archaeological significance criteria

Criteria	Description
Rarity	This criterion examines the frequency of the identified site types with others previously recorded in the local or regional landscape.
Representativeness	All sites are representative of a site type, however, some sites may be in better condition, or demonstrate more clearly a particular site type. Representativeness is based on the understanding of extant sites in the local or regional landscape and the purpose of this criterion is to ensure a representative sample of sites area conserved for future generations.
Integrity	This refers to site intactness. A site with contextual integrity can provide information relating to chronology, social systems, tool technology, site formation processes, habitation, frequency of use as well as other occupation indicators. Moderate to high levels of disturbance will generally result in low integrity.
Connectedness	Relates to inter-site relationships, that is, whether a site can be linked to an archaeological complex, or where sequence of activities can be discerned. For example, a quarry (stone extractions site), may be linked to an adjacent heat treatment pit and knapping floor, these site thus could be linked as part of a stone tool production sequence.
Complexity	Refers to the contents of the site, such as, the variety and nature of features and/or of artefacts present. For example, rock art sites with many motifs may be ranked highly in terms of complexity, or artefact scatters with a wide variety of raw materials and/or or tool types may be more complex than surrounding sites.
Research Potential	This criteria is used to identify whether a site has the potential to contribute new information which to the interpretation of Aboriginal occupation in the area.

The archaeological significance criteria are usually assessed on two scales: local and regional. In exceptional circumstances, however, state significance may also be identified. Archaeological significance criteria is assessed in three levels to which scores are assigned; low (score=1), moderate (score=2) and high (score=3).

A combination of these scores then enables an overall significance ranking of the site to be determined.

- Low significance 6-10
- Moderate significance 11-14
- High significance 15-18

8.2.2 Assessment of Archaeological Significance

The archaeological significance of 14 identified archaeological sites within the Project Application Area has been assessed and is summarised in **Table 17**. As no new Aboriginal or historic heritage sites were identified during the survey of the Project Application Area, the assessment of significance is limited to previously registered AHIMS sites.

Table 17 Assessed levels of archaeological significance

Site	Site type	Significance scale	Rarity	Representa-tiveness	Integrity	Connectedness	Complexity	Research Potential	Rank (Total Score)	Overall Archaeological Significance
45-1-0078	Shelter with deposit; grinding groove	Local	3	3	2	3	2	2	15	High
		Regional	3	2	2	3	2	2	14	Moderate
45-1-0084	Shelter with deposit	Local	3	2	2	2	2	2	13	Moderate
		Regional	2	1	1	1	1	1	7	Low
45-1-0137	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0144	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0145	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0146	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0149	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0150	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0151	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0153	Shelter	Local	1	2	1	1	1	1	7	Low

Site	Site type	Significance scale	Rarity	Representa-tiveness	Integrity	Connectedness	Complexity	Research Potential	Rank (Total Score)	Overall Archaeological Significance
	with shelter	Regional	1	1	1	1	1	1	6	Low
45-1-0155	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-0156	Shelter with deposit	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-2689	Stone arrangeme nt	Local	1	2	1	1	1	1	7	Low
		Regional	1	1	1	1	1	1	6	Low
45-1-2756/2757	Shelter with art; grinding groove	Local	3	3	3	3	3	3	18	High
		Regional	3	3	3	3	3	3	18	High

9.0 Impact Assessment

In total, 14 previously recorded Aboriginal sites were identified within the four study areas of the Project Application Area, and eight of these were able to be inspected as part of this assessment. No new historic heritage sites were identified during the survey.

Numerous mine plan options and variations were considered by Centennial during the project planning phase. The proposed mine plan was developed and selected as the optimal option in light of various constraints, including the existing surface environment and Aboriginal heritage items. Where practicable, the mine plan was adjusted or refined to avoid or minimise the potential for impact on Aboriginal cultural heritage sites. This included, wherever possible, adjusting the widths of the proposed longwalls and locating the Aboriginal sites over main headings or over gateroad pillars to minimise subsidence effects.

9.1 Impact Avoidance and Minimisation

There are two main types of activity associated with the Project that have the potential to impact on Aboriginal heritage sites: subsidence associated with underground mining and surface disturbance activities. As none of the sites are anticipated to be affected by any of the surface activities, the risk of impact to sites is restricted to subsidence and surface cracking associated with longwall mining. A revised draft Subsidence Predictions & Impact Assessments Report was provided by Mine Subsidence Engineering Consultants (MSEC) in September 2013. The findings of the predicted subsidence impact upon the previously recorded Aboriginal sites in that report are confined to sites on rock platforms, such as rockshelters, within the Project Application Area.

9.2 Potential Impacts

Of the 14 sites identified in the four study areas inside the Project Application Area, the site types most likely to be affected by subsidence and cracking are rockshelters and grinding grooves. Three sites most at risk because they fall inside the 26.5 degree angle of draw are, AHIMS #45-1-0084 , #45-1-0137 and #45-1-2756/2757 (**Table 18**). The remaining 11 sites are predicted to experience vertical subsidence of 20 mm or less. This means that although these sites may experience very low level subsidence (<20mm), they are not likely to experience any significant conventional tilts, curvatures or strains. In addition, the location of these sites along the sides of ridge lines means they are not expected to experience any valley related subsidence movements or compressive strains due to valley closure movements (MSEC 2013:85).

Table 18 Archaeological sites potential subsidence impact (MSEC 2013:85)

Site Reference	Maximum Predicted Total Conventional Subsidence (mm)	Maximum Predicted Total Conventional Tilt (mm/m)	Maximum Predicted Total Conventional Hogging Curvature (km^{-1})	Maximum Predicted Total Conventional Sagging Curvature (km^{-1})
45-1-0084	1800	8	.10	.20
45-1-0137	20	<0.5	<0.01	<0.01
45-1-2756/2757	800-950	8	0.05	.10
All other sites	<20	<0.5	<0.01	<0.01

Where subsidence is 20mm or less no impact is expected; therefore the minimal subsidence expected to be caused by the project at these other 11 sites eliminates them from further consideration for mitigation measures. However, it is predicted that the conventional subsidence and tilt under #45-1-0084 , #45-1-0137 and #45-1-2756/2757 will be in excess of 20mm as shown in **Table 18** above and as such impact mitigation

is exclusively to be concerned with them. MSEC contends based on conventional strains (2013:94) that the sites most at risk are 45-1-0084 and 45-1-2756/2757. The maximum predicted curvatures for these will be 0.10 km-1 hogging and 0.20 km-1 sagging, which represents the minimum radii of curvature. The maximum predicted conventional strains are around 1 mm/m tensile and 2 mm/m compressive.

Despite the difficulty of assessing the likelihood\of instabilities for the rock shelters based upon predicted ground movements, MSEC reports the consequences are reported to likely result in no significant physical impact based on prior experiences in the Southern Coalfields where longwall mining has been carried out underneath rockshelters (2013:94), although it is reported that damage to 10% of rock shelters in the Southern Coalfields did occur.

Beyond subsidence impacts, one has to consider external harm to archaeological sites such as those caused by surface works. As discussed above, Centennial Coal has no plans for any surface works in the vicinity of archaeological sites located in the Project Application Area, hence, the proposed surface activities predicted to harm any known Aboriginal sites. However, should this change, mitigation measures in the CHMP that will be developed for this project in consultation with the Registered Aboriginal Parties subsequent to approval for the Project Application Area should include methods to identify in advance potential harm to archaeological sites either known or unknown.

The above data and information represents a relatively low potential for impact from the project to Aboriginal sites in the Project Application Area. Despite this the potential for subsidence to occur may result in harm at 45-1-0084, 45-1-0137 and 45-1-2756/2757.

Specifically, in relation to site 45-1-2756 / 2757 it is located under a Pagoda formation. The MSEC report defines pagodas as isolated freestanding rock formations with heights greater than 5 metres (2013:68). Their report indicates that Pagodas located directly above a proposed longwall are likely to experience some fracturing and where rock is marginally stable some spalling of exposed rock faces. It is expected that the impacts resulting from the proposed mining would represent less than 1 % of total surface area of the isolated pagodas which are located directly above the proposed longwalls (2013:71). Hence there is potential for harm to occur to the hand stencil at site 45-1-2756 / 2757.

9.3 Mitigation for Aboriginal Site Identification, Monitoring and Management

The aim of the monitoring program, which should be adopted in the necessary post-approval CHMP, is to identify the potential for harm to Aboriginal sites as a result of mining activities and to identify appropriate mitigation strategies to be implemented, if required.

The monitoring program is relevant only to sites 45-1-0084 , 45-1-0137 and 45-1-2756/2757 and requires the recording of the condition of each site before mining (baseline survey and baseline check) and the condition of the site after mining (post mining initial condition and post mining secondary condition check) with the program separated into three phases:

- Phase 1: Baseline recording (prior to site being undermined);
- Phase 2: Post mining initial condition (within a reasonable time-frame following undermining);
- Phase 3: Post mining secondary condition (approximately 8 months after undermining); and
- Phase 3a: (Longwall Mining) - In instances where final subsidence is not achieved until after a number of longwall extractions have taken place, then additional inspections by a qualified cultural heritage consultant may be required to assess any further risks to Aboriginal sites.

9.3.1 Monitoring Protocols for Structurally Sensitive Sites (Grinding Grooves, Stone Arrangements & Rockshelters)

Phase 1: In order to manage a rockshelter, grinding groove or stone arrangement site, a baseline recording must be undertaken before the commencement of mining. This baseline recording must include the following:

- Detailed archaeological recording;
- Archival-quality photos; and
- The designation of survey control points for monitoring.

The heritage consultant will be responsible for undertaking the detailed recording and photography of the site, and observations of the rock morphology (surface) should be recorded. The archival-quality photographs should be taken in accordance with OEH and Heritage Branch guidelines. A 3D terrestrial scan of the rockshelter/grinding groove site(s) may also be considered if appropriate.

A minimum of six control points should be nominated on the rockshelter/grinding groove site(s). The recording of control points must be undertaken by a suitably qualified surveyor (appointed by Centennial or heritage consultant) in consultation with the heritage consultant using a total station (or better equipment if available). The purpose of the control points is to provide points of reference on the rockshelter/grinding groove in order to later monitor the effects of subsidence. The location of these control points should preferably be tied to known surveyed points outside the zone of influence and/or other permanent points such as electricity transmission towers.

Measures to reduce potential adverse impacts to sites as a result of mining activities are to be considered in consultation with the Aboriginal Parties.

Phase 2: Within a reasonable timeframe following the completion of undermining, the condition of the site must be reinspected and the condition of the site compared to the last documented results. Again, observations of the rock morphology (surface) should also be recorded, particularly if there is widening of existing cracks and/or development of new cracks. Signs of sheet erosion or exfoliation must also be recorded and archived. This data must be compared to recorded information in Phase 1.

If the site is assessed to be at a greater risk of harm as a result of mining activities, Centennial must notify and inform the OEH (Environment Line: 131 555) that there is a potential for harm to the site and follow the advice given by OEH.

Phase 3: The post mining secondary check must be undertaken approximately eight months after the mining activity was finished. A final check of the six control point measurements must be undertaken and compared to previous results. If there are no changes to the rock surface morphology, widening of existing cracks or signs of sheet erosion/surface exfoliation, then no further monitoring is required.

If there is a discrepancy from the baseline recording, and if this determined to be as a result of subsidence, Centennial must contact a suitably qualified cultural heritage consultant to assess the potential risk of harm to the site. The appropriate mitigation measures provided by the inspecting heritage consultant must be followed and implemented accordingly.

Phase 3a: (Longwall Mining) - In instances where final subsidence is not achieved until after a number of longwall extractions have taken place, then additional inspections by a qualified cultural heritage consultant may be required to assess any further risks to Aboriginal sites.

9.3.2 Monitoring Protocols for Artefact Scatters and Isolated Finds

Once an open site has been assessed to be at risk of harm, and it is not feasible for Centennial to modify the mining footprint to eliminate the risk, then the following protocol must be adopted – irrespective of whether the risk is related to surface facilities and/or ground surface subsidence.

Phase 1: Immediately before the commencement of mining activity, a baseline check of the sites condition must be undertaken. The purpose of this exercise is to document the condition of the site immediately before mining related activities take place and gauge whether there are impacts to the site related to natural processes rather than mining activities. Monitoring of the site should be undertaken using the following documentation methods:

- Digital photography (scaled as appropriate);
- Field notes to record the current condition and status of the site;
- GPS (using differential, preferably) to locate and confirm site location; and
- Produce a site plan using baseline and offsets (tape measure), or GPS plotted polygons, as appropriate.

During the due diligence inspection and baseline recording, the location of the site must be verified using a GPS and the site dimensions and content must be confirmed. Photos of the site need to be taken so that the overall condition can be documented.

If the site is determined by the archaeologist and representatives of the Aboriginal Parties to be at an inappropriate risk of harm, consideration should be given to salvage the artefacts with the aim of returning the objects to their original location after the completion of mining following notification of OEH.

Phase 2: Within a reasonable timeframe following the completion of undermining, the condition of the site must be reinspected and the condition of the site compared to the last documented results. If the level of harm to the site becomes evident immediately post-mining, Centennial must endeavour to protect the site from further harm, for example, by using non-invasive barrier fencing to prevent erosion. The Centennial Environmental Team must notify and inform OEH (Environment Line: 131 555) that there is a potential for harm to the site and follow the advice given by OEH.

Phase 3: The post mining secondary check must be undertaken approximately eight months after the mining activity has finished. The inspection is required to make an assessment on whether the ground surface conditions have stabilised. If ground conditions have stabilised and no changes to site condition are observed, then no further monitoring should be required. If noticeable amounts of erosion or disturbance are identified, Centennial's Environmental Team must also notify and inform OEH (Environment Line: 131 555) that there is a potential for harm to the site and follow the advice given by OEH.

Phase 3a: (Longwall Mining) - In instances where final subsidence is not achieved until after a number of longwall extractions have taken place, then additional inspections by a qualified cultural heritage consultant may be required to assess any further risks to Aboriginal sites

9.4 Intergenerational Equity

The principles of ecologically sustainable development need to be considered under Section 2A of the NPW Act (1974). Inter-generational equity is part of these principles, which allows future generations to access the cultural and environmental diversity of the present generation.

Inter-generational equity has been considered as part of the assessment of significance. For example, any Aboriginal sites of State significance should be considered for blanket protection for future generations, as these sites have been assessed as having highest significance within NSW.

No Aboriginal sites of state significance were identified in this assessment. It should also be noted that the majority of sites have nil to low risk of impact, and that only two sites have been identified to be at potential risk from impact. Potential impacts are also to be avoided or minimised by the implementation of a rigorous monitoring and management program (Section 9.3) to ensure impacts to sites are minimised and the cultural integrity and significance of sites are maintained as far as practicable.

10.0 Conclusions and Recommendations

The desktop study revealed that a total of 49 previously registered sites were situated within the boundary of the Project Application Area, with only 14 of these located inside the four study areas which indicated proposed impact zones for both surface works and subsidence. With regard to the 14 sites, three were found to be at potential risk of harm from subsidence and none were found to be within proposed impact zones for surface disturbances. The remaining 11 sites are 'unlikely' or 'highly unlikely' to be impacted by the extraction of the proposed longwalls. It has been assessed that the three sites in **Table 18** will be managed in accordance with monitoring protocols set out in Section 9.3.

With regard to historic heritage, no sites have been recorded and none were listed in any heritage registers inside the Project Application Area.

This report has considered the environmental and archaeological context of the Project Application Area, developed a predictive model and reported on the results of an archaeological survey of four study areas in the Project Application Area. The following management recommendations have been prepared in accordance with the relevant legislation. The following recommendations have been made on the basis that the Project Application Area will be accepted as a state significant development under Division 4.1 as part of the *Environmental Planning & Assessment Act 1979* (NSW).

Recommendation 1

Site #45-1-0084, a shelter with deposit, was originally recorded in 1983 and since recording has become isolated by dense vegetation and rockfalls creating steep and difficult access. As discussed in Section 9, predicted impact for this site is low, with minimal risk of significant harm. If access is possible the site should be monitored as set out in Section 9.3.1.

Recommendation 2

Site #45-1-0137, which is subject to predicted subsidence as a result of the proposed extension of Angus Place Colliery, must be monitored in accordance with the procedures set out in Section 9.3 of this report. The subsequent CHMP should be implemented and updated where required to take into consideration the commitments made in this heritage assessment and any subsequent conditions of approval.

Recommendation 3

Site #45-1-2756 (Duplicate #45-1-2757) based on the MSEC findings is predicted to experience subsidence that will not cause significant physical impact. However, there is a risk of harm as set out in section 9.2. It should therefore be managed as set out in Section 9.3.1 of this report. Given this site has been assessed as being highly significant at a local and regional level extreme care should be observed.

Recommendation 4

All Aboriginal heritage in the Project Application Area should be managed under a CHMP which must be developed in consultation with the Aboriginal Stakeholders.

Recommendation 5

All relevant Centennial staff and contractors should be made aware of their statutory obligations for heritage under NSW NPW Act (1974) and the NSW Heritage Act (1977), which may be implemented as a heritage induction.

Recommendation 6

If, during the course of development works, suspected Historic cultural heritage material is uncovered, work should cease in that area immediately. A suitably qualified heritage consultant should be contacted and the NSW Heritage Branch (Enviroline 131 555) notified, works can recommence once an approved management strategy is developed.

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12.0 Plates

Plate 1 Survey unit 1 access track

Plate 2 Typical vegetation and ground cover in survey unit 1

Plate 3 Typical vegetation and ground cover in survey unit 2

Plate 4 Typical vegetation and ground cover in survey unit 3

Plate 5 View of landforms in survey unit 3

Plate 6 Typical vegetation and ground cover in survey unit 4

Plate 7 Example of disturbance in survey unit 4

Plate 8 Typical vegetation and ground cover in Survey Unit 5

Plate 9 View of landforms in survey unit 5

Plate 10 Access track in survey unit 6

Plate 11 View of landforms in survey unit 6

Plate 12 Typical vegetation and ground cover in survey unit 6

Plate 13 Typical vegetation and ground cover in survey unit 7

Plate 14 View of landforms in survey unit 7

Plate 15 Typical vegetation and ground cover in survey unit 8

Plate 16 Example of disturbance in survey unit 8

Plate 17 AHIMS Site #45-1-0155 in survey unit 8

Plate 18 Typical vegetation and ground cover in survey unit 9

Plate 19 Retaining wall in survey unit 9

Plate 20 Disturbance in survey unit 10

Plate 21 Typical vegetation and ground cover in survey unit 10

Plate 22 View of landforms in survey unit 10

Plate 23 View of landforms in survey unit 11

Plate 24 Typical vegetation and ground cover in survey unit 11

Plate 25 View to the base of relocated AHIMS site #45-1-0151 in survey unit 11

Plate 26 Survey unit 12 access track

Plate 27 Example of disturbance in survey unit 12

Plate 28 Typical vegetation and ground cover in survey unit 12

Plate 29 Typical vegetation and ground cover in survey unit 13

Plate 30 View of stone arrangement site #45-1-2689 in survey unit 13

Plate 31 Rockshelter AHIMS #45-1-2756 (duplicate of #45-1-2757)

Plate 32 Hand Stencil at AHIMS site #45-1-2756 (duplicate of #45-1-2757)

Plate 33 Typical vegetation and ground cover in survey unit 14

Plate 34 Example of disturbance in survey unit 14

Plate 35 Example of disturbance in survey unit 15

Plate 36 Typical vegetation and ground cover in survey unit 15

Plate 37 Typical vegetation and ground cover in survey unit 16

Plate 38 Example of disturbance in survey unit 16

Plate 39 Typical vegetation and ground cover in survey unit 17

Plate 40 Example of disturbance in survey unit 17

Plate 41 View of landforms in survey unit 18

Plate 42 Typical vegetation and ground cover in survey unit 18

Plate 43 Example of disturbance in survey unit 18

Plate 44 Typical vegetation and ground cover in survey unit 20

Plate 45 Typical vegetation and ground cover in survey unit 21

Plate 46 Example of disturbance in survey unit 21

Plate 47 Typical vegetation and ground cover in survey unit 22

Plate 48 Typical vegetation and ground cover in survey unit 22

Plate 49 AHIMS #45-1-0084 in survey unit 22

Plate 50 Artefacts and bone at AHIMS #45-1-0084 in survey unit 22

Plate 51 AHIMS #45-1-0144 in survey unit 22

Plate 52 AHIMS #45-1-0150 in survey unit 22

Plate 53 Artefacts at AHIMS #45-1-0084 in survey unit 22

Plate 54 AHIMS #45-1-0149 in survey unit 22

Plate 55 AHIMS #45-1-0150 in survey unit 22

Plate 56 AHIMS #45-1-0150 in survey unit 22

Plate 57 Typical vegetation and ground cover in survey unit 23

Plate 58 View of landforms in survey unit 23

Plate 59 Typical vegetation and ground cover in survey unit 24

Plate 60 View of tree blocking AHIMS #45-1-0153 in survey unit 24

Plate 61 Typical vegetation and ground cover in survey unit 25

Plate 62 Example of disturbance in survey unit 25

Plate 63 Typical vegetation and ground cover in survey unit 26

Plate 64 Typical vegetation and ground cover in survey unit 27

Plate 65 Example of disturbance in survey unit 27

Plate 66 Non-Aboriginal spray-painted hand stencil in survey unit 27

Plate 67 Vegetation and landform in survey unit 28

Plate 68 Typical vegetation and ground cover in survey unit 29

Appendix 1

Legislative Requirements

Summary of Statutory Controls

The following overview of the legal framework is provided solely for information purposes for the client, it should not be interpreted as legal advice. RPS will not be liable for any actions taken by any person, body or group as a result of this general overview, and recommend that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

COMMONWEALTH

Aboriginal & Torres Strait Islander Heritage Protection Act 1984

The purpose of this Act is to preserve and protect all heritage places of particular significance to Aboriginal and Torres Strait Islander people. This Act applies to all sites and objects across Australia and in Australian waters (s4). It is administered by the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC).

The intention of this Act is to provide national baseline protection for Aboriginal places and objects where Stage legislation is absent or inadequate. It is not to exclude or limit State laws (s7(1)). Should State legislation cover a matter already covered in the Commonwealth legislation, and a person contravenes that matter, that person may be prosecuted under either Act, but not both (s7(3)).

The Act provides for the preservation and protection of all Aboriginal objects and places from injury and/or desecration. A place is construed to be injured or desecrated if it is not treated consistently with the manner of Aboriginal tradition or is or likely to be adversely affected (s3).

In August 2009, the Federal Government released a discussion paper setting out proposed reforms of indigenous heritage protection and called for submissions. In August 2011, the government agreed to consider incorporating this Act into the *Environment Protection & Biodiversity Conservation Act 1999* (the EPBC Act).

The Australian Heritage Commission Act 1975

The Australian Heritage Commission Act (1975) established the Australian Heritage Commission which assesses places to be included in the National Estate and maintains a register of those places. Places maintained in the register are those which are significant in terms of their association with particular community or social groups and they may be included for social, cultural or spiritual reasons. The Act does not include specific protective clauses.

The Australian Heritage Council Act (2003) together with *The Environment Protection and Biodiversity Conservation Act (1999, amended)* includes a National Heritage List of places of National heritage significance, maintains a Commonwealth Heritage List of heritage places owned or managed by the Commonwealth and ongoing management of the Register of the National Estate.

STATE

It is incumbent on any land manager to adhere to state legislative requirements that protect Aboriginal Cultural heritage. The relevant legislation is NSW includes but is not limited to the summary below.

National Parks and Wildlife Act 1974 (NPW ACT)

The NPW Act provides statutory protection for all Aboriginal heritage, places and objects (not being a handicraft made for sale), with penalties levied for breaches of the Act. This legislation is overseen by the

Office of Environment and Heritage (OEH), and specifically the Director-General of OEH. Part 6 of this Act is the relevant part concerned with Aboriginal objects and places, with Section 86 and Section 90 being the most pertinent. In 2010, this Act was substantially amended, particularly with respect to Aboriginal cultural heritage requirements. Relevant sections include:

Section 86

This section now lists four major offences:

(1) A person must not harm an object that the person knows is an Aboriginal object;

(2) A person must not harm and Aboriginal object;

(3) For the purposes of s86, "circumstances of aggravation" include:

  (a) The offence being committed during the course of a commercial activity; or

  (b) That the offence was the second or subsequent offence committed by the person;

(4) A person must not harm or desecrate an Aboriginal place.

Offences under s86 (2) and (4) are now strict liability offences, i.e., knowledge that the object or place harmed was an Aboriginal object or place needs to be proven. Penalties for all offences under Part 6 of this Act have also been substantially increased, depending on the nature and severity of the offence.

Section 87

This section now provides defences to the offences of s86. These offences chiefly consist of having an appropriate Aboriginal Heritage Impact Permit (AHIP), not contravening the conditions of the AHIP or demonstrating that due diligence was exercised prior to the alleged offence.

Section 87A & 87B

These sections provide exemptions from the operation of s86; Section 87A for authorities such as the Rural Fire Service, State Emergency Services and officers of the National Parks & Wildlife Service in the performance of their duties, and s87B for Aboriginal people performing traditional activities.

Section 89A

If a person knows of the location of an Aboriginal object or place that has not been previously registered and does not advise the Director-General of that object or place within a reasonable period of time, then that person is guilty of an offence under this Section of the Act.

Section 90

This section authorises the Director-General to issue and AHIP.

Section 90A-90R

These sections govern the requirements relating to applying for an AHIP. In addition to the amendments to the Act, OEH have issued three new policy documents clarifying OEH's requirements with regards to Aboriginal archaeological investigations: *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW and Code of Practice for Archaeological Investigations in NSW*. The Consultation Requirements formalise the consultation with Aboriginal community groups into four main stages, and includes details regarding the parties required to be consulted, advertisements inviting Aboriginal community groups to participate in the consultation process, requirements regarding the provision of methodologies, draft and final reports to the

Aboriginal stakeholders and timetables for the four stages. The Due Diligence Code of Practice sets out the minimum requirements for investigation, with particular regard as to whether an AHIP is required. The Code of Practice for Archaeological Investigation sets out the minimum requirements for archaeological investigation of Aboriginal sites.

Aboriginal Heritage Impact Permits (AHIP)

OEH encourages consultation with relevant Aboriginal stakeholders for all Aboriginal Heritage Assessments. However, if an Aboriginal Heritage Impact Permit (AHIP) is required for an Aboriginal site, then specific OEH guidelines are triggered for Aboriginal consultation.

Aboriginal Cultural Heritage Consultation Requirements for Proponents

In 2010, the Aboriginal Cultural Heritage Consultation Requirements for Proponents (ACHCR's) were issued by OEH (12th April 2010). These consultation requirements replace the previously issued Interim Community Consultation Requirements (ICCR) for Applicants (Dec 2004). These guidelines apply to all AHIP applications prepared after 12th April 2010; for projects commenced prior to 12th April 2010, transitional arrangements have been stipulated in a supporting document, Questions and Answers 2: Transitional Arrangements.

The ACHCR's 2010 include a four stage Aboriginal consultation process and stipulate specific timeframes for each state. Stage 1 requires that Aboriginal people who hold cultural information are identified, notified and invited to register an expression of interest in the assessment. Stage 1 includes the identification of Aboriginal people who may have an interest in the Project Application Area and hold information relevant to determining the cultural significance of Aboriginal objects or places. This identification process should draw on reasonable sources of information including: the relevant OEH EPRG regional office, the relevant Local Aboriginal Land Council(s), the Registrar of Aboriginal Owners, Aboriginal Land Rights Act (1983), the Native Title Tribunal, Native Title Services Corporation Limited, the relevant local council(s), and the relevant catchment management authority. The identification process should also include an advertisement placed in a local newspaper circulating in the general location of the Project Application Area. Aboriginal organisations and/or individuals identified should be notified of the project and invited to register an expression of inters (EoI) for Aboriginal consultation. Once a list of Aboriginal stakeholders has been compiled from the EoI's, they need to be consulted in accordance with ACHCR's Stages 2, 3 and 4.

Environmental Planning & Assessment Act 1979 (EP&A Act)

This Act regulates a system of environmental planning and assessment for New South Wales. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal heritage. Within the *EP&A Act*, Parts 3, 4 and 5 relate to Aboriginal heritage.

Part 3 regulates the preparation of planning policies and plans. Part 4 governs the manner in which consent authorities determine development applications and outlines those that require an environmental impact statement. Part 5 regulates government agencies that act as determining authorities for activities conducted by that agency or by authority from the agency. The National Parks & Wildlife Service is a Part 5 authority under the *EP&A Act*.

In brief, the NPW Act provides protection for Aboriginal objects or places, while the *EP&A Act* ensures that Aboriginal cultural heritage is properly assessed in land use planning and development.

The Heritage Act 1977

This Act protects the natural and cultural history of NSW with emphasis on non-indigenous cultural heritage through protection provisions and the establishment of a Heritage Council. Although Aboriginal heritage sites and objects are primarily protected by the *National Parks & Wildlife Act* (1974, as amended), if an Aboriginal site, object or place is of great significance, it may be protected by a heritage order issued by the Minister subject to advice by the Heritage Council.

Other legislation of relevance to Aboriginal cultural heritage in NSW includes the *NSW Local Government Act (1993)*. Local planning instruments also contain provisions relating to indigenous heritage and development conditions of consent.

Appendix 2

Aboriginal Consultation – Published Advertisement

PUBLIC NOTICES

Centennial Coal

Registration of Interest
for Aboriginal Cultural Knowledge Holders
Centennial Coal Western Region

Centennial Coal is requesting registrations of interest from Aboriginal Stakeholders for projects in the Capertee, Blackmans Flat, Lidsdale and Newnes Plateau localities.

The purpose of this community consultation with Aboriginal people is to assist the proposed applicant in the potential preparation of applications for Aboriginal Heritage Impact Permits and to assist the Director General of Office of Environment and Heritage in his or her consideration and determination of the applications.

As per Department of Environment Climate Change and Water (now Office of Environment and Heritage) 2010 Aboriginal Cultural Heritage Consultation Requirements for Proponents responses are to be received before **Friday 21 October 2010**. *Written applications* should be forwarded to:

Tony Seibel-Barnes
Centennial Coal Company
Locked Bag 1002
Wallerawang NSW 2845
Mobile: 0448 443864
tony.seibel-barnes@centennialcoal.com.au

Further information will be provided upon registration.

9392-121

Appendix 3

Aboriginal Consultation Log

Aboriginal Consultation Log

Date	Consultation Description	Method of Contact	Outcomes
6/10/2011	Advertisement published in the Lithgow Mercury	Advertisement	N/A
6/10/2011	Received phone call from Sharon Riley indicating that Mingaan Aboriginal Corporation would be interested in all areas specified in the advert (Capertee, Blackmans Flat, Lidsdale and Newnes Plateau localities)	Phone	Added to Stakeholder list
7/10/2011	Letters sent to the following organisations\departments: ▪ Office of Environment and Heritage-Planning and Aboriginal Heritage ▪ Lithgow City Council ▪ Office of the Registrar-Aboriginal Land Rights Act ▪ National Native Title Tribunal ▪ Native Title Services Corporation Limited ▪ Hawkesbury-Nepean Catchment Management Authority ▪ Bathurst Local Aboriginal Land Council (in accordance with the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010).	Letter	
10/10/2011	Received email from Helen Riley indicating that Mingaan Aboriginal Corporation would be interested in all areas specified in the advert (Capertee, Blackmans Flat, Lidsdale and Newnes	Email	(added to stakeholder list as per instruction from the 6th October)
13/10/2011	Received letter (dated 10.10.2011) from the 'Office of the Registrar' re Registered Aboriginal Owners. None identified.	Letter	No stakeholders identified
17/10/2011	Received letter (dated 12.10.2011) from the 'Lithgow City Council' re Registered Aboriginal Owners. Identified: Wiradjuri, BLALC, Gundungurra (GTCAC), Mingaan, Gundungurra (GAHA).	Letter	Interested parties identified
18/10/2011	Received letter(via Email) (dated 18.10.2011) from the 'Native Title Tribunal' re Registered Aboriginal Owners. Identified: Wellington Valley Wiradjuri, Wiray-dyuraa Ngumbaay-dyil, Wiray-dyuraa Maying-gu, Warrabinga-Wiradjuri, Gundungurra (GTCAC)	Letter	Interested parties identified
19/10/2011	Received letter (dated 14.10.2011) from the 'OEH' re Registered Aboriginal Owners. Identified: Bill Allen, Dhuuluu-Yala, Warrabinga-Wiradjuri, Gundungurra (GTCAC), Gundungurra (GAHA), Hawkesbury-Nepean CMA, Lyn Syme, Mingaan, Mooka, Nth-East Wiradjuri, Wiradjuri Elders, Wiradjuri Traditional Owners.	Letter	Interested parties identified
4/11/2011	Received email (dated 04.11.2011) from Tonilee (BLALC) stating Bathurst Local Aboriginal Land Council would like to register an Interest for the Archaeological investigation	Email	Added to stakeholder list

Date	Consultation Description	Method of Contact	Outcomes
4/11/2011	Received email (dated 04.11.2011) from John Lennis (CMA) stating that the Hawkesbury-Nepean Catchment Management Authority has no interest in the Archaeological investigation and they would pass the letter on to their Advisory Committee (who may respond).	Email	N/A
7/11/2011	Received email (dated 07.11.2011) from Anupam Sharma (Native Title Services Corporation Limited - 'NTS Corp'). She stated that they had notified all relevant parties regarding on the 17th of October. I have replied requesting more information\correspondence.	Email	N/A
8/11/2011	Received email (dated 08.11.2011) from Anupam Sharma (Native Title Services Corporation Limited - 'NTS Corp'). She responded to my email (07/11/2011) stating that due to privacy regulations, they do not provide contact details of clients (Aboriginal groups/individuals) to any organisation (but confirmed that they had notified all relevant parties directly and requested they contact us if interested).	Email	N/A
8/11/2011	Letters for an invitation of an expression of interest sent out to: ▪ Dhuuluu-Yala Aboriginal Corporation ▪ Wiradjuri Council of Elders ▪ Wiradjuri Council of Elders (Robert Clegg) ▪ Wiradjuri Traditional Owners Central West Aboriginal Corporation ▪ Wiray-dyuraa Ngumbaay-dyil (Bill Allen) ▪ Gundungurra Tribal Council Aboriginal Corporation (GTCAC) ▪ Gundungurra Aboriginal Heritage Association Inc (GAHA) ▪ Mingaan (Sharon Riley) ▪ Hawkesbury-Nepean Catchment Management Authority (Aboriginal Reference Group) ▪ Bathurst Local Aboriginal Land Council (Tonilee Scott) ▪ Warrabinga Native Title Claimants Aboriginal Corporation (Wendy Lewis) ▪ North-East Wiradjuri (Lyn Syme) ▪ Mooka Traditional Owners (Neville Williams) ▪ Blackshield Lawyers (Simon Blackshield, on behalf of the Warrabinga-Wirdjuri People represented by: Ms Wendy Lewis, Ms Mavia Agnew, Mr Martin de Launey) ▪ Eddy Neumann Lawyers (Eddy Neumann, on behalf of the Gundungurra Tribal Council Aboriginal Corporation represented by: Mr Mervyn Trindall, Ms Elsie Stockwell, Ms Pamela Stockwell) ▪ Teitzel & Partners (Philip Teitzel, on behalf of the Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu represented by: Mr William (Bill) Allen, Mr Joe Bugg, Mr Stephen Riley, Mr John Brasher)	Letter	N/A

Date	Consultation Description	Method of Contact	Outcomes
	▪ Teitzel & Partners (Philip Teitzel, on behalf of the Wellington Valley Wiradjuri represented by: Mrs Joyce Williams, Mrs Violet Carr, Mrs Elizabeth Ferguson) (in accordance with the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010).		
16/11/2011	Phoned Blackshield Lawyers to follow up on letter sent 08/11/11 (only able to leave message - with message service).	Phone	
16/11/2011	Phoned the office of the Gundungurra Tribal Council Aboriginal Corporation (GTCAC) to follow up on letter sent 08/11/11 (phone rang out). Sent follow up email (with letter attached) to the generic Gundungurra account & Sharon. Note: the email to the generic Gundungurra account bounced. Also left a message on Sharon's mobile.	Phone	
16/11/2011	Phoned Wendy Lewis (Warrabinga) to follow up on letter sent 08/11/11. She said she had not received the letter (she has moved and the letter was sent to her old address - address details now updated). The contents of the letter were explained to Wendy over the phone. She stated that she wished to register interest.	Phone	
16/11/2011	Phoned Lyn Syme (North-East Wiradjuri) to follow up on letter sent 08/11/11. She said she was not certain that she had received the letter. The contents of the letter were explained to Lyn over the phone. She stated that she wished to register interest.	Phone	
16/11/2011	Phoned Tonilee (BLALC) to follow up on letter sent 08/11/11. She confirmed that BLALC wished to register interest.	Phone	
16/11/2011	Phoned Sharon Riley (Mingaan) to follow up on letter sent 08/11/11. Left message on her phone.	Phone	
16/11/2011	Phoned Teitzel Lawyers (representing Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu) to follow up on letter sent 08/11/11 (only able to leave a message). Sent follow up email.	Phone	
16/11/2011	Sent follow up email (with letter attached) to Eddy Neumann Lawyers (representing Gundungurra Tribal Council Aboriginal Corporation) to follow up on letter sent 08/11/11.	Phone	
18/11/2011	Email received from Sharon Brown (Gundungurra - GTCAC) registering interest (and requesting a soft copy of the round 2 letter). Copy of letter sent again to Sharon via email.	Phone	
18/11/2011	Phoned Helen Riley (Mingaan) to follow up on letter sent 08/11/11. She confirmed that they wish to register interest.	Phone	
21/11/2011	Phoned Eddy Neumann Lawyers (representing Gundungurra Tribal Council Aboriginal Corporation) to follow up on letter sent 08/11/11. Eddy said that Gundungurra would be interested in registering and he would send an email to state this in writing. Email was received later in the day (registering interest).		

Date	Consultation Description	Method of Contact	Outcomes
21/11/2011	Phoned Teitzel Lawyers (representing Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu & Wellington Valley Wiradjuri People) to follow up on letter sent 08/11/11. He stated that he was unable to respond in writing until Wednesday 23/11/2011, however, he said the following parties would be interested: Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu (Bill Allen, Tim Lucas, John Brasher, Stephen Riley). He also stated there may be interest from Wellington Valley Wiradjuri People (Wayne Carr, Brian Doherty), but said he would confirm this on Wednesday (23/11/2011).	Phone	
21/11/2011	Phoned Blackshield Lawyers to follow up on letter sent 08/11/11 (only able to leave message for them to contact us - with message service). He returned the call but not available to take it. Called Simon back again, left message on his mobile.	Phone	
21/11/2011	Emailed Wiradjuri Council of Elders (Rob Clegg) to follow up on letter sent 08/11/11. Sent copy of letter and requested a response ASAP.	Email	
21/11/2011	Emailed Dhuuluu-Yala Aboriginal Corporation to follow up on letter sent 08/11/11. Sent copy of letter and requested a response ASAP.	Email	
21/11/2011	Phoned Rochelle from Dhuuluu-Yala Aboriginal Corporation to follow up on letter sent 08/11/11. She mentioned she did not specifically recall the letter and stated they may not have a sites officer available. However, she would check the email sent through and respond this evening.	Phone	
21/11/2011	Searched internet for Wiray-dyuraa Ngumbaay-dyil (and Bill\William Allen) alternate contact methods\details. No other contact details found.	Web	
21/11/2011	Emailed Mooka Traditional Owners (Neville Williams) to follow up on letter sent 08/11/11. Sent copy of letter and requested a response ASAP.	Email	
21/11/2011	Phoned Neville Williams from Mooka Traditional owners to follow up on letter sent 08/11/11. He mentioned he did not recall receiving the letter. However, he would check the email sent through and respond. Email was received later in the evening registering interest (for Sharon Williams).	Phone	
21/11/2011	Emailed Wiradjuri Traditional Owners Central West Aboriginal Corporation (Rob Clegg) to follow up on letter sent 08/11/11. Sent copy of letter and requested a response ASAP.	Email	
21/11/2011	Phoned Brian Grant from Wiradjuri Traditional Owners Central West Aboriginal Corporation to follow up on letter sent 08/11/11. He was not at home and his mobile phone was engaged.	Phone	
21/11/2011	Attempted to follow up with Gundungurra Aboriginal Heritage Association Inc (GAHA) regarding letter sent 08/11/11. Informed that this group may no longer exist(?).	Phone	

Date	Consultation Description	Method of Contact	Outcomes
22/11/2011	Phoned Rochelle from Dhuuluu-Yala Aboriginal Corporation to follow up on letter sent 08/11/11. She said she had sent an email last night stating that they did not have a sites officer available thus did not wish to register interest.	Phone	
22/11/2011	Phoned Blackshield Lawyers (Simon) on mobile to follow up on letter sent 08/11/11. Simon stated that Warrabinga-Wiradjuri people would like to register interest.	Phone	
22/11/2011	Phoned Brian Grant from Wiradjuri Traditional Owners Central West Aboriginal Corporation to follow up on letter sent 08/11/11. He was not at home (left message) and his mobile phone was still engaged.	Phone	
23/11/2011	Methodology letters sent out	Letter	
7/12/2011	Aboriginal Community Consultation Meeting with Helen Riley (HR) – Representing Wiradjuri Council of Elders, Elwin Wolfenden (EW) – Mingaan Aboriginal Corporation, Robyn Williams (RW) – Representing North-East Wiradjuri, Wendy Lewis (WL) - Warrabinga NTCAC, Jason Brown (JB) – Gundungurra TCAC	Meeting	Presented information on project
07/12/2011	Mingaan Aboriginal Corporation responded to the methodology	Response	
07/12/2011	Warrabinga Native Title Claimants Aboriginal Corporation responded to the methodology	Response	
20/12/2011	Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu responded to the methodology	Response	
21/12/2011	Gundungurra Tribal Council Aboriginal Corporation responded to the methodology	Response	
21/12/2011	North East Wiradjuri responded to the methodology	Response	
21/12/2011	Bathurst Local Aboriginal Land Council responded to the methodology	Response	
14/12/2011	Received phone call from John Lennis (Hawkesbury-Nepean Catchment Management Authority) to confirm that they did not wish to register interest in any of the projects.	Response	
04/01/2012	Lyn Syme of North East Wiradjuri Company Ltd. emailed to ask about induction arrangements for the project	Email	
11/01/2012	Emailed Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation to request their insurance information	Email	
11/01/2012	Emailed Sharon Brown of Gundungurra Tribal Council Aboriginal Corporation to request their insurance information	Email	
11/01/2012	Sharon Brown of Gundungurra Tribal Council Aboriginal Corporation emailed through a copy of their insurance information	Email	
12/01/2012	Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation emailed through a copy of their insurance information	Email	
28/03/2012	Emailed Lyn Syme of North East Wiradjuri Company Ltd. advising of details of fieldwork	Email	

Date	Consultation Description	Method of Contact	Outcomes
28/03/2012	Emailed Sharon Brown of Gundungurra Tribal Council Aboriginal Corporation advising of details of fieldwork	Email	
28/03/2012	Emailed Helen Riley of Mingaan Aboriginal Corporation advising of details of fieldwork	Email	
28/03/2012	Emailed Tonilee Scott of Bathurst Local Aboriginal Land Council advising of details of fieldwork	Email	
28/03/2012	Helen Riley of Mingaan Aboriginal Corporation emailed to advise that a site officer would be available for the site visit	Email	
29/03/2012	Sharon Brown of Gundungurra Tribal Council Aboriginal Corporation emailed to advise that Jason Brown would attend the site visit	Email	
29/03/2012	Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation emailed to advise of an updated email contact for the organisation, and to request details of the project including maps, AHIMS searches and invoicing	Email	
30/03/2012	Emailed Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation to confirm the new email contact and provide the project details he requested	Email	
30/03/2012	Emailed Helen Riley of Mingaan Aboriginal Corporation asking for the name of the nominated site officer	Email	
30/03/2012	Phoned Bathurst Local Aboriginal Land Council and confirmed that a site officer would attend the site visit	Phone	
30/03/2012	Phoned Warrabinga Native Title Claimants Aboriginal Corporation and confirmed that a site officer would attend the site visit	Phone	
30/03/2012	Phoned North East Wiradjuri Company Ltd. and confirmed that a site officer would attend the site visit	Phone	
02/04/2012	Helen Riley of Mingaan Aboriginal Corporation emailed to advise that Elwin Wolfenden was the nominated site officer	Email	
02/04/2012	Helen Riley of Mingaan Aboriginal Corporation emailed to advise that Tim Lucas was the nominated site officer, taking over from Elwin Wolfenden	Email	
03/04/2012 – 05/04/2012	Angus Place site visits conducted with Nathan Brown of Gundungurra Tribal Council Aboriginal Corporation, Jack Pennell of Warrabinga Native Title Claimants Aboriginal Corporation, Craig McConnell of North East Wiradjuri Company Ltd., and Tim Lucas of Mingaan Aboriginal Corporation	Site Visit	
11/04/2012 – 13/04/2012	Angus Place site visits conducted with Jack Pennell of Warrabinga Native Title Claimants Aboriginal Corporation, Brendon Worrell of Mingaan Aboriginal Corporation, and Tim Lucas of Bathurst Local Aboriginal Land Council	Site Visit	
13/04/2012	Lyn Syme of North East Wiradjuri Company Ltd. emailed requesting invoices details for the fieldwork	Email	

Date	Consultation Description	Method of Contact	Outcomes
13/04/2012	Emailed Lyn Syme of North East Wiradjuri Company Ltd. advising that invoicing details would be sent as soon as possible	Email	
16/04/2012	Emailed invoicing details to Lyn Syme of North East Wiradjuri Company Ltd.	Email	
18/04/2012	Emailed invoicing details to Helen Riley of Mingaan Aboriginal Corporation	Email	
18/04/2012	Emailed invoicing details to Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation	Email	
13/06/2012	Discussion between Karyn Virgin and representatives of Bathurst LALC, GTCAC, Mingaan, Warrabinga and NE Wiradjuri re Angus Place & Springvale project areas	Site visit (Airly)	
30/10/2012	Discussion between Deborah Farina and Dawn Harris of GTCAC re Angus Place, Springvale and Clarence cultural sites	Site visit (Springvale)	
04/02/2013	Discussion between Karyn Virgin between representatives of Bathurst LALC, GTCAC, Mingaan, Warrabinga, NE Wiradjuri,Wiray-dyurra Ngambaay-dyil and Wiray-dyuraa Maying-gu re sites in Newnes Plateau	Site visit (Clarence)	
18/07/2013	Discussion between Iain Hornshaw of Centennial Coal and representatives of GTCAC regarding Angus Place, Springvale and Clarence projects		
23/07/2013	Copy of draft report sent to Aboriginal stakeholders (Bathurst LALC, GTCAC, GTCAC Native Title Claimants, Mingaan Aboriginal Corporation, Mooka Traditional Owners, NE Wiradjuri Co., Warrabinga Native Title Claimants, Warrabinga/Wiradjuri Native Title Claimants, Wiradjuri Council of Elders, Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu)	Mail	Awaiting response
25/07/2013	The draft report that KV sent to Warrabinga/Wiradjuri People Native Title Claimants was sent back to the RPS office with a note explaining that the organisation was not affiliated with that address	Mail	N/A
08/08/2013	KV called Tonilee Scott of Bathurst LALC to ask if she would like to make any comments on the draft report	Phone	Tonilee advised that Bathurst LALC was happy with the report and did not have any comments to make
08/08/2013	KV called Elwin Wolfenden (on behalf of Mingaan Aboriginal Corporation, Wiradjuri Council of Elders, and Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu) to ask if he would like to make any comments on the draft report	Phone	Elwin advised that the organisations were happy with the report and did not have any comments to make

Date	Consultation Description	Method of Contact	Outcomes
08/08/2013	KV called North East Wiradjuri Co. to ask if they would like to make any comments on the draft report	Phone	Advised by Kevin Williams that the report had been passed on to Donna Whillock, and that there were no comments at this time. Kevin did advise that he would follow up with Donna, however
08/08/2013	KV called GTCA and Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants to ask if they would like to make any comments on the draft report	Phone	No response on either of the two listed phone numbers
20/08/2013	Due date for ACS comments on draft report	Mail/Phone/Email	No written responses received
05/09/2013	KV emailed Warrabinga Native Title Claimants Aboriginal Corporation and Warrabinga/Wiradjuri People Native Title Claimants to ask if they would like to make any comments on the draft report	Email	No response from either of the two email addresses
05/09/2013	KV called GTCA and Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants to ask if they would like to make any comments on the draft report	Phone	No response on either of the two listed phone numbers
05/09/2013	KV posted a letter to Mooka Traditional Owners to ask if they would like to make any comments on the draft report	Mail	Awaiting response
01/10/2013	Amended report sent to GTCAC	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to GTCAC Native Title claimants	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Mingaan Aboriginal Corp	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Bathurst LALC	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to North East Wiradjuri	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Wiray-dyuraa Ngumbaay-dyil and Wiray-dyuraa Maying-gu	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Wiradjuri Council of Elders	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Warrambinga Native Title Aboriginal Corporation	Email	Requesting comment by 29/10/2013
1/10/2013	Amended report sent to Warrabinga/Wiradjuri People NT claimants	Email	Requesting comment by 29/10/2013

Date	Consultation Description	Method of Contact	Outcomes
29/10/2013	Telephone call to GTCAC/GTCAC NT requesting comment	Phone	Probably no comment, but will reply later today
29/10/2013	Telephone call to Mingaan Aboriginal Corp	Phone	No comment
29/10/2013	Telephone call to Bathurst LALC	Phone	Left message
29/10/2013	Telephone call to North East Wiradjuri	Phone	Didn't receive report; requested further copy
29/10/2013	Telephone call to Wiray-dyuraa Ngaumbaay-dyil and Wiray-dyuraa Maying-gu	Phone	Would like to make a comment, would submit by 30/10/2013
29/10/2013	Attempted telephone call to Warrabinga NT Aboriginal Corp and Warrabinga/Wiradjuri People NT claimants	Phone	Disconnection message
29/10/2013	Email to Warrabinga NT Aboriginal Corp and Warrabinga/Wiradjuri People NT claimants	Email	Requesting comment to be made by 30/10/2013

Appendix 4

Glossary of Site Types

Aboriginal Site Types

The following is a brief description of most Aboriginal site types.

Artefact Scatters

Artefact scatters are defined by the presence of two or more stone artefacts in close association (i.e. within fifty metres of each other). An artefact scatter may consist solely of surface material exposed by erosion, or may contain sub-surface deposit of varying depth. Associated features may include hearths or stone-lined fireplaces and heat treatment pits.

Artefact scatters may represent:

- Camp sites: involving short or long-term habitation, manufacture and maintenance of stone or wooden tools, raw material management, tool storage and food preparation and consumption;
- Hunting or gathering activities;
- Activities spatially separated from camp sites (e.g. tool manufacture or maintenance); or
- Transient movement through the landscape.

The detection of artefact scatters depends upon conditions of surface visibility, including vegetation cover, ground disturbance and recent sediment deposition. Factors such as poor light, vegetation, leaf litter may obscure artefact scatters and prevent their detection during surface surveys.

Bora Grounds

Bora grounds are a ceremonial site associated with initiations. They are usually comprise two circular depressions in the earth and may be edged with stone. Bora grounds generally occur on soft sediments in river valleys, although they may also be located on high, rocky ground in association with stone arrangements.

Burials

Human remains were often placed in hollow trees, caves or sand deposits and may have been marked by carved or scarred trees. Burials have been identified eroding out of sand deposits or creek banks, or when disturbed by development. The probability of detecting burials during archaeological fieldwork is extremely low.

Culturally Modified Trees

Culturally modified trees include scarred and carved trees. Scarred trees are caused by the removal of bark for use in manufacturing canoes, containers, shields or shelters. Notches were also carved in trees to permit easier climbing. Scarred trees are only likely to be present on mature trees remaining from original vegetation. Carved trees, the easiest to identify, are caused by the removal of bark to create a working surface on which engravings are incised. Carved trees were used as markers for ceremonial and symbolic purposes, including burials. Although, carved trees were relatively common in NSW in the early 20th century, vegetation removal has rendered this site type extremely rare. Modified trees, where bark was removed for often domestic use are less easily identified. Criteria for identifying modified trees include: the age of the tree; type of tree (the bark of many trees is not suitable, also introduced species would be unlikely subjects); axe marks (with the need to determine the type of axe - stone or steel – though Aboriginal people after settlement did use steel); shape of the scar (natural or culturally scarred); height of the scar above the ground (reasonable working height with consideration given to subsequent growth).

Fish Traps

Fish traps comprised arrangements of stone, branches and/or wickerwork placed in watercourses, estuaries and along coasts to trap or permit the easier capture of aquatic fauna.

Grinding Grooves

Grinding grooves are elongated narrow depressions in rocks (generally sedimentary), usually associated with watercourses, that are created by the shaping and sharpening of ground-edge implements. To produce a sharp edge, the axe blank (or re-worked axe) was honed on a natural stone surface near a source of water. The water was required for lubricating the grinding process. Axe grinding grooves can be identified by features such as a narrow short groove, with greatest depth near the groove centre. The grooves also display a patina developed through friction between stone surfaces. Generally a series of grooves are found as a result of the repetitive process.

Isolated Finds

An isolated find describes a site where only one artefact is visible. These finds are not found in apparent association with other evidence for prehistoric activity or occupation. Isolated finds occur anywhere and may represent loss, deliberate discard or abandonment of an artefact, or may be the remains of a dispersed artefact scatter. Numerous isolated finds have been recorded within the Project Application Area. An isolated find may flag the occurrence of other less visible artefacts in the vicinity or may indicate disturbance or relocation after the original discard.

Middens

Shell middens comprise deposits of shell remaining from consumption and are common in coastal regions and along watercourses. Middens vary in size, preservation and content, although they often contain artefacts made from stone, bone or shell, charcoal and the remains of terrestrial or aquatic fauna that formed an additional component of Aboriginal diet. Middens can provide significant information on land-use patterns, diet, chronology of occupation and environmental conditions.

Mounds

Aboriginal mounds are places where people lived and reflect a record of that living space. Mounds may be places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and occasionally Aboriginal burials.

Mythological / Traditional Sites

Mythological and traditional sites of significance to Aboriginal people may occur in any location, although they are often associated with natural landscape features. They include sites associated with dreaming stories, massacre sites, traditional camp sites and contact sites. Consultation with the local Aboriginal community is essential for identifying these sites.

Ochre quarries

Ochre, iron oxide may in colours through brown, yellow to red. Ochre may have been used dry for colouring hair or skin or ground to a fine powder and mixed with mediums such as water, blood, fat, etc as a fixative. Ochre was used for decorating the body, artefacts and rockshelters. Quality deposits provided a valuable resource with evidence of wide spread trade of the substance.

Rockshelters may contain Art and / or Occupation Deposit

Rockshelters occur where geological formations suitable for habitation or use are present, such as rock overhangs, shelters or caves. Rockshelter sites generally contain artefacts, food remains and/or rock art and may include sites with areas of potential archaeological deposit, where evidence of rock art or human occupation is expected but not visible. The geological composition of a Project Application Area will indicate the likelihood for rockshelters to occur.

Stone Arrangements

Stone arrangements include lines, circles, mounds, or other patterns of stone arranged by Aboriginal people. These may be associated with bora grounds, ceremonial sites, mythological or sacred sites. Stone arrangements are more likely to occur on hill tops and ridge crests that contain stone outcrops or surface stone. Preservation of those sites is dependent on minimal impact from recent land use practices.

Stone Quarries

A stone quarry is a place at which stone resource exploitation has occurred. Quarry sites are only located where the exposed stone material is suitable for use either for ceremonial purposes (e.g. ochre) or for artefact manufacture.

Appendix 5

AHIMS search

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111285 Angus Pl

Client Service ID : 97266

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2555	WG-RS-3	AGD	56	231520	6309370	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -	Shelter with Art,Shelter with Deposit	
	Contact	**Recorders**	Phil Hunt					**Permits**		
45-1-0141	15 Lambs Creek	AGD	56	233350	6307850	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George					**Permits**		
45-1-0142	16 Lambs Creek	AGD	56	232600	6308550	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George					**Permits**		
45-1-0143	17 Newnes State Forest	AGD	56	232500	6307550	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0144	18 Newnes State Forest	AGD	56	236350	6306800	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George					**Permits**		
45-1-0145	19; Newnes State Forest	AGD	56	236400	6306750	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George					**Permits**		
45-1-0146	20; Newnes State Forest	AGD	56	236050	6307300	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0147	21 Newnes State Forest	AGD	56	231420	6302950	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre,R Sim					**Permits**		
45-1-0148	22; Newnes State Forest	AGD	56	231250	6302820	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre,R Sim					**Permits**		
45-1-0149	23 NewnesState Forest	AGD	56	236300	6306800	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0151	27 Newnes State Forest	AGD	56	232050	6305550	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0152	28;Kangaroo Creek;	AGD	56	232900	6306050	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0153	29;Newnes State Forest;	AGD	56	238300	6310480	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		

Report generated by AHIMS Web Service on 09/04/2013 for Ali Byrne for the following area at Datum :GDA, Zone : 56, Eastings : 227181 - 242714, Northings : 6301570 - 6313050 with a Buffer of 0 meters. Additional Info : CHIA. Number of Aboriginal sites and Aboriginal objects found is 73

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0154	30;Carne Creek;	AGD	56	240700	6306150	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Peter Higgins,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0156	32 Newnes State Forest	AGD	56	237750	6311000	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Susan (Now McIntrye-Tamwoy) McIntyre,D Donovan					**Permits**		
45-1-0157	33__PAD 7;Newnes State Forest;	AGD	56	235200	6308700	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0158	34__PAD 9;Newnes State Forest\Lambs Creek;	AGD	56	232300	6307950	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Susan (Now McIntrye-Tamwoy) McIntyre,D Donovan					**Permits**		
45-1-0159	35__PAD 14;Newnes State Forest;	AGD	56	231990	6301850	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Susan (Now McIntrye-Tamwoy) McIntyre,Ms.Kerry Powell					**Permits**		
45-1-0160	36_(PAD 8);	AGD	56	231950	6307700	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016,2220
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0206	S9;Lidsdale;	AGD	56	227750	6301500	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	Elizabeth Rich,Alice Gorman					**Permits**		
45-1-0123	Gardnes Gap 1;	AGD	56	229220	6311600	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Mr.Luke Godwin					**Permits**	436,585	
45-1-0124	Baalbone Lease 2;	AGD	56	229500	6312800	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Mr.Luke Godwin					**Permits**		
45-1-0125	Baalbone Pagoda 1;	AGD	56	230400	6311400	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Mr.Luke Godwin					**Permits**		
45-1-0126	Unknown site (Blue Mountains, Ben Bullen State Forest)	AGD	56	228500	6311400	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Unknown Author					**Permits**		
45-1-0131	5 Newnes State Forest	AGD	56	240550	6306150	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0132	6 Newnes State Forest	AGD	56	240550	6305850	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Mr.I George					**Permits**		
45-1-0135	9 Newnes State Forest	AGD	56	232300	6307950	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Peter Higgins,D Ingram					Permits		
45-1-0136	10 Newnes State Forest	AGD	56	232500	6307700	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					Permits		
45-1-0137	11 Newnes State Forest	AGD	56	236600	6306900	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					Permits		
45-1-0138	12 Newnes State Forest	AGD	56	235800	6306900	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	339,2016
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre,Ms.Kerry Powell					Permits		
45-1-0139	13 Newnes State Forest	AGD	56	236050	6306800	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	339,2016
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					Permits		
45-1-0140	14 Lambs Creek	AGD	56	233300	6307850	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	Recorders	Denise Donlon,Mr.I George,Susan (Now McIntrye-Tamwoy) McIntyre					Permits		
45-1-0253	BH-IF-1;	AGD	56	231500	6309150	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Phil Hunt					Permits		
45-1-0254	WG-RS-2;	AGD	56	231650	6309380	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders	Phil Hunt					Permits		
45-1-0255	WG-RS-1A	AGD	56	231890	6309350	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders	Phil Hunt					Permits		
45-1-0078	Rock Art;Angus Place Colliery;26;Kangaroo Creek;	AGD	56	232100	6306050	Closed site	Valid	Artefact : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Deposit	339,2016,2220
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre,Paul Gorecki					Permits		
45-1-0079	European Stone Arrangement	AGD	56	231600	6306100	Open site	Not a Site	Stone Arrangement : -	Not an Aboriginal Site	
	Contact	Recorders	Paul Gorecki					Permits		
45-1-0084	Location 15, Site 3;Newnes State Forest;	AGD	56	236900	6307300	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016,2220
	Contact	Recorders	Paul Gorecki					Permits		
45-1-0093	Long Swamp 1;Wallerawang;	AGD	56	228770	6305540	Open site	Valid	Artefact : -	Open Camp Site	950
	Contact	Recorders	Susan (Now McIntrye-Tamwoy) McIntyre,Elizabeth Rich,Shelly Greer					Permits		
45-1-0094	Long Swamp 2;Wallerawang;	AGD	56	228290	6305550	Open site	Valid	Artefact : -	Open Camp Site	950
	Contact	Recorders	Susan (Now McIntrye-Tamwoy) McIntyre,Elizabeth Rich,Shelly Greer					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0100	Angus Place 1;Ben Bullen State Forest;	AGD	56	227640	6305600	Closed site	Valid	Artefact : -	Shelter with Deposit	950
Contact		Recorders	Susan (Now McIntrye-Tamwoy) McIntyre					Permits		
45-1-0007	Blackfellows Hand Rock;Wolgan Gap;	AGD	56	231700	6308990	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -	Shelter with Art,Shelter with Deposit	809
Contact		Recorders	Ann Jelinek					Permits		
45-1-0008	Lindsdale;Kerosene Vale;	AGD	56	231640	6301900	Closed site	Valid	Artefact : -	Shelter with Deposit	
Contact		Recorders	Richard Wright					Permits		
45-1-0177	CC 3 Newnes SF	AGD	56	241900	6303750	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Klim Gollan					Permits		
45-1-0178	CC 4 NEWNES SF	AGD	56	241850	6304100	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Klim Gollan					Permits		
45-1-0179	CC 5;NEWNES SF;	AGD	56	242100	6301750	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Klim Gollan					Permits		
45-1-0197	CC 1;NEWNES SF;	AGD	56	242080	6302950	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Klim Gollan					Permits		
45-1-0198	CC 2;NEWNES SF;	AGD	56	242100	6303200	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Klim Gollan					Permits		
45-1-0024	Angus Place;Angus Place Cave;	AGD	56	231250	6306650	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
Contact		Recorders	Unknown Author					Permits		
45-1-0040	Angus Place;	AGD	56	231650	6305280	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
Contact		Recorders	Ann Jelinek					Permits		
45-1-0041	Angus Place;	AGD	56	231500	6305380	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
Contact		Recorders	ASRSYS					Permits		
45-1-0044	Beecroft;	AGD	56	230620	6303780	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
Contact		Recorders	Helen Brayshaw					Permits		
45-1-0046	Wolgan Gap;Blue Mountains;	AGD	56	231800	6309360	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
Contact		Recorders	Ann Jelinek					Permits		
45-1-0051	Nine Mile Pine Plantation;Carne Creek;	AGD	56	240250	6302850	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	L Bostock					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0052	Cairne Creek;Bird Rock;Nine Mile Pine Plantation;	AGD	56	241000	6303000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Wieslaw Lichacz					**Permits**		
45-1-2600	SV3-ST1	AGD	56	237975	6303313	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact Bathurst LALC	**Recorders**	Doctor.Jodie Benton,Mr.Phillip Cameron					**Permits**		
45-1-2666	BBC - IF 1	AGD	56	229862	6312228	Open site	Valid	Artefact : 1		100578
	Contact Searle	**Recorders**	Doctor.Jodie Benton					**Permits**		
45-1-2667	BBC - RS 1	AGD	56	230426	6311660	Closed site	Valid	Habitation Structure : 1		100578
	Contact S Scanlon	**Recorders**	Doctor.Jodie Benton					**Permits**		
45-1-2665	BBC-RS1	GDA	56	230426	6311660	Closed site	Valid	Potential Archaeological Deposit (PAD) : -		100391
	Contact Searle	**Recorders**	OzArk Cultural Heritage Management					**Permits**		
45-1-2664	BBC-IF1	GDA	56	229862	6312228	Open site	Valid	Artefact : 1		100391
	Contact Searle	**Recorders**	OzArk Cultural Heritage Management					**Permits**		
45-1-2556	BH-RS-2	AGD	56	231390	6308910	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Phil Hunt					**Permits**		
45-1-0133	7 Newnes State Forest	AGD	56	235600	6308100	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0155	31 Newnes State Forest	AGD	56	230000	6308700	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-0150	24 Newnes State Forest	AGD	56	236200	6306800	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	Contact	**Recorders**	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					**Permits**		
45-1-2692	RPS ANGUS PLACE RS PAD1	GDA	56	232966	6305664	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Ms.Gillian Goode,RPS Australia East Pty Ltd-Blacktown					**Permits**		
45-1-2689	AngusPlaceStoneArrangement#1	GDA	56	239700	6305359	Open site	Valid	Stone Arrangement : 2		
	Contact	**Recorders**	Mr.Toivo Kim Tuovinen					**Permits**		
45-1-2756	RS1	GDA	56	238703	6304891	Open site	Valid	Habitation Structure : 1		
	Contact	**Recorders**	RPS					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111285 Angus Pl

Client Service ID : 97266

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2757	RPS SV RS1	GDA	56	238703	6304891	Open site	Valid	Art (Pigment or Engraved) : 1, Grinding Groove : 1, Habitation Structure : 1		
	Contact	**Recorders**	RPS					**Permits**		
45-1-2758	RPS SV ST1	GDA	56	235004	6302002	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	RPS					**Permits**		
45-1-2759	RPS SV ST2	GDA	56	234965	6301890	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	RPS					**Permits**		
45-1-2715	SU1a - A4	GDA	56	228046	6301960	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Ms.Cheng-Yen Loo,RPS					**Permits**		
45-1-2739	RPS SPVALE 1	GDA	56	239576	6303753	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	RPS					**Permits**		
45-1-2740	RPS SPVALE 1A	GDA	56	239576	6303753	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	RPS					**Permits**		

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Appendix 6

Glossary of Site Types

Glossary of Site Types

Aboriginal site types

The following is a brief description of most Aboriginal site types.

Artefact Scatters

Artefact scatters are defined by the presence of two or more stone artefacts in close association (i.e. within fifty metres of each other). An artefact scatter may consist solely of surface material exposed by erosion, or may contain sub-surface deposit of varying depth. Associated features may include hearths or stone-lined fireplaces and heat treatment pits.

Artefact scatters may represent:

- Camp sites: involving short or long-term habitation, manufacture and maintenance of stone or wooden tools, raw material management, tool storage and food preparation and consumption;
- Hunting or gathering activities;
- Activities spatially separated from camp sites (e.g. tool manufacture or maintenance); or
- Transient movement through the landscape.

The detection of artefact scatters depends upon conditions of surface visibility, including vegetation cover, ground disturbance and recent sediment deposition. Factors such as poor light, vegetation, leaf litter may obscure artefact scatters and prevent their detection during surface surveys.

Bora Grounds

Bora grounds are a ceremonial site associated with initiations. They are usually comprise two circular depressions in the earth and may be edged with stone. Bora grounds generally occur on soft sediments in river valleys, although they may also be located on high, rocky ground in association with stone arrangements.

Burials

Human remains were often placed in hollow trees, caves or sand deposits and may have been marked by carved or scarred trees. Burials have been identified eroding out of sand deposits or creek banks, or when disturbed by development. The probability of detecting burials during archaeological fieldwork is extremely low.

Culturally Modified Trees

Culturally modified trees include scarred and carved trees. Scarred trees are caused by the removal of bark for use in manufacturing canoes, containers, shields or shelters. Notches were also carved in trees to permit easier climbing. Scarred trees are only likely to be present on mature trees remaining from original vegetation. Carved trees, the easiest to identify, are caused by the removal of bark to create a working surface on which engravings are incised. Carved trees were used as markers for ceremonial and symbolic purposes, including burials. Although, carved trees were relatively common in NSW in the early 20th century, vegetation removal has rendered this site type extremely rare. Modified trees, where bark was removed for often domestic use are less easily identified. Criteria for identifying modified trees include: the age of the tree; type of tree (the bark of many trees is not suitable, also introduced species would be unlikely subjects); axe marks (with the need to determine the type of axe - stone or steel – though Aborigines after settlement did use steel); shape of the scar (natural or culturally scarred); height of the scar above the ground (reasonable working height with consideration given to subsequent growth).

Fish Traps

Fish traps comprised arrangements of stone, branches and/or wickerwork placed in watercourses, estuaries and along coasts to trap or permit the easier capture of aquatic fauna.

Grinding Grooves

Grinding grooves are elongated narrow depressions in soft rocks (particularly sedimentary), generally associated with watercourses, that are created by the shaping and sharpening of ground-edge implements. To produce a sharp edge the axe blank (or re-worked axe) was honed on a natural stone surface near a source of water. The water was required for lubricating the grinding process. Axe grinding grooves can be identified by features such as a narrow short groove, with greatest depth near the groove centre. The grooves also display a patina developed through friction between stone surfaces. Generally a series of grooves are found as a result of the repetitive process.

Isolated Finds

An isolated find describes a site where only one artefact is visible. These finds are not found in apparent association with other evidence for prehistoric activity or occupation. Isolated finds occur anywhere and may represent loss, deliberate discard or abandonment of an artefact, or may be the remains of a dispersed artefact scatter. Numerous isolated finds have been recorded within the study area. An isolated find may flag the occurrence of other less visible artefacts in the vicinity or may indicate disturbance or relocation after the original discard.

Middens

Shell middens comprise deposits of shell remaining from consumption and are common in coastal regions and along watercourses. Middens vary in size, preservation and content, although they often contain artefacts made from stone, bone or shell, charcoal and the remains of terrestrial or aquatic fauna that formed an additional component of Aboriginal diet. Middens can provide significant information on land-use patterns, diet, chronology of occupation and environmental conditions.

Mounds

Aboriginal mounds are places where people lived and reflect a record of that living space. Mounds may be places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and occasionally Aboriginal burials.

Mythological / Traditional Sites

Mythological and traditional sites of significance to Aboriginal people may occur in any location, although they are often associated with natural landscape features. They include sites associated with dreaming stories, massacre sites, traditional camp sites and contact sites. Consultation with the local Aboriginal community is essential for identifying these sites.

Ochre quarries

Ochre, iron oxide may in colours through brown, yellow to red. Ochre may have been used dry for colouring hair or skin or ground to a fine powder and mixed with mediums such as water, blood, fat, etc as a fixative. Ochre was used for decorating the body, artefacts and rock shelters. Quality deposits provided a valuable resource with evidence of wide spread trade of the substance.

Rock Shelters may contain Art and / or Occupation Deposit

Rock shelters occur where geological formations suitable for habitation or use are present, such as rock overhangs, shelters or caves. Rock shelter sites generally contain artefacts, food remains and/or rock art and may include sites with areas of potential archaeological deposit, where evidence of rock-art or human occupation is expected but not visible. The geological composition of a study area will indicate the likelihood for rock shelters to occur.

Stone Arrangements

Stone arrangements include lines, circles, mounds, or other patterns of stone arranged by Aboriginal people. These may be associated with bora grounds, ceremonial sites, mythological or sacred sites. Stone arrangements are more likely to occur on hill tops and ridge crests that contain stone outcrops or surface stone. Preservation of those sites is dependent on minimal impact from recent land use practices.

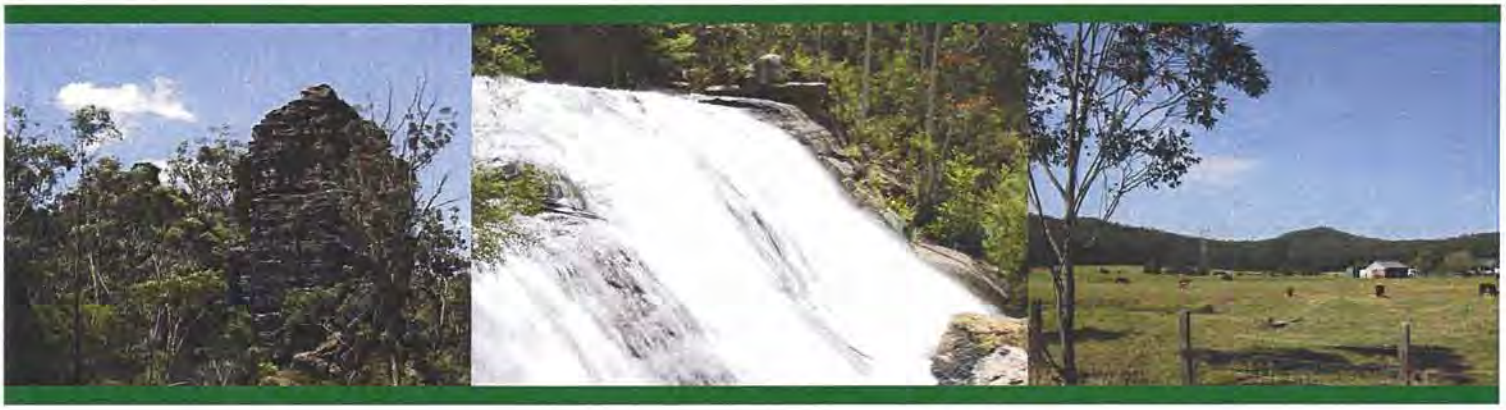
Stone Quarries

A stone quarry is a place at which stone resource exploitation has occurred. Quarry sites are only located where the exposed stone material is suitable for use either for ceremonial purposes (e.g. ochre) or for artefact manufacture.

Appendix 7

Evidence of Aboriginal Consultation

Centennial Coal



Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	✓
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	✓
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Airly Coal – Mine Extension Project	Capertee	✓
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	✓
Coal Services – Upgrade Project	Blackmans Flat	✓
Neubeck – Coal Project	Blackmans Flat	✓
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	✓

Registered Organisation: Gundungurra Tribal Council Aboriginal Corporation.

Name of Representative: Jason Brown Operations Manager.

Signed: _____ Date: 7-12-11.

Centennial Coal

Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	√
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	√
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	√
Airly Coal – Mine Extension Project	Capertee	√
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	√
Coal Services – Upgrade Project	Blackmans Flat	√
Neubeck – Coal Project	Blackmans Flat	√
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	√

Registered Organisation: Mingaan - AC.

Name of Representative: Elwin Wolfenden. Helen Riley

Signed: E. Wolfenden / H. Riley Date: 7/11/2011

Centennial Coal

Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	✓
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	✓
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Airly Coal – Mine Extension Project	Capertee	✓
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	✓
Coal Services – Upgrade Project	Blackmans Flat	✓
Neubeck – Coal Project	Blackmans Flat	✓
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	✓

Registered Organisation: North East Weeding Co Ltd.

Name of Representative: Robyn Williams for Lyn Syme

Signed: Robyn F Williams Date: 7/12/4

Centennial Coal

Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	✓
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	✓
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Airly Coal – Mine Extension Project	Capertee	✓
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	✓
Coal Services – Upgrade Project	Blackmans Flat	✓
Neubeck – Coal Project	Blackmans Flat	✓
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	✓

Registered Organisation: WARRABINGA NATIVE TITLE Claimants Aboriginal Corporation

Name of Representative: Wendy Ann Lewis

Signed: Wendy Ann Lewis Date: 7/12/2017

Centennial Coal

Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	✓
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	✓
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Airly Coal – Mine Extension Project	Capertee	✓
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	✓
Coal Services – Upgrade Project	Blackmans Flat	✓
Neubeck – Coal Project	Blackmans Flat	✓
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	✓

Registered Organisation: W. C. ELDERS

Name of Representative: Helen Riley (Rob. Clegg)

Signed: H. Riley Date: 7/11/2011

Centennial Coal

Project Area Interest \ Registration

Please tick the box(es) below to select the project areas that you wish to specifically register interest in.

Note: You will only be contacted to be involved in the projects that you select from the list below.

Project	Location	✓
Springvale Colliery – Bores 7&8	Lithgow \ Newnes Plateau	✓
Springvale Colliery - Extension of mining	Lithgow \ Newnes Plateau	✓
Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Airly Coal – Mine Extension Project	Capertee	✓
Lidsdale Siding – Upgrade Project	Lidsdale \ Wallerawang	✓
Coal Services – Upgrade Project	Blackmans Flat	✓
Neubeck – Coal Project	Blackmans Flat	✓
Clarence Colliery	Lithgow \ Clarence \ Newnes Plateau	✓

Registered Organisation: NTC Wiray-dyuraa Ngumbaay-dyil / NTC Wiray-dyuraa Maiyingu

Name of Representative: Sharon Riley

Signed: S. Riley Date: 7/12/2011

Deborah Farina

From: Tony Seibel-Barnes [tony.seibel-barnes@centennialcoal.com.au]
Sent: Thursday, 1 December 2011 4:07 PM
To: Darrell Rigby; jodie@ozarkehm.com.au
Cc: Edwina White; Fiona Bartier
Subject: Fw: Centennial -REGISTRATION- Upcoming archaeological surveys and cultural heritage assessments

FYI... No action required...(just letting you know for the correspondence trail) - Wiradjuri Council of Elders were listed as 'no response'.

Regards,
Tony Seibel-Barnes
Environmental Coordinator
0448 443 864
tony.seibel-barnes@centennialcoal.com.au
www.centennialcoal.com.au

Be green - read on the screen

Centennial Coal
West

----- Forwarded by Tony Seibel-Barnes/CentennialCoal on 01/12/11 04:04 PM -----

Tony Seibel-Barnes/CentennialCoal

01/12/11 04:04 PM

To Robert Clegg <rclegg55@gmail.com>
cc
Subject Re: Centennial -REGISTRATION- Upcoming archaeological surveys and cultural heritage assessments Link

Thanks for getting back to me Rob,

Fortunately, Helen\Sharon had already registered interest.

Regards,
Tony Seibel-Barnes
Environmental Coordinator
0448 443 864
tony.seibel-barnes@centennialcoal.com.au
www.centennialcoal.com.au

Be green - read on the screen

Centennial Coal
West

Attention:
This message and any files transmitted with it are confidential and intended solely for the use of those persons to whom the message is addressed. If you have received this message in error please notify the sender immediately

Robert Clegg <rclegg55@gmail.com>

28/11/11 05:47 PM

To Tony Seibel-Barnes <tony.seibel-barnes@centennialcoal.com.au>
cc mingaan.lithgow@ymail.com
Subject Re: Centennial -REGISTRATION- Upcoming archaeological surveys and cultural heritage assessments

Tony
Sorry about the delay but have been away without my laptop. I believe I sent information to you in regards to the survey Expressing an interest of the Wiradjuri Council of Elders in this project nominating Sharon Riley as the representative of the Wiradjuri Council of Elders, this may have changed over the last few days as I have been given more information on a contact person in that area being Helen Riley, her contact information is as follows: send all information to mingaan.lithgow@ymail.com Address the mail to Helen do not include her name in the email address. **I have Cced Helen into this mail.**
Once again I appologise if I have caused an inconvenience.
Rob

On Mon, Nov 21, 2011 at 4:21 PM, Tony Seibel-Barnes <tony.seibel-barnes@centennialcoal.com.au> wrote:
Rob,

I have been given your email address as an alternate contact method. I am just following up on letters sent on the 8th of November (see attached) regarding registration for upcoming archaeological surveys and cultural heritage assessments.

Do you wish to register interest ?

Note1: The registration deadline was today (21/11/2011). Please respond asap if interested (by tomorrow morning is fine).
Note2: There were two letters sent because it was unclear whether different people needed to be notified. To date, I have had no response to either letter.

Thanks,
Tony Seibel-Barnes
Environmental Coordinator
0448 443 864
tony.seibel-barnes@centennialcoal.com.au
www.centennialcoal.com.au
Be green - read on the screen
Centennial Coal
West

Western Mine Extensions Archaeology Community Meeting

Date: 07th December 2011
Location: Black Gold Cabins 'Crib Room' (Wallerawang)
Commencement: 11:30 am

Attendees: *Centennial Coal*
Fiona Bartier (FB), Iain Hornshaw (IH), Tony Seibel-Barnes (TSB), Graham Pryor (GP), Neil Larcombe (NL), Lyndon Bryant (LB), Greg Brown (GB), Nicole Van den Berg (NVDB)

RPS
Darrell Rigby (DR), Cheng Yen Loo (CYL)

OzArk
Jodie Benton (JB)

Community
Helen Riley (HR) – Representing Wiradjuri Council of Elders
Elwin Wolfenden (EW) – Mingaan Aboriginal Corporation
Robyn Williams (RW) – Representing North-East Wiradjuri
Wendy Lewis (WL) - Warrabinga NTCAC
Jason Brown (JB) – Gundungurra TCAC

Apologies: Neville Williams, Sharon Williams (Mooka Traditional Owners)
Edwina White (Centennial Coal)

Shared Lunch at 12:00pm.

Meeting commenced 12:45pm.

FB – Provided Introduction\overview & purpose of meeting:

- Will cover the footprint of the areas for archaeological and cultural heritage fieldwork planned for 2012 across Centennial Coal's Western Region
- The fieldwork will be completed in accordance with NPW Act to allow for any future assessment of impacts that may be proposed.
- Will discuss the timing of the proposed field work to assist with planning the organisation's resources
- Will discuss the methodologies to be used for the studies and get feedback
- Provide an opportunity for initial discussion on cultural heritage that may exist within any of the areas
- Discuss the risks associated with field work
- Confirm which areas organisations would like to be involved with
- The field work is based on maximum possible footprint areas where archaeological and cultural heritage studies have not been completed or that have been completed a long time ago and need updating
- The focus of this field work for the first half of 2012 will be to create a baseline of what is there. Once project planning is completed for these larger projects in mid to late 2012, taking into account the results of the baseline field work, the next stage of the process will be to complete an impact assessment. Another round of consultation will then be undertaken at that stage.

TSB – Handed out 'Projects Tick List' form and requested that organisations tick which projects they which to be involved with.

JB – Presentation

- Stated the project site OzArk would be surveying (and showed relevant maps)
    - Neubeck
- Identified previously surveyed areas and known archaeological sites
- Ran through proposed methodology
    - NC-OS1, NC-OS2 – Suggested Test Excavation
    - NC-OS3, NC-OS4, NC-IFI
    - Important to re-locate and reassess sites (given passed timeframe since last survey ~ 7 years)
    - Disturbed versus undisturbed areas - Areas of total disturbance will not require reinspection. Erosion & bike tracks may lead to new finds.
    - Survey will be undertaken via use of pedestrian transects
- Need to capture cultural values
- Survey and Participation – suggest a Roster System
- Following the 2010 Aboriginal Cultural Heritage Consultation requirements (ACHCRs) as a guide to the community consultation process

DR – Presentation

- Listed sites RPS would be surveying (and showed map):
    - Springvale Colliery Bores 7&8
    - Springvale Colliery Extension of Mining
    - Angus Place Extension of Mining
    - Airly Coal Consent Renewal
    - Lidsdale Siding Upgrade
    - Coal Services Upgrade
    - Clarence
- Mentioned high priority projects and proposed dates (12/12/2011 – 14/12/2011)
    - Springvale Colliery Bores 7&8
    - Lidsdale Siding Upgrade
    - Coal Services Upgrade
- Provided overview of field work OH&S risks
    - Remote \ rugged areas (4WD will be used to gain access to general areas)
    - Climate – can change rapidly
    - Food \ water \ first aid – requirements to carry items and be prepared
    - General fitness – significant walking and possible climbing
- Outlined random drug \ alcohol testing requirements \ expectations
- Stated Centennial rates \ compensation
- Ran through proposed methodology (as sent to each organisation).
- Cultural knowledge & site identification important so areas can be protected into the future (this information can be kept 'private' if requested)

QUESTIONS \ DISCUSSION

WL – Which Office of Environment & Heritage (OEH) office are we working with?
FB – OEH Dubbo

****

WL – Topo maps should be taken to sites (in case GPS's fail or are not accurate).
DR – Yes, maps will be taken into field (including maps with any recorded arch sites). EPIRB's will also be taken into field (for safety aspects)

****

RW – Mentioned there are usually many site inductions required.
FB – Yes, each site will require inductions to be undertaken. Induction times vary (some short \ some longer).
JB – What site does the Neubeck project fall under?
FB – Angus Place
IH – There is also a 'Newnes Plateau Induction' requirement.
JB – Organisations will need to ensure all participants get inducted (especially considering staff rotation).
DR – Perhaps schedule inductions in the week prior to the commencement of fieldwork.
TSB – Requested organisations list 'sites officers' on back of 'Projects Tick List' form so inductions can be checked \ arranged.

****

FB – Organisations really need to consider the length of ongoing fieldwork (ie. rotate staff to manage fatigue)

****

HR & EW – Also need to consider 'gender specific' sites. Organisations need to provide appropriate members for such circumstances.
DR – Yes, need to know in advance so 'correct gender' Archaeologists can be arranged.

****

WL & RW – Upfront costs are difficult for organisations (eg. accommodation\travel)
FB – Centennial will consider making advanced bookings for accommodation and consideration will be made of accounting process timeframes.
JB – OzArk has made payments on behalf of Centennial in the past. This may be an option to also consider.

Meeting closed at 2:30pm

ACTION: RPS \ OzArk to follow up on Methodology sign-off and Tender Agreement sign-off (as required).

POST MEETING DISCUSSION

- Medicals discussed – Currently understood as not required for "field surveys" (as stated by Stella Nicholls)

  ACTION: FB to provide details \ evidence (Completed 08/12/2011 – Email distributed) and will follow up with managers at the Mine Managers Meeting (14/12/2011).

- Decision made to cancel surveys planned 12/12/2011 – 14/12/2011 <u>with the community</u> (due to short notification timeframe \ induction requirements). However, the sites will be initially surveyed by RPS as planned (12/12/2011 – 14/12/2011) Monday – Wednesday
  - Springvale Colliery Bores 7&8
  - Lidsdale Siding Upgrade
  - Coal Services Upgrade

  ACTION: TSB to arrange inductions for initial surveys at Lidsdale Siding \ Coal Services next week (Completed 09/12/2011).

  ACTION: CYL (RPS) to contact community to cancel surveys next week (Completed 09/12/2011).

Newcastle Office
Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292
PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Mr Simon Blackshield
Blackshield Lawyers
Level 57, MLC Centre, 19-29 Martin Place
Sydney NSW 2000

Dear Simon

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

Thank you for your registration of interest in this project. Attached is information about the proposed projects and the heritage assessment methodology including the methodology for information regarding cultural significance.

It is requested that if you are still interested in these projects, then please make yourselves available to attend a meeting about the various projects on Wednesday 7 December at the Black Gold Cabins, Wallerawang. Participation at the meeting is voluntary. The meeting will start at 11.30am and conclude at 3.30pm. Lunch will be provided. At this meeting we will present more information and discuss the various aspects of them. At this stage it is expected that field work will be extensive and be carried out in several phases starting mid December and possibly running through until May 2012. To confirm your attendance, please contact Mr. Tony Seibel-Barnes at tony.seibel-barnes@centennialcoal.com.au or by phone on 0448 443 864.

We are seeking your input into the heritage assessment methodology. We have attached a feedback form which you may wish to use in response to the methodology.

If you could provide feedback on the methodology to RPS by 20 December 2011, either by email or return mail that would be greatly appreciated. Please address methodology feedback to Darrell Rigby (darrell.rigby@rpsgroup.com.au) or Philippa Sokol (philippa.sokol@rpsgroup.com.au):

RPS
PO Box 428, HAMILTON NSW 2292
Phone: 02 4940 4200

If you have any further enquiries regarding the above please do not hesitate to contact Philippa Sokol or myself.

Yours sincerely
RPS

Darrell Rigby
Archaeology Manager

Centennial Coal Western Projects Information

The following information has been provided in accordance with the Aboriginal Cultural Heritage Consultation Requirements 2010 (ACHCRs). Information has been provided on the proposed project (as required by Stage 2 ACHCRs) as well as on gathering information regarding cultural significance (as required by Stage 3 ACHCRs) assessment.

As part of the ACHCR process Aboriginal stakeholders are expected to respond to information sent, as well as provide cultural heritage information as appropriate in accordance with the role specified in the ACHCR 2010, pages 15-16. RPS and Centennial Coal in accordance with their role under the ACHCRs will consult with the Aboriginal community, will supply suitable project information and provide the opportunity for Aboriginal stakeholder input into the heritage management process as specified in the ACHCRs 2010, pages 16-17.

Springvale Colliery – Bores 7&8

Springvale currently operates two mine dewatering facilities on the Newnes Plateau; three submersible pumps at the "Bore 6" facility and a further two dewatering pumps at the "Shaft 3" (ventilation shaft) facility. Both these facilities discharge into the Springvale-Delta Water Transfer Scheme for delivery to the Wallerawang Power Station.

The regional dip of the coal seam at Springvale is to the north and east. Bore 6 is currently located at the lowest point in the mine, near the northern end of LW415 and is the mine's principal dewatering facility. However, as mine workings progress further to the east, additional dewatering facilities need to be established ahead of the workings to ensure water levels in the mine can be safely kept to manageable levels. There are no alterations proposed for the existing dewatering facility at Shaft 3.

The sites for proposed dewatering bores 7 and 8 have been selected to suit anticipated seam floor contours and the proposed mine layout; together with suitable topography for the location of the surface facilities. (Refer to Figure 1). Surface disturbance will include an initial site foot print of approximately 90m x 80m, although it is proposed to assess a minimum area of 120m x 120m to ensure all potential local issues are identified. Both the electricity mains into the sites and the discharge pipelines away from the sites will be buried in a common trench which will follow, as far as practically possible, existing exploration access tracks and fire trails. These tracks will also require some augmentation to allow safe access for large construction and maintenance equipment into the sites. It is therefore proposed to assess an additional corridor of approximately 30m either side of the existing tracks into both sites.

Springvale Colliery - Extension of mining

The Springvale Coal extension includes an increase in production, increase in personnel and upgrades to facilities supporting the Springvale operation. Production rate will increase from 3.4 Mtpa to 5 Mtpa. To support the extension, Springvale will require the continuation of new surface facilities on the Newnes Plateau and the pit top. This includes additional dewatering bores, ventilation facility upgrade and minor amendments to the existing configuration of the Pit Top.

The final location of these facilities is currently not available but will be prior to the commencement of field work.

The proposed mining area will be divided into two domains. Domain 1 will include a proposed longwall layout within Mining Leases 1326 and 1588. The study area will extend 500m beyond the project footprint. Longwalls will be oriented in a north to south direction.

Domain 2 will include a proposed longwall layout within Exploration Licence EL 6974, located to the south of Domain 1. Longwalls will also be oriented in a north to south direction. The longwall layouts will be presented as a base case scenario. It is noted that additional work is required to finalise the extent of the resource including additional exploratory drilling to fully define the resource. The study area will extend 500m beyond the project footprint.

Approval for the project would be required by early – mid 2014.

The objective of the cultural heritage baseline assessment is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within lease/licence areas to formulate mitigation and management strategies necessary for inclusion in an Environmental Impact Statement (EIS). This work will also feed into an Extraction Plan should the project be approved.

Angus Place – Mine Extension Project

The Angus Place mine extension project includes an increase in the mining area currently approved within existing Mining Lease area as well as upgrades to facilities supporting the operation. To support the extension, Angus Place will require some new surface facilities. This includes additional dewatering bores, ventilation facilities and potentially minor amendments to the existing configuration of the Pit Top. The final location of these facilities is currently not available but will be prior to the commencement of field work.

The proposed mining area will be divided into two domains. Domain 1 will include a proposed longwall layout within Mining Leases 1424. The study area will extend 500m beyond the project footprint. Longwalls will be oriented generally in an southwest - northeast direction.

Domain 2 will include a proposed partial extraction layout within Consolidated Coal Lease (CCL) 704, located to the north, west and south of the Angus Place pit top facilities. The partial extraction panels will be presented as a base case (indicative) scenario. It is noted that additional work is required to finalise the extent of the resource including additional exploratory drilling to fully define the resource. The study area will extend 500m beyond the project footprint.

Approval for the project would be required by early – mid 2014.

The objective of the cultural heritage baseline assessment is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within lease/licence areas to formulate mitigation and management strategies necessary for inclusion in an Environmental Impact Statement (EIS). This work will also feed into an Extraction Plan should the project be approved.

Airly Coal – Consent Renewal

Airly Coal will progress an Environmental Assessment application for Development Consent renewal and also SMP approval and lease renewal/extension with a view to gaining project approval by July 2014. The objective of the cultural heritage baseline assessment is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within lease areas ML 1331 and A232 in order to formulate mitigation and management strategies necessary for inclusion in E.A. This work will also feed into the proposed SMP and the lease renewal/extension plans.

Lidsdale Siding – Upgrade Project

Centennial Coal propose to upgrade the existing Lidsdale Siding rail loading facility by automating the train loading facility. This would significantly reduce the need for mobile plant and equipment to load rail wagons by establishing a main elongated conical stockpile with underground reclaimers feeding a ground conveyor elevating to a train loading bin. Trains would then be automatically loaded in a continuous operation as the train drives away from the bin.

Coal Services – Upgrade Project

Centennial Coal proposes to upgrade of the existing Centennial Coal Services site near Wallerawang NSW. The project includes the upgrade of the existing Washery, construction of a new haul road, increase utilisation of existing conveyor, construction of additional conveyors and consolidation of existing overlapping consents.

The new infrastructure will enable the existing operations of Angus Place Colliery and Springvale Coal Mine to have full access to both existing Delta Electricity Power Stations, as well as export markets. The project also involves the separation of the transport and processing infrastructure into a single development consent rather than overlapping consents with Springvale Coal Mine, Angus Place Colliery and the now closed Lamberts Gully Open Cut.

The project includes the continued use of all existing infrastructure and activities associated with the transport and processing of coal from each mine gate to either power station and the Lidsdale Siding.

Clarence Colliery

Clarence Colliery proposes to commence a feasibility assessment for potential reject emplacement areas. Part of this feasibility assessment will include an Archaeological assessment to determine the suitability of the area. At the same time, Clarence Colliery proposes to align the existing development consent area (DA 504.00) with the boundary of Mining Lease 1583. This is likely to require a modification to consent which will be supported by an Archaeological and Heritage assessment.

Aboriginal Cultural Heritage Assessment Methodology and Gathering Information Regarding Cultural Significance

The Aboriginal cultural heritage assessment (ACHA) report will conform to and comply with the OEH 'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW'.

The methodology for the ACHA comprises:

- a review of background environmental and archaeological information,
- an AHIMS search;
- detailed literature review of archaeological assessments conducted in the area;
- formulation of a predictive model;
- a heritage survey;
- assessment of significance, and;
- the formulation of recommendations for heritage management.

The above components of the Aboriginal heritage assessment methodology will be completed in consultation with Aboriginal stakeholders.

RPS invites Aboriginal stakeholders to provide culturally appropriate information verbally or in writing with regards to this project (a feedback form is attached and may be used as necessary). This includes any places of cultural value which may, or may not contain archaeological material.

Cultural information provided by Aboriginal stakeholders will be recorded in the Aboriginal consultation log and discussed in the report, unless the information is too sensitive to be made public in which case, the attached protocol will be adopted (Figure 2), or another protocol adopted as agreed by the Aboriginal stakeholder/s.

As part of this methodology Aboriginal stakeholders will be provided with the draft report for comment and allowed 28 days for review, as per page 14 of the ACHCRs 2010.

Aboriginal Feedback Form for the Centennial Coal Western Projects

I have been sent information regarding the proposed heritage assessment methodology including protocols for the management of sensitive cultural information for the investigation of the Centennial Coal Western projects. I seek to endorse the proposed methodology, unless otherwise stated below, or with the following amendments:

Name……

Registered Organisation……

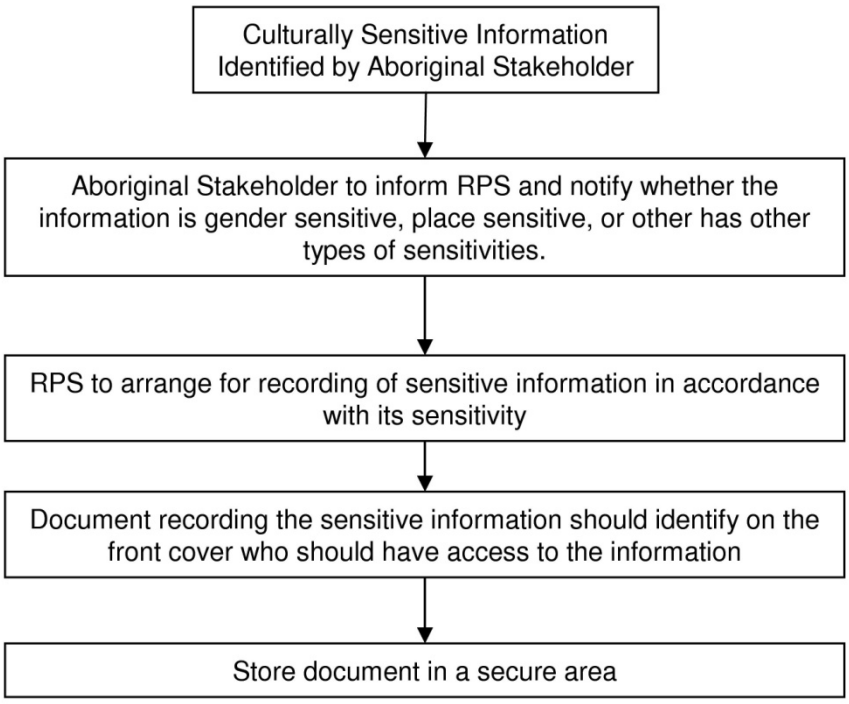
Signature……...

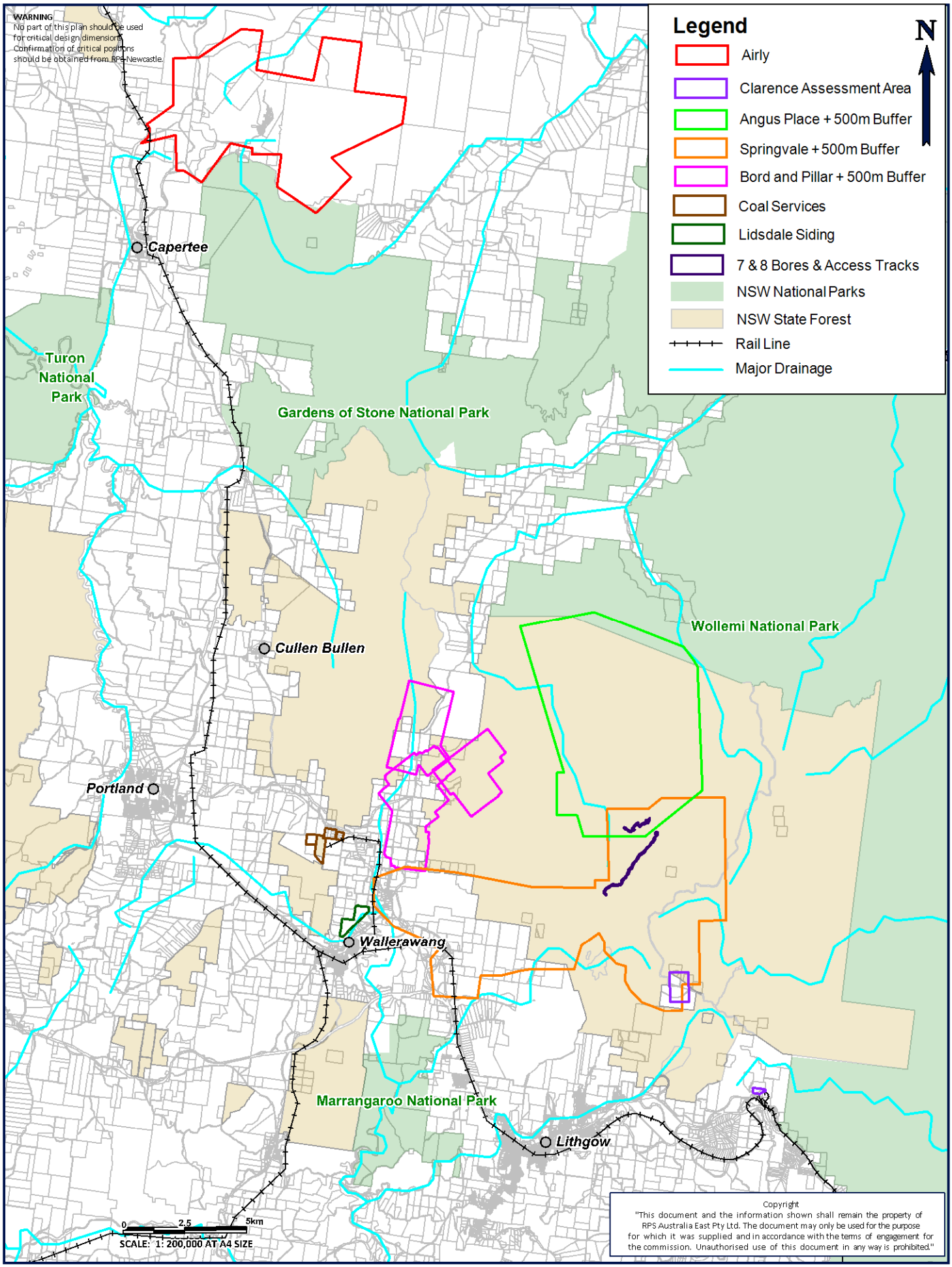
Date……

Please send this document within 28 days signed back to **Philippa Sokol** or **Darrell Rigby** via:

- Fax : 02 4961 6794
- Post: PO Box 428, HAMILTON NSW 2303
- E-mail: philippa.sokol@rpsgroup.com.au or darrell.rigby@rpsgroup.com.au

Figure 2: Culturally Sensitive Information Protocol





TITLE: INDICATIVE ASSESSMENT AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

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Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292
PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Mrs Sharon Brown
Gundungurra Tribal Council Aboriginal Corporation
14 Oak Street
Katoomba NSW 2780

Dear Sharon

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

Thank you for your registration of interest in this project. Attached is information about the proposed projects and the heritage assessment methodology including the methodology for information regarding cultural significance.

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If you could provide feedback on the methodology to RPS by 20 December 2011, either by email or return mail that would be greatly appreciated. Please address methodology feedback to Darrell Rigby (darrell.rigby@rpsgroup.com.au) or Philippa Sokol (philippa.sokol@rpsgroup.com.au):

RPS
PO Box 428, HAMILTON NSW 2292
Phone: 02 4940 4200

If you have any further enquiries regarding the above please do not hesitate to contact Philippa Sokol or myself.

Yours sincerely
RPS

Darrell Rigby
Archaeology Manager

Centennial Coal Western Projects Information

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Registered Organisation……

Signature……...

Date……

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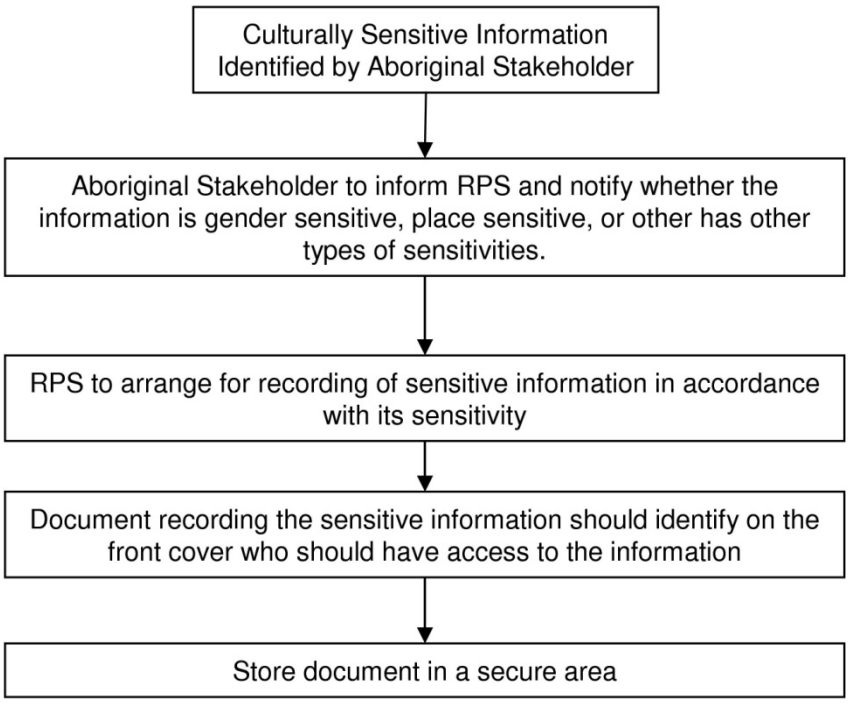

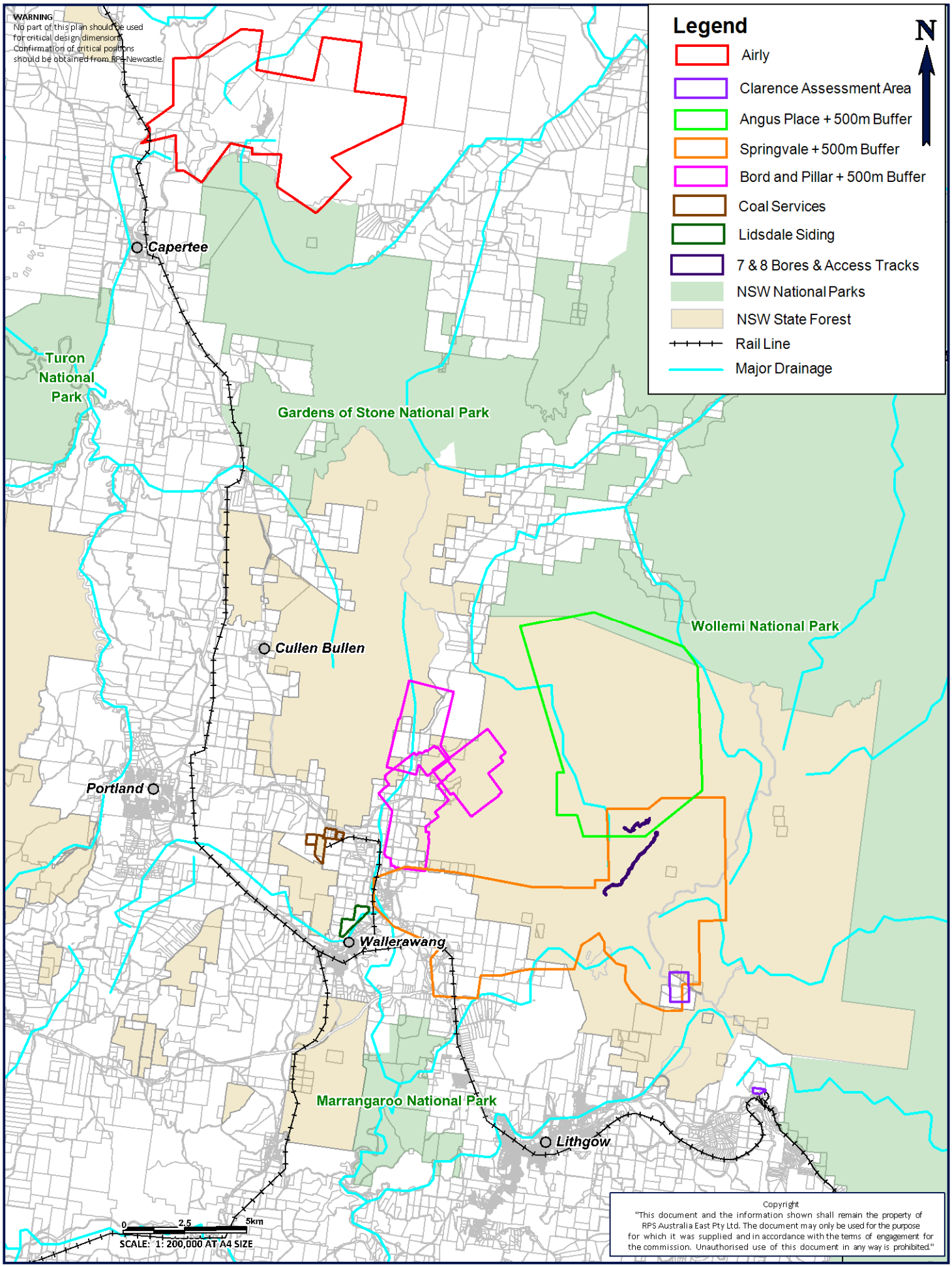

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LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

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PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Ms Wendy Lewis
Warrabinga Native Title Claimants Aboriginal Corporation
525 Pheasants Nest Road
Pheasants Nest NSW 2574

Dear Wendy

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Yours sincerely
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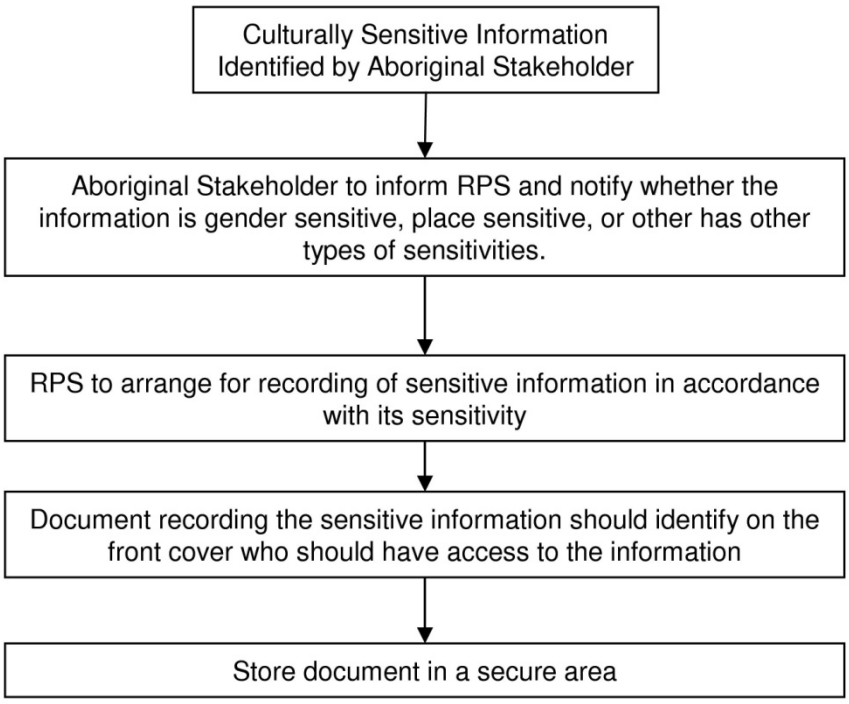

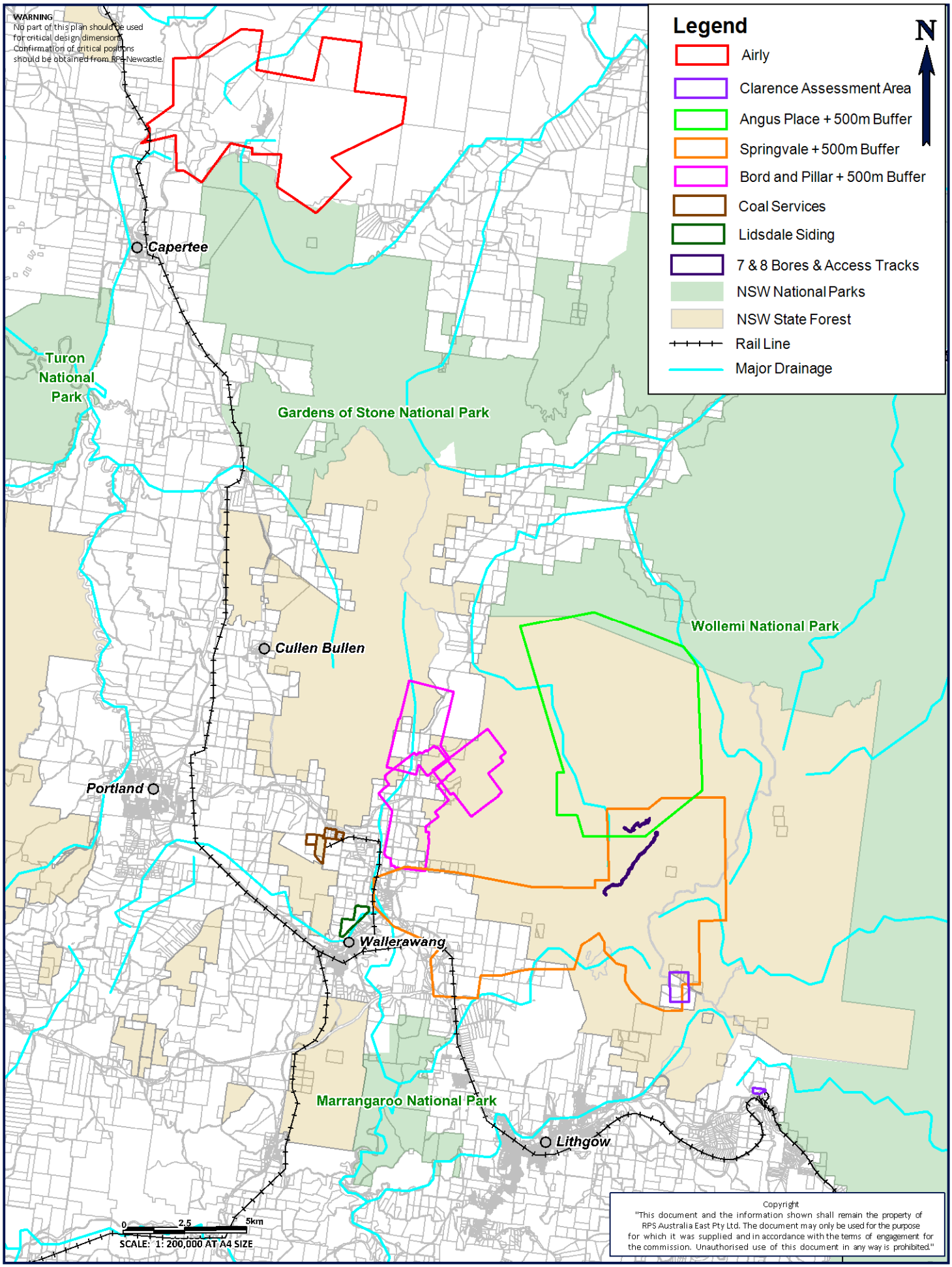

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Our Ref: 110599:DR
Date: 23 November 2011

Attn: Mr Eddy Neumann
Eddy Neumann Lawyers
Level 1, 255 Castlereagh Street
Sydney NSW 2000

Dear Eddy

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Registered Organisation……

Signature……...

Date……

Please send this document within 28 days signed back to **Philippa Sokol** or **Darrell Rigby** via:

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- Post: PO Box 428, HAMILTON NSW 2303
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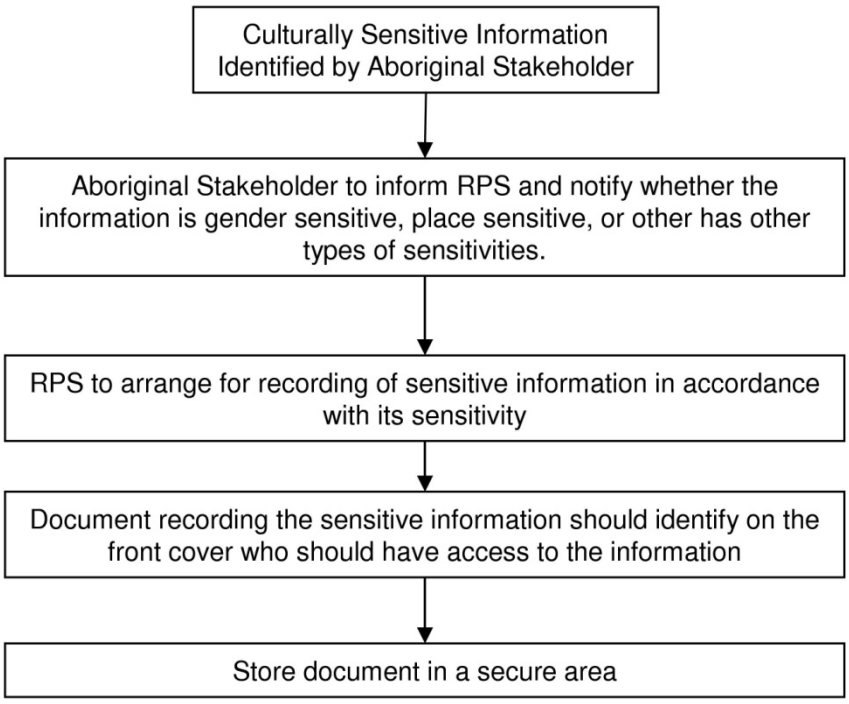

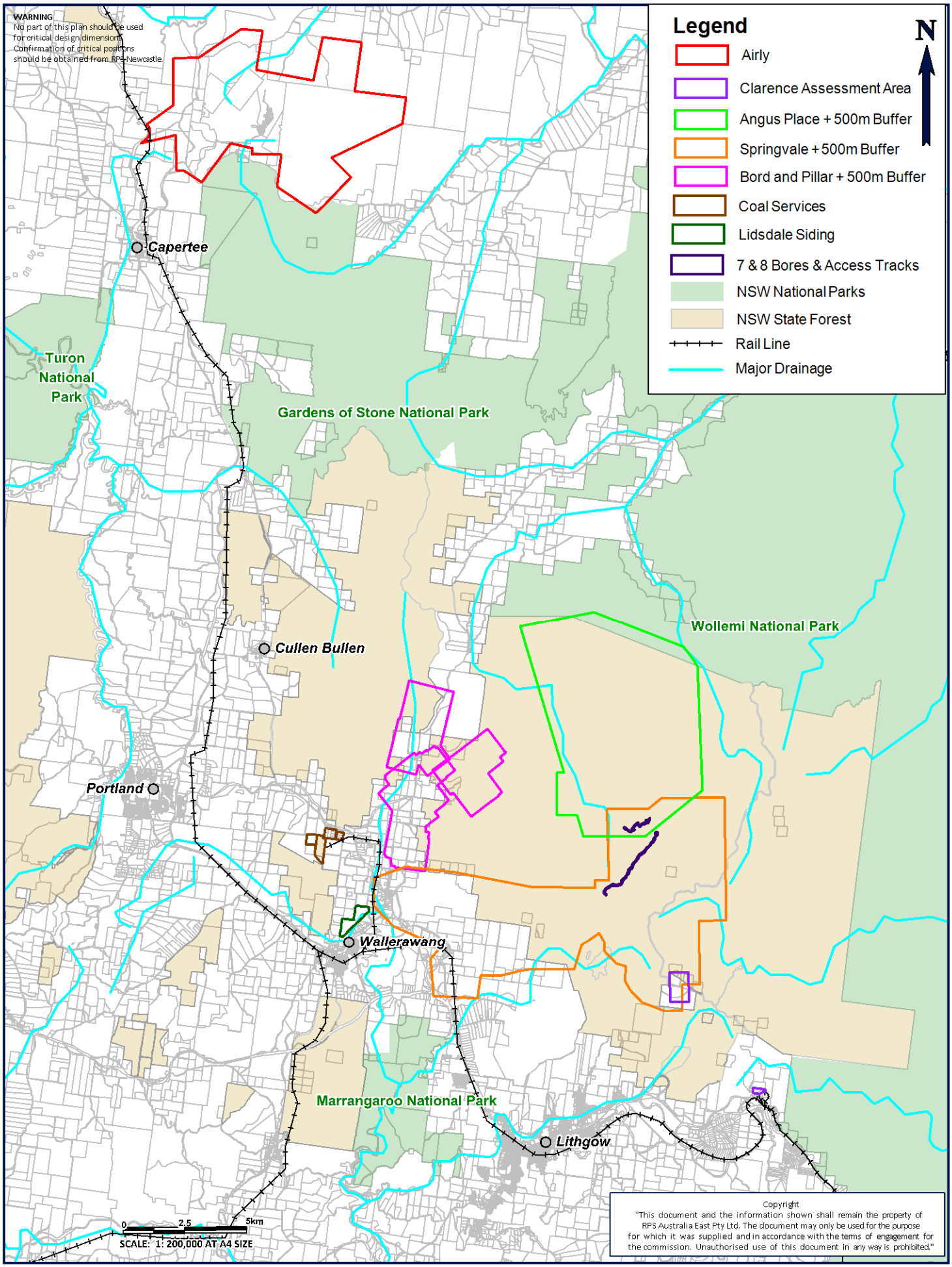

TITLE: INDICATIVE ASSESSMENT AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

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PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Ms Helen Riley
Mingaan Aboriginal Corporation
38 Tweed Road
Lithgow NSW 2790

Dear Helen

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

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PO Box 428, HAMILTON NSW 2292
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Yours sincerely
RPS

Darrell Rigby
Archaeology Manager

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The sites for proposed dewatering bores 7 and 8 have been selected to suit anticipated seam floor contours and the proposed mine layout; together with suitable topography for the location of the surface facilities. (Refer to Figure 1). Surface disturbance will include an initial site foot print of approximately 90m x 80m, although it is proposed to assess a minimum area of 120m x 120m to ensure all potential local issues are identified. Both the electricity mains into the sites and the discharge pipelines away from the sites will be buried in a common trench which will follow, as far as practically possible, existing exploration access tracks and fire trails. These tracks will also require some augmentation to allow safe access for large construction and maintenance equipment into the sites. It is therefore proposed to assess an additional corridor of approximately 30m either side of the existing tracks into both sites.

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The Springvale Coal extension includes an increase in production, increase in personnel and upgrades to facilities supporting the Springvale operation. Production rate will increase from 3.4 Mtpa to 5 Mtpa. To support the extension, Springvale will require the continuation of new surface facilities on the Newnes Plateau and the pit top. This includes additional dewatering bores, ventilation facility upgrade and minor amendments to the existing configuration of the Pit Top.

The final location of these facilities is currently not available but will be prior to the commencement of field work.

The proposed mining area will be divided into two domains. Domain 1 will include a proposed longwall layout within Mining Leases 1326 and 1588. The study area will extend 500m beyond the project footprint. Longwalls will be oriented in a north to south direction.

Domain 2 will include a proposed longwall layout within Exploration Licence EL 6974, located to the south of Domain 1. Longwalls will also be oriented in a north to south direction. The longwall layouts will be presented as a base case scenario. It is noted that additional work is required to finalise the extent of the resource including additional exploratory drilling to fully define the resource. The study area will extend 500m beyond the project footprint.

Approval for the project would be required by early – mid 2014.

The objective of the cultural heritage baseline assessment is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within lease/licence areas to formulate mitigation and management strategies necessary for inclusion in an Environmental Impact Statement (EIS). This work will also feed into an Extraction Plan should the project be approved.

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Airly Coal will progress an Environmental Assessment application for Development Consent renewal and also SMP approval and lease renewal/extension with a view to gaining project approval by July 2014. The objective of the cultural heritage baseline assessment is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within lease areas ML 1331 and A232 in order to formulate mitigation and management strategies necessary for inclusion in E.A. This work will also feed into the proposed SMP and the lease renewal/extension plans.

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Centennial Coal propose to upgrade the existing Lidsdale Siding rail loading facility by automating the train loading facility. This would significantly reduce the need for mobile plant and equipment to load rail wagons by establishing a main elongated conical stockpile with underground reclaimers feeding a ground conveyor elevating to a train loading bin. Trains would then be automatically loaded in a continuous operation as the train drives away from the bin.

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Signature……...

Date……

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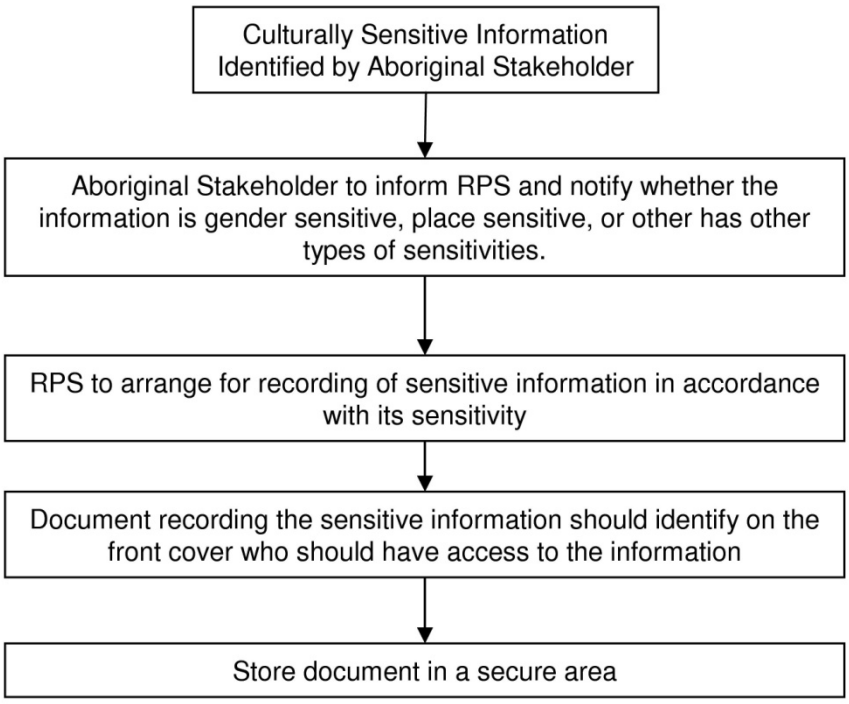

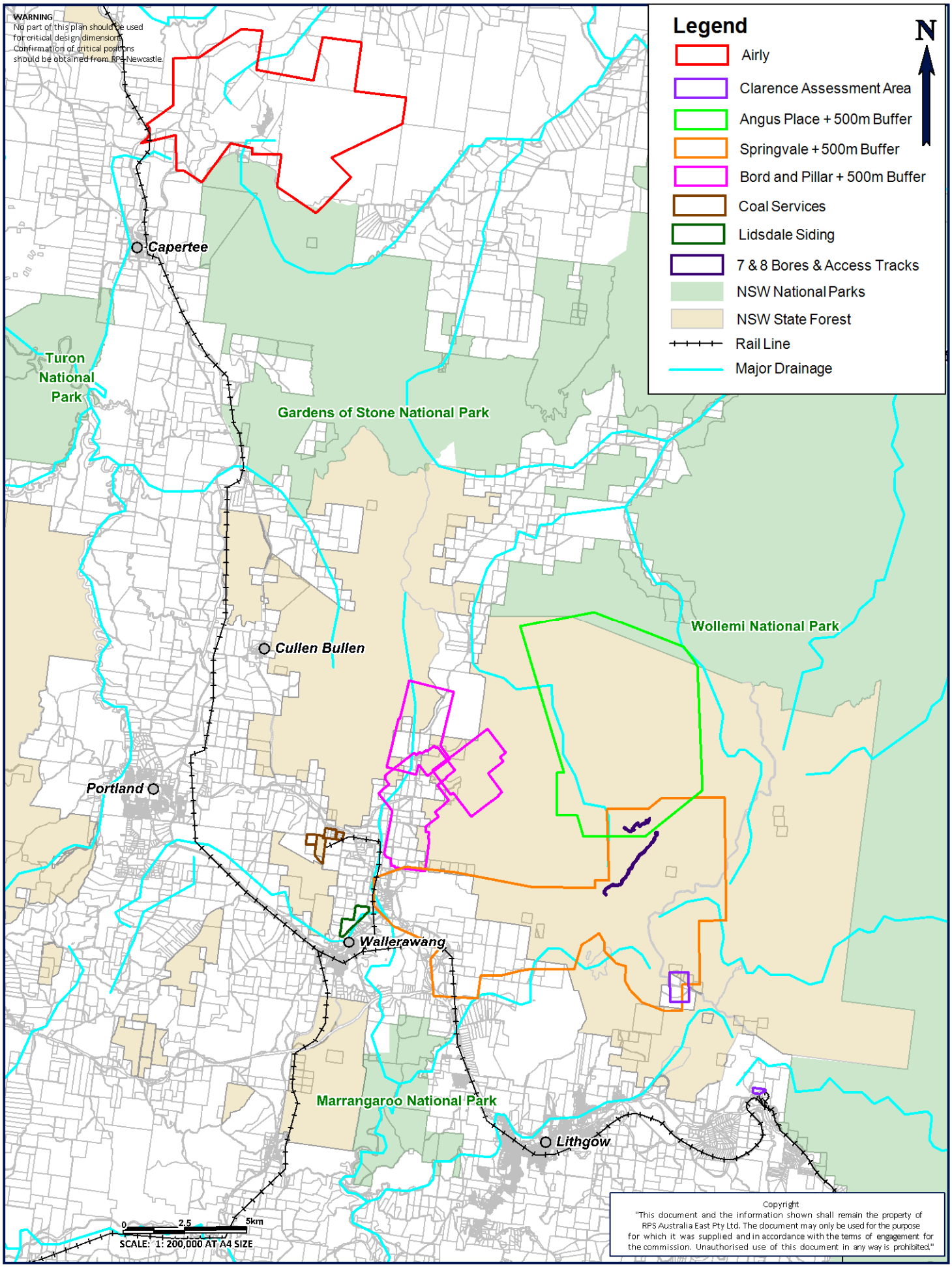

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DATUM: (GDA 94)
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DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

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PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Ms Tonilee Scott
Bathurst Local Aboriginal Land Council
PO Box 1500
Bathurst NSW 2795

Dear Tonilee

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

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Date……

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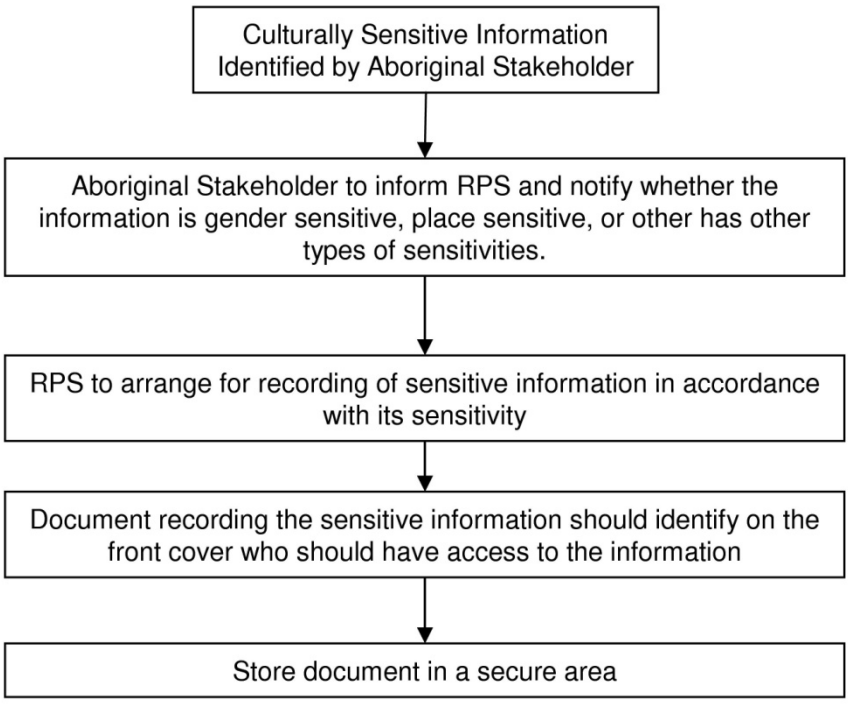

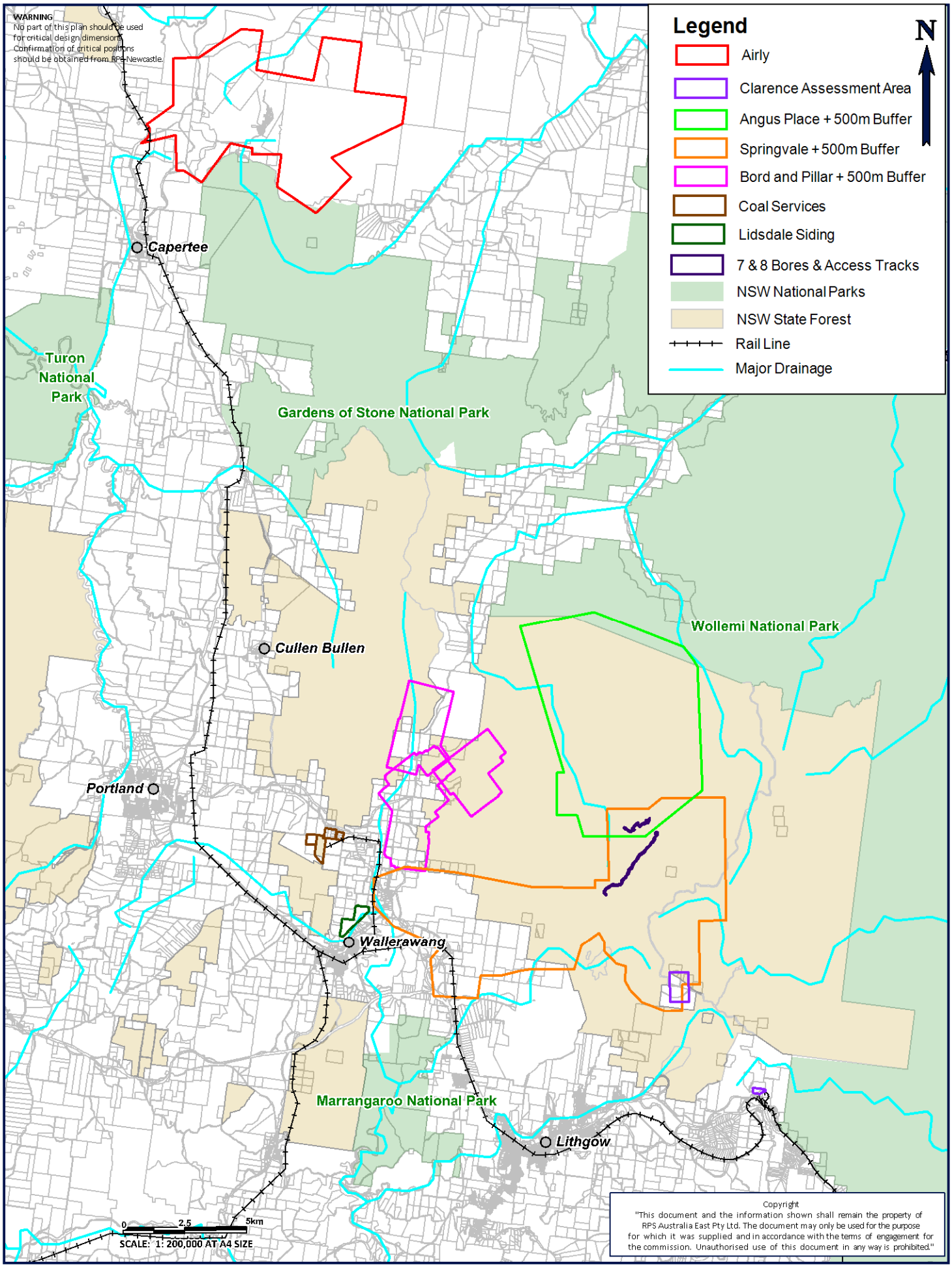

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LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
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PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Ms Lyn Syme
North-East Wiradjuri
PO Box 29
Kandos NSW 2848

Dear Lyn

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

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Registered Organisation……

Signature……...

Date……

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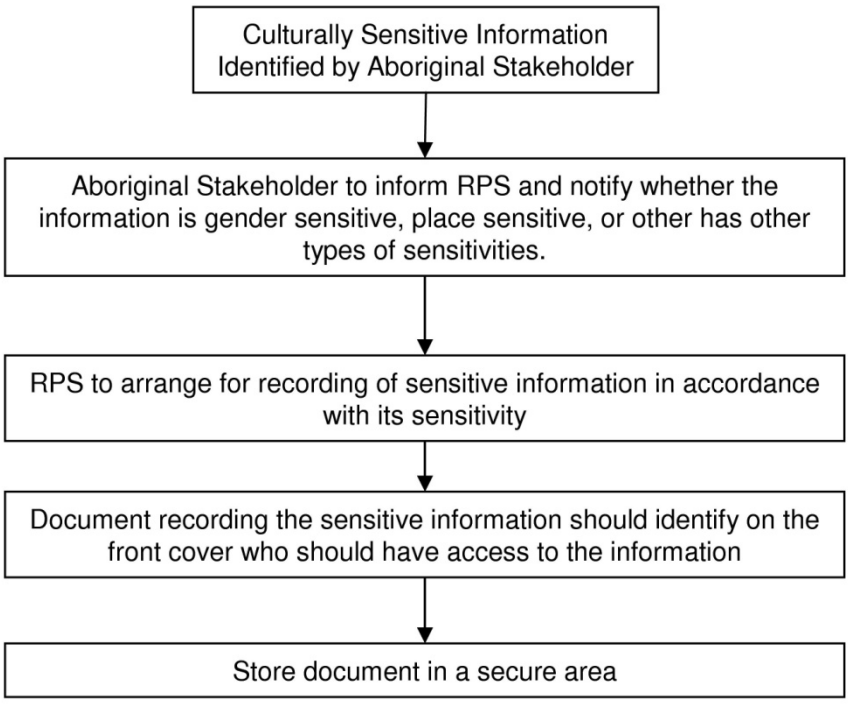

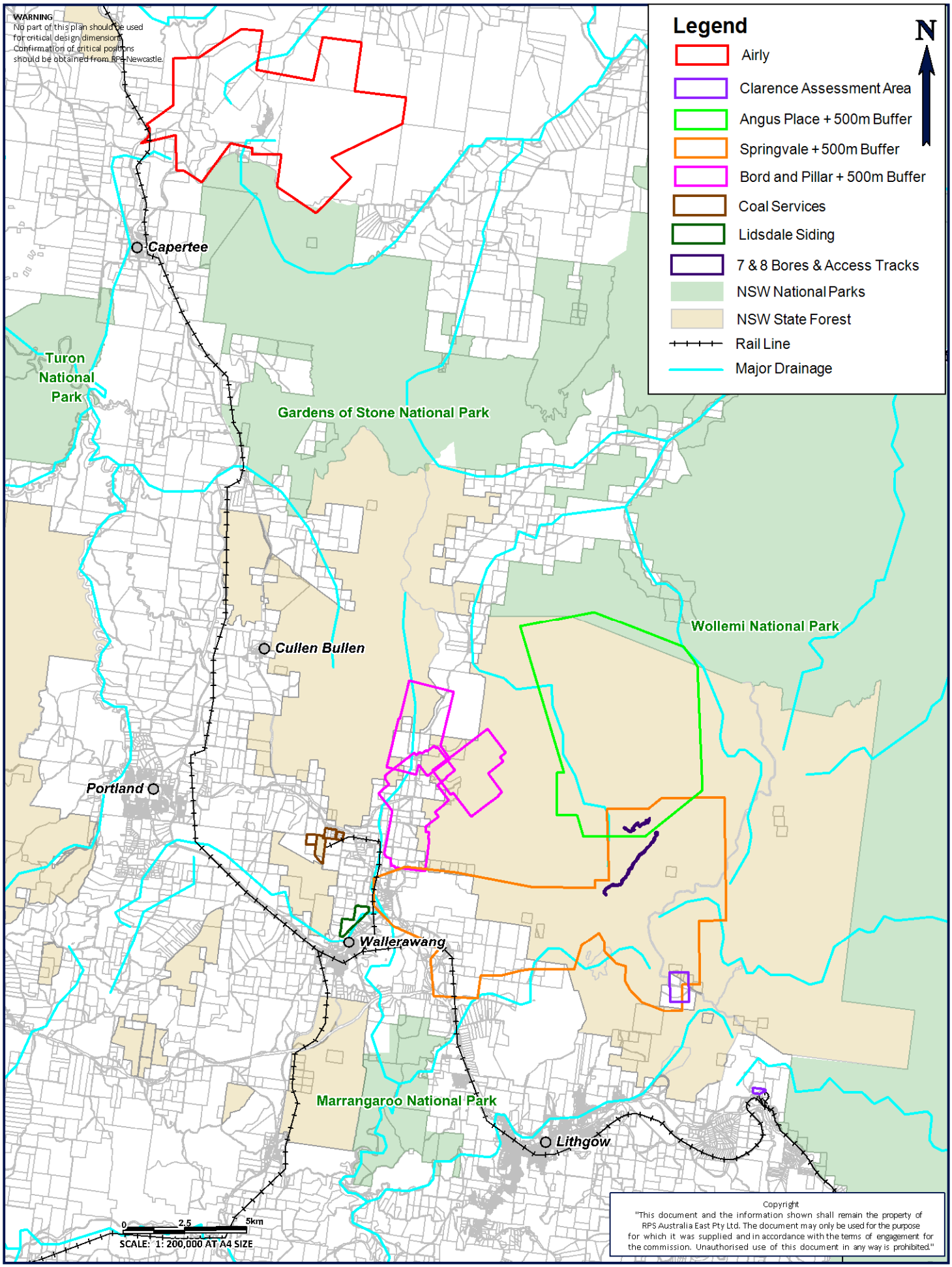

TITLE: INDICATIVE ASSESSMENT AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

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PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 110599:DR
Date: 23 November 2011

Attn: Mr Philip Teitzel
Teitzel & Partners
PO Box 1151
Manly NSW 1655

Dear Philip

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Yours sincerely
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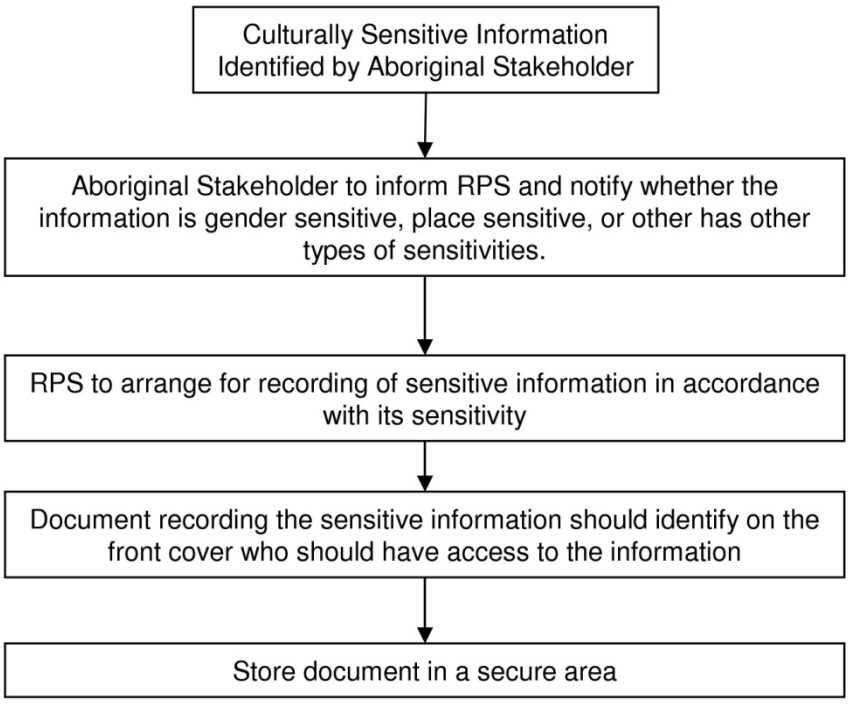

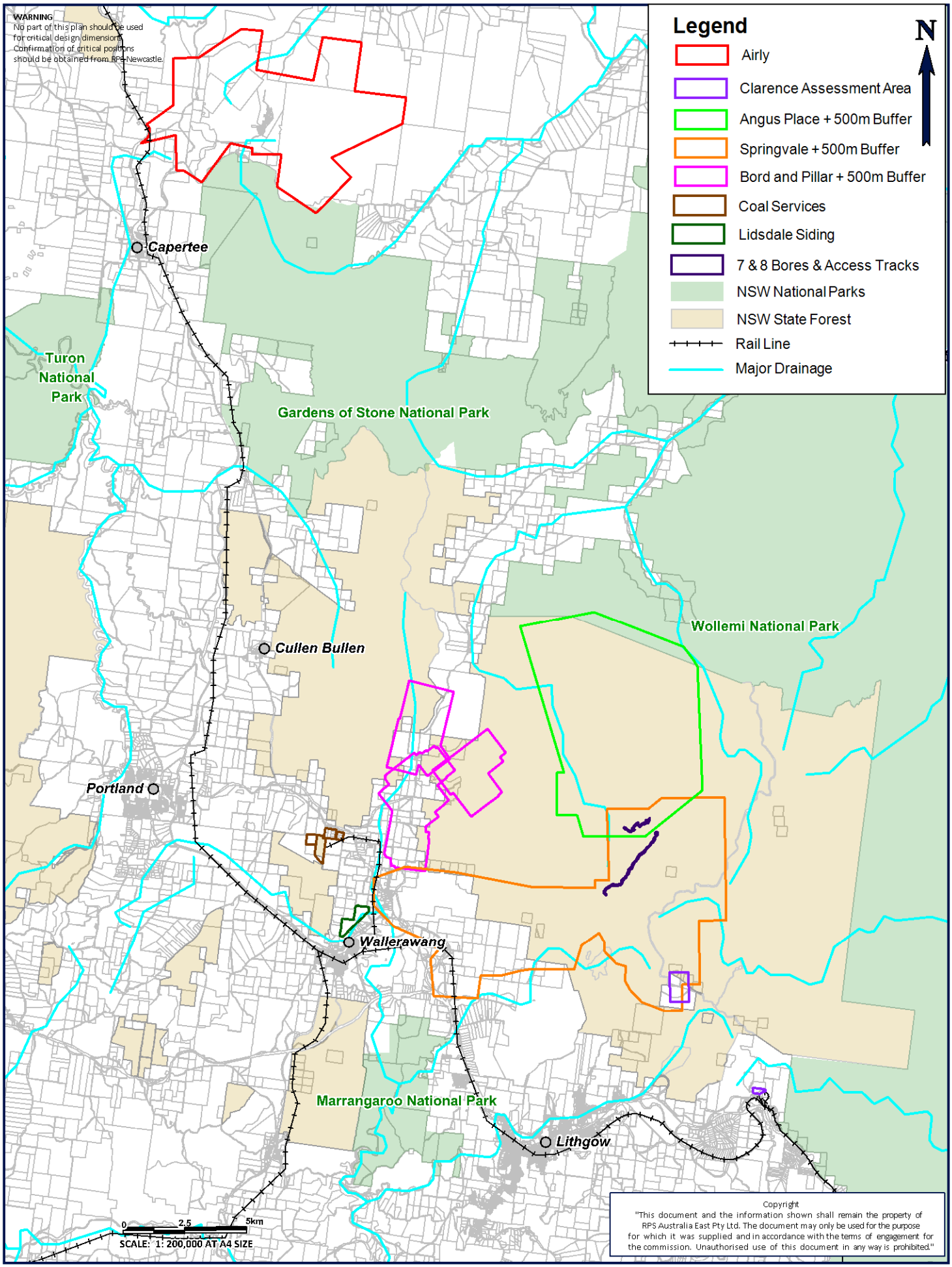

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LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
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Our Ref: 110599:DR
Date: 23 November 2011

Attn: Ms Sharon Williams
Mooka Traditional Owners
PO Box 70
Cowra NSW 2794

Dear Sharon

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- detailed literature review of archaeological assessments conducted in the area;
- formulation of a predictive model;
- a heritage survey;
- assessment of significance, and;
- the formulation of recommendations for heritage management.

The above components of the Aboriginal heritage assessment methodology will be completed in consultation with Aboriginal stakeholders.

RPS invites Aboriginal stakeholders to provide culturally appropriate information verbally or in writing with regards to this project (a feedback form is attached and may be used as necessary). This includes any places of cultural value which may, or may not contain archaeological material.

Cultural information provided by Aboriginal stakeholders will be recorded in the Aboriginal consultation log and discussed in the report, unless the information is too sensitive to be made public in which case, the attached protocol will be adopted (Figure 2), or another protocol adopted as agreed by the Aboriginal stakeholder/s.

As part of this methodology Aboriginal stakeholders will be provided with the draft report for comment and allowed 28 days for review, as per page 14 of the ACHCRs 2010.

Aboriginal Feedback Form for the Centennial Coal Western Projects

I have been sent information regarding the proposed heritage assessment methodology including protocols for the management of sensitive cultural information for the investigation of the Centennial Coal Western projects. I seek to endorse the proposed methodology, unless otherwise stated below, or with the following amendments:

Name……

Registered Organisation……

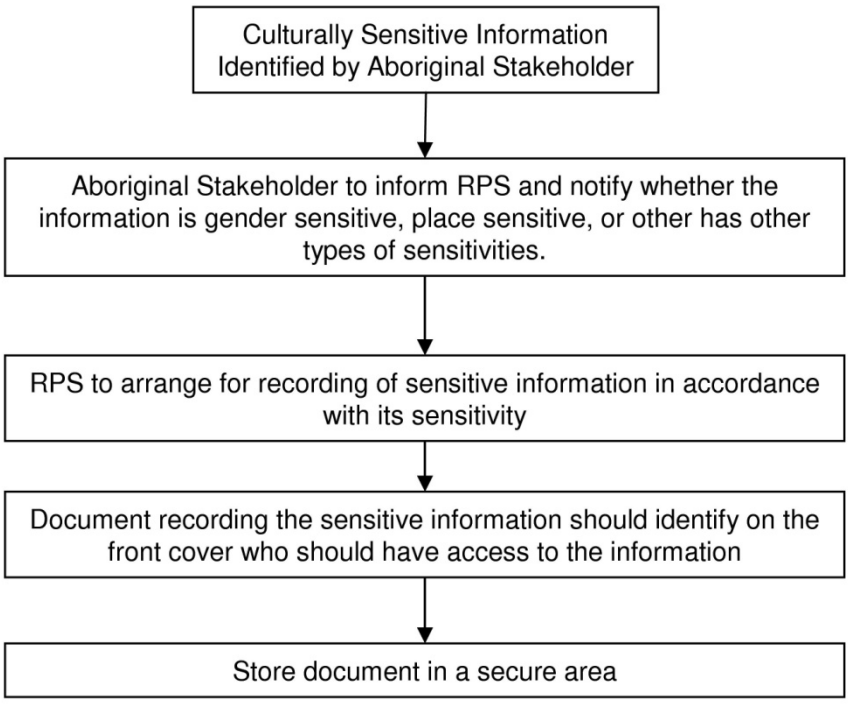
Signature……...

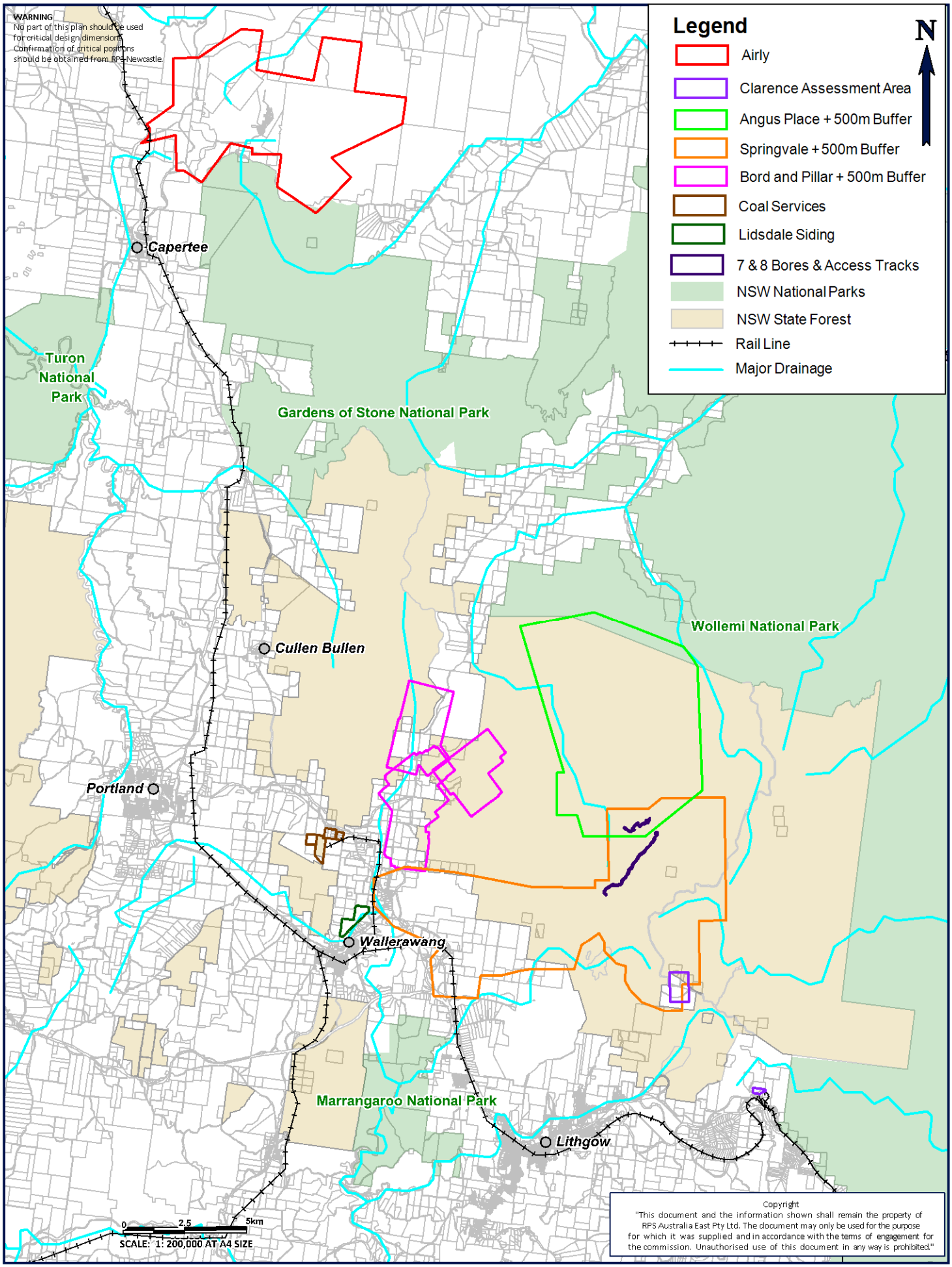
Date……

Please send this document within 28 days signed back to **Philippa Sokol** or **Darrell Rigby** via:

- Fax : 02 4961 6794
- Post: PO Box 428, HAMILTON NSW 2303
- E-mail: philippa.sokol@rpsgroup.com.au or darrell.rigby@rpsgroup.com.au

Figure 2: Culturally Sensitive Information Protocol





TITLE: INDICATIVE ASSESSMENT AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE: .

LAYOUT REF: J:\JOBS\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY):A A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

RPS

Deborah Farina

From: Cheng Yen Loo
Sent: Friday, 20 January 2012 1:12 PM
To: Philippa Sokol
Subject: FW: Requesting Warrabinga's Public Liability Documentation
Attachments: W_20120112095113-11p001.pdf

Please add the updated Warrabinga Public Liability doc to G drive

Thanks

Cheng Yen Loo
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Lance Syme [mailto:lance.syme@warrabinga.com.au]
Sent: Thursday, 12 January 2012 10:06 AM
To: Cheng Yen Loo
Cc: Darrell Rigby
Subject: RE: Requesting Warrabinga's Public Liability Documentation

Cheng,

PL as requested.

Thanks
Lance

From: Cheng Yen Loo [mailto:chengyen.loo@rpsgroup.com.au]
Sent: Wednesday, 11 January 2012 10:13 AM
To: lance.syme@warrabinga.com.au
Subject: Requesting Warrabinga's Public Liability Documentation

Hi Lance

As per our conversation, I am trying to obtain a copy of Warrabinga's public liability documentation.

Would you be able to send me a copy of the documentation and also cc the reply to Darrell.Rigby@rpsgroup.com.au

Many thanks

Cheng Yen

RPS

Cheng Yen Loo
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
chengyen.loo@rpsgroup.com.au

PO Box 428, Hamilton,
NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Sharon Brown [sharonbrown@gundungurra.org.au]
Sent: Thursday, 29 March 2012 10:06 AM
To: Philippa Sokol
Subject: Re: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Hi Phillippa

It will be Jason Brown senior site officer that will attend on these days. I am of the understanding that Jason has completed previous inductions, however you may need to confirm that the induction was with Angus Place.

Kind regards

Sharon Brown

On Wed, Mar 28, 2012 at 3:18 PM, Philippa Sokol <Philippa.Sokol@rpsgroup.com.au> wrote:

Dear Sharon,

Archaeological works are being conducted at Angus Place Colliery next Tuesday 03/04/2012 to Thursday 05/04/2012. A representative from Gundungurra Tribal Council Aboriginal Corporation is invited to participate in the field work.

Meeting Place: Angus Place Colliery car park

Meeting Time: 7:45 am for 8:00 am start

PPE: Protective items should include long pants, long sleeve shirt, high visibility clothing or vest, protective boots, safety glasses, gloves, hat, sunscreen etc.

Provisions: Please ensure your Site Officer brings adequate food and water supply to last a full day in the field.

Please be advised that only your Site Officer that has recently been inducted at Angus Place Colliery can participate in the field work.

Can you please let us know if you would have a Site Officer available for these works?

Best Regards,

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton,
NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

--
Sharon Brown

Deborah Farina

From: Philippa Sokol
Sent: Friday, 30 March 2012 4:39 PM
To: 'Lance Syme'
Cc: 'Lyn Syme'
Subject: RE: Angus Place Fieldwork
Attachments: 111285 Field Map with Topo A A3.pdf; Centennial Coal Western projects Warrabinga Methodology and signed.pdf

Importance: High

Hi Lance,

Thank you for the new Warrabinga NTCAC contact information, I didn't have this on file so it will be good to update it.

I have attached above and Angus Place map with the AHIMS data. Next week's survey will be conducted in the northern portion of the western study area. I have also attached the signed Warrabinga NTCAC methodology which covers all works in the Western Projects area, including the Angus Place works.

Yes the invoicing arrangements for this project are covered by the recently signed "Tender Agreement".

Could you also please advise who will be the Site Officer representative for Warrabinga NTCAC and NewCo for next week.

Regards,

Philippa Sokol
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Lance Syme [mailto:lance.syme@warrabinga.com.au]
Sent: Thursday, 29 March 2012 9:57 AM
To: Philippa Sokol
Cc: robyn.williams@warrabinga.com.au
Subject: Angus Place Fieldwork

Phillipa,

I have been forwarded an email you sent to Lyn Syme yesterday regarding fieldwork next week (attached). Could you please ensure that from now on any correspondence for **Warrabinga** is sent via info@warrabinga.com.au to ensure that it is receipted into our system and can be actioned promptly.

Can you please also confirm what the works will involve and provide copies of any maps showing the proposed survey areas, known Aboriginal site locations showing AHIMS #'s and details of the proposed development works that are being assessed as soon as possible but definitely prior to fieldworks being commenced.

Could you please also confirm what the invoicing arrangements are for tis work. Is it covered by the recently signed "Tender Agreement"?

Regards,

Lance Syme
Director
Warrabinga NTCAC

From: Internet Fax [mailto:members@dingofax.com]
Sent: Thursday, 29 March 2012 9:32 AM
To: accounts-freelance
Subject: FAX 1 Pages Ph 0263761599 ref_22697339

Fax message attached
Duration=45
CSID=
CLI=0263761599
Pages=1
Please Note:
You may automatically request for this fax message to be resent to you, by simply replying and typing the word "RESEND" as a single line in the body of this message.
Please note, that if the quality or error in the transmission continues to occur, then you will need to contact the original sender and ask them to resend the fax to you.

Deborah Farina

From: Philippa Sokol
Sent: Friday, 30 March 2012 5:47 PM
To: 'Mingaan Lithgow'
Subject: RE: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Thanks Helen,

Could you please confirm who your representing Site Officer will be.

Regards,

Philippa Sokol
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Mingaan Lithgow [mailto:mingaan.lithgow@ymail.com]
Sent: Wednesday, 28 March 2012 5:23 PM
To: Philippa Sokol
Subject: Re: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Hi Phillippa yes will have a site officer .
reguards
Helen

MINGAAN ABORIGINAL CORPORATION
ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

From: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
To: "mingaan.lithgow@ymail.com" <mingaan.lithgow@ymail.com>
Sent: Wednesday, 28 March 2012 3:16 PM
Subject: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Dear John/Helen,

Archaeological works are being conducted at Angus Place Colliery next Tuesday 03/04/2012 to Thursday 05/04/2012. A representative from Mingaan Aboriginal Corporation is invited to participate in the field work.

Meeting Place: Angus Place Colliery car park

Meeting Time: 7:45 am for 8:00 am start

PPE: Protective items should include long pants, long sleeve shirt, high visibility clothing or vest, protective boots, safety glasses, gloves hat, sunscreen etc.

Provisions: Please ensure your Site Officer brings adequate food and water supply to last a full day in the field.

Please be advised that only your Site Officer that has recently been inducted at Angus Place Colliery can participate in the field work.

Can you please let us know if you would have a Site Officer available for these works?

Best Regards,

RPS

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton, NSW,
Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Cheng Yen Loo
Sent: Friday, 20 January 2012 4:02 PM
To: Philippa Sokol
Subject: FW: Inductions

Cheng Yen Loo
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Lyn Syme [mailto:lsyme@aapt.net.au]
Sent: Wednesday, 4 January 2012 5:29 PM
To: Cheng Yen Loo
Subject: Inductions

Hi Cheng - Happy New Year.

Could you pls. advise urgently re induction arrangements for next Tuesday.

Regards
Lyn

Deborah Farina

From: Mingaan Lithgow [mingaan.lithgow@ymail.com]
Sent: Monday, 2 April 2012 3:49 PM
To: Philippa Sokol
Subject: Fw: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Hi Phlippa it wont be Elwin it will be Tim Lucas contact 0420455025.
Helen

MINGAAN ABORIGINAL CORPORATION
ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

----- Forwarded Message -----
From: Mingaan Lithgow <mingaan.lithgow@ymail.com>
To: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
Sent: Monday, 2 April 2012 7:23 AM
Subject: Re: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012
Hi Philippa at the moment it will be Elwin sorry I didnt back earlier but I have just turned on the Computer.

Reguards

Helen

MINGAAN ABORIGINAL CORPORATION
ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

From: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
To: Mingaan Lithgow <mingaan.lithgow@ymail.com>
Sent: Friday, 30 March 2012 5:46 PM
Subject: RE: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012
Thanks Helen,

Could you please confirm who your representing Site Officer will be.

Regards,

Philippa Sokol
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Mingaan Lithgow [mailto:mingaan.lithgow@ymail.com]
Sent: Wednesday, 28 March 2012 5:23 PM
To: Philippa Sokol
Subject: Re: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

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Helen

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ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

From: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
To: "mingaan.lithgow@ymail.com" <mingaan.lithgow@ymail.com>
Sent: Wednesday, 28 March 2012 3:16 PM
Subject: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012
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Can you please let us know if you would have a Site Officer available for these works?

Best Regards,

RPS

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton, NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Philippa Sokol
Sent: Monday, 2 April 2012 6:11 PM
To: David White
Subject: FW: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Philippa Sokol
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Mingaan Lithgow [mailto:mingaan.lithgow@ymail.com]
Sent: Monday, 2 April 2012 3:49 PM
To: Philippa Sokol
Subject: Fw: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Hi Phlippa it wont be Elwin it will be Tim Lucas contact 0420455025.
Helen

MINGAAN ABORIGINAL CORPORATION
ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

----- Forwarded Message -----
From: Mingaan Lithgow <mingaan.lithgow@ymail.com>
To: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
Sent: Monday, 2 April 2012 7:23 AM
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Helen

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ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

From: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
To: Mingaan Lithgow <mingaan.lithgow@ymail.com>

Sent: Friday, 30 March 2012 5:46 PM
Subject: RE: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012
Thanks Helen,

Could you please confirm who your representing Site Officer will be.

Regards,

Philippa Sokol
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |

From: Mingaan Lithgow [mailto:mingaan.lithgow@ymail.com]
Sent: Wednesday, 28 March 2012 5:23 PM
To: Philippa Sokol
Subject: Re: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Hi Phillippa yes will have a site officer .
reguards
Helen

MINGAAN ABORIGINAL CORPORATION
ABN: 83905372168
38 Tween Road, Lithgow 2790
Phone/fax 0263522473
mingaan.lithgow@ymail.com

From: Philippa Sokol <Philippa.Sokol@rpsgroup.com.au>
To: "mingaan.lithgow@ymail.com" <mingaan.lithgow@ymail.com>
Sent: Wednesday, 28 March 2012 3:16 PM
Subject: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012
Dear John/Helen,

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Please be advised that only your Site Officer that has recently been inducted at Angus Place Colliery can participate in the field work.

Can you please let us know if you would have a Site Officer available for these works?

Best Regards,

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton, NSW,
Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Cheng Yen Loo
Sent: Friday, 20 January 2012 1:13 PM
To: Philippa Sokol
Subject: FW: Fieldwork
Attachments: Certificate Currency Attachment12.pdf

Please add Gundungurra updated public liability doc to G drive

Ta

Cheng Yen Loo
Archaeologist
RPS
RPS Australia/SE Asia

T +61 2 4940 4200 | F +61 2 4961 6794 |
Please consider the environment before printing this email.

From: Sharon Brown [mailto:sharonbrown@gundungurra.org.au]
Sent: Wednesday, 11 January 2012 4:02 PM
To: Cheng Yen Loo
Subject: Re: Fieldwork

On Wed, Jan 11, 2012 at 11:48 AM, Cheng Yen Loo <chengyen.loo@rpsgroup.com.au> wrote:

Hi Sharon

Can you please give me a call on 49404200 so we can discuss this matter of the public liability. I tried calling your mobile but it just keeps going into message bank

Thanks

CY

PO Box 428, Hamilton,
NSW, Australia, 2303

Cheng Yen Loo
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
chengyen.loo@rpsgroup.com.au

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

made thereafter. If the addressee requires RPS to be responsible for the contents of this e-mail, RPS will be pleased to issue a signed hard copy of the document upon request.

Please consider the environment before printing this email.

--

Sharon Brown

Deborah Farina

From: Philippa Sokol
Sent: Friday, 13 April 2012 6:20 PM
To: 'lynsyme@bigpond.com'
Subject: Centennial Billing Details

Sorry Lyn, I'm having some difficulty locating those billing details for you. I'll keep looking and hopefully have them to you soon.

Best regards,

RPS

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton,
NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Philippa Sokol
Sent: Monday, 16 April 2012 3:21 PM
To: 'lynsyme@bigpond.com'
Subject: Invoice Details for Angus Place Work

Hi Lyn,

Sorry it has taken me this long to get this information for you. Please see the invoice details below.

Iain Hornshaw
Lidsdale House
Locked Bag 1002
Wallerawang NSW 2845

Best regards,

RPS

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton,
NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Philippa Sokol
Sent: Wednesday, 18 April 2012 10:18 AM
To: 'Mingaan Lithgow'
Cc: Cheng Yen Loo; David White
Subject: 111287 Centennial Invoice Details

Tracking:

Recipient	Delivery
'Mingaan Lithgow'	
Cheng Yen Loo	Delivered: 18/04/2012 10:18 AM
David White	Delivered: 18/04/2012 10:18 AM

Hi Helen,

Could you please send your invoices for the current Centennial Springvale works to the below address:

Iain Hornshaw
Lidsdale House
Locked Bag 1002
Wallerawang NSW 2845

Best regards,

RPS

Philippa Sokol
Archaeologist
RPS Australia Asia Pacific
PO Box 428, Hamilton, NSW, Australia, 2303
241 Denison St, Broadmeadow, NSW, 2292
Tel: +61 2 4940 4200
Fax: +61 2 4961 6794
Email: Philippa.Sokol@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Philippa Sokol
Sent: Wednesday, 18 April 2012 10:17 AM
To: 'info@warrabinga.com.au'
Subject: 111287 Centennial Invoice Details

Tracking:

Recipient	Delivery
'info@warrabinga.com.au'	
Cheng Yen Loo	Delivered: 18/04/2012 10:17 AM
David White	
david.white@rpsgroup.com.au	Delivered: 18/04/2012 10:17 AM

Hi Lance/ Wendy,

Could you please send your invoices for the current Centennial Springvale works to the below address:

Iain Hornshaw
Lidsdale House
Locked Bag 1002
Wallerawang NSW 2845

Best regards,

RPS

Philippa Sokol
Archaeologist
RPS Australia Asia Pacific
PO Box 428, Hamilton, NSW, Australia, 2303
241 Denison St, Broadmeadow, NSW, 2292
Tel: +61 2 4940 4200
Fax: +61 2 4961 6794
Email: Philippa.Sokol@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Philippa Sokol
Sent: Wednesday, 28 March 2012 3:08 PM
To: 'Lyn Syme'
Subject: 111285-1 Angus Place Field Work Tuesday 03/04/2012 - Thursday 05/04/2012

Importance: High

Dear Lance/Lyn and Wendy,

Archaeological works are being conducted at Angus Place Colliery next Tuesday 03/04/2012 to Thursday 05/04/2012. A representative from North East Wiradjuri Company and Warrabinga Native Title Claimants are invited to participate in the field work.

Meeting Place: Angus Place Colliery car park

Meeting Time: 7:45 am for 8:00 am start

PPE: Protective items should include long pants, long sleeve shirt, high visibility clothing or vest, protective boots, safety glasses, gloves hat, sunscreen etc.

Provisions: Please ensure your Site Officer brings adequate food and water supply to last a full day in the field.

Please be advised that only your Site Officer that has recently been inducted at Angus Place Colliery can participate in the field work.

Can you please let us know if you would have a Site Officer available for these works?

Best Regards,

RPS

Philippa Sokol
Archaeologist
Australia Asia Pacific
http://rpsgroup.com.au
Philippa.Sokol@rpsgroup.com.au

PO Box 428, Hamilton,
NSW, Australia, 2303

241 Denison St, Broadmeadow, NSW, 2292 | T +61 2 4940 4200 | F +61 2 4961 6794

Deborah Farina

From: Lance Syme [lance.syme@warrabinga.com.au]
Sent: Thursday, 29 March 2012 9:57 AM
To: Philippa Sokol
Cc: robyn.williams@warrabinga.com.au
Subject: Angus Place Fieldwork
Attachments: W_20120329093057-12p001.PDF

Phillipa,

I have been forwarded an email you sent to Lyn Syme yesterday regarding fieldwork next week (attached). Could you please ensure that from now on any correspondence for **Warrabinga** is sent via info@warrabinga.com.au to ensure that it is receipted into our system and can be actioned promptly.

Can you please also confirm what the works will involve and provide copies of any maps showing the proposed survey areas, known Aboriginal site locations showing AHIMS #'s and details of the proposed development works that are being assessed as soon as possible but definitely prior to fieldworks being commenced.

Could you please also confirm what the invoicing arrangements are for tis work. Is it covered by the recently signed "Tender Agreement"?

Regards,

Lance Syme
Director
Warrabinga NTCAC

From: Internet Fax [mailto:members@dingofax.com]
Sent: Thursday, 29 March 2012 9:32 AM
To: accounts-freelance
Subject: FAX 1 Pages Ph 0263761599 ref_22697339

Fax message attached
Duration=45
CSID=
CLI=0263761599
Pages=1
Please Note:
You may automatically request for this fax message to be resent to you, by simply replying and typing the word "RESEND" as a single line in the body of this message.
Please note, that if the quality or error in the transmission continues to occur, then you will need to contact the original sender and ask them to resend the fax to you.

RPS

Sydney Office
Level 9, 17 York Street, GPO Box 4401, Sydney NSW Australia 2001
T +61 2 8270 8300 F +61 2 8270 8399 E sydney@rpsgroup.com.au W rpsgroup.com.au

Our Ref: PR111285
Date: 23 July 2013

Attn: Tonilee Scott
Bathurst Local Aboriginal Land Council
PO Box 1500
Bathurst NSW 2795

Via: Mail

Dear Tonilee,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

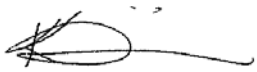
Please find enclosed a copy of the above mentioned report on CD for your review and comments.

If you have any comments you would like to have included into the final version of the report, please forward these to us by Tuesday 20 August 2013 via mail, fax or email to the below details:

Karyn Virgin
GPO Box 4401
Sydney NSW 2001
Fax: (02) 8270 8300
Email: karyn.virgin@rpsgroup.com.au

We trust this information is sufficient for your purposes; however should you require any further details or clarification, please do not hesitate to contact the RPS cultural heritage team.

Yours sincerely
RPS



Karyn Virgin
Cultural Heritage Consultant

RPS

Sydney Office
Level 9, 17 York Street, GPO Box 4401, Sydney NSW Australia 2001
T +61 2 8270 8300 F +61 2 8270 8399 E sydney@rpsgroup.com.au W rpsgroup.com.au

Our Ref: PR111285
Date: 23 July 2013

Attn: Sharon Brown
Gundungurra Tribal Council Aboriginal Corporation
14 Oak Street
Katoomba NSW 2780

Via: Mail

Dear Sharon,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

Please find enclosed a copy of the above mentioned report on CD for your review and comments.

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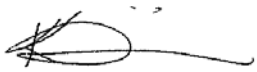

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Our Ref: PR111285
Date: 23 July 2013

Attn: Mervyn Trindall and Elsie Stockwell
Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants
14 Oak Street
Katoomba NSW 2780

Via: Mail

Dear Mervyn and Elsie,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

Please find enclosed a copy of the above mentioned report on CD for your review and comments.

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Our Ref: PR111285
Date: 23 July 2013

Attn: Helen Riley
Mingaan Aboriginal Corporation
38 Tweed Street
Lithgow NSW 2790

Via: Mail

Dear Helen,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

Please find enclosed a copy of the above mentioned report on CD for your review and comments.

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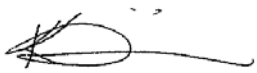

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Our Ref: PR111285
Date: 23 July 2013

Attn: Sharon Williams
Mooka Traditional Owners
PO Box 70
Cowra NSW 2794

Via: Mail

Dear Sharon,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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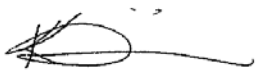

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Our Ref: PR111285
Date: 23 July 2013

Attn: Lyn Syme
North-East Wiradjuri
112-114 Main St
Ulan NSW 2850

Via: Mail

Dear Lyn,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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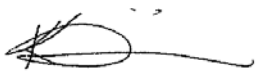

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Our Ref: PR111285
Date: 23 July 2013

Attn: Wendy Lewis
Warrabinga Native Title Claimants Aboriginal Corporation
525 Pheasants Nest Road
Pheasants Nest NSW 2780

Via: Mail

Dear Wendy,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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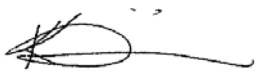

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Our Ref: PR111285
Date: 23 July 2013

Attn: Wendy Lewis
Warrabinga/Wiradjuri People Native Title Claimants
525 Pheasants Nest Road
Pheasants Nest NSW 2780

Via: Mail

Dear Wendy,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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Our Ref: PR111285
Date: 23 July 2013

Attn: Sharon/Helen Riley
Wiradjuri Council of Elders
PO Box 8565
Kooringal NSW 2650

Via: Mail

Dear Sharon and Helen,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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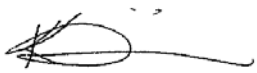

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Our Ref: PR111285
Date: 23 July 2013

Attn: Sharon Riley
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu Native Title Claimants
28 Tweed Street
Lithgow NSW 2790

Via: Mail

Dear Sharon,

RE: CULTURAL HERITAGE ASSESSMENT FOR THE ANGUS PLACE EXTENSION PROJECT

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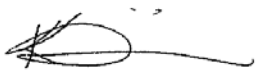

Karyn Virgin
Cultural Heritage Consultant

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:06 PM
To: 'Bathurst LALC'
Subject: Angus Place Extension
Attachments: 111285 Angus Place Cultural Heritage Assessment FINAL DRAFT 30.9.2013 _reduced.pdf

Hi Tonilee,

Please find attached amended Cultural Heritage Assessment for the above project for your comment. Could you please have any comments back to us by 5 pm on **Tuesday, 29 October 2013**.

Cheers,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
Level 9, 17 York Street, Sydney, NSW, Australia, 2000
GPO Box 4401, Sydney, NSW 2001.

Tel: +61 2 8270 8300
Fax: +61 2 8270 8399
Email: deborah.farina@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:04 PM
To: 'Sharon Brown'
Subject: Angus Place Extension Area
Attachments: 111285 Angus Place Cultural Heritage Assessment FINAL DRAFT 30.9.2013 _reduced.pdf

Hi Sharon,

Please find attached amended Cultural Heritage Assessment for your comment. Could you please have any comments back to us by no later than 5 pm on **Tuesday 29 October 2013.**

Cheers,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
Level 9, 17 York Street, Sydney, NSW, Australia, 2000
GPO Box 4401, Sydney, NSW 2001.

Tel: +61 2 8270 8300
Fax: +61 2 8270 8399
Email: deborah.farina@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:07 PM
To: 'Mingaan Lithgow'
Subject: Angus Place Extension `
Attachments: 111285 Angus Place Cultural Heritage Assessment FINAL DRAFT 30.9.2013 _reduced.pdf

Hi Helen,

Please find attached amended Cultural Heritage Assessment for the above project for your comment. Could you please forward any comments you may have on the attached report by 5 pm on **Tuesday, 29 October 2013**.

Cheers,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
Level 9, 17 York Street, Sydney, NSW, Australia, 2000
GPO Box 4401, Sydney, NSW 2001.

Tel: +61 2 8270 8300
Fax: +61 2 8270 8399
Email: deborah.farina@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:15 PM
To: 'lynsyme@bigpond.com'
Subject: Angus Place Extension
Attachments: 111285 Angus Place Cultural Heritage Assessment FINAL DRAFT 30.9.2013 _reduced.pdf

Hi Lyn,

Please find attached amended Cultural Heritage Assessment for your comment. Could you please forward any comments you may wish to make by 5 pm on **Tuesday, 29 October 2013**.

Regards,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
Level 9, 17 York Street, Sydney, NSW, Australia, 2000
GPO Box 4401, Sydney, NSW 2001.

Tel: +61 2 8270 8300
Fax: +61 2 8270 8399
Email: deborah.farina@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:18 PM
To: 'robyn.williams@warrabinga.com.au'
Subject: Angus Place Extension

Robyn Williams & Glenys Moore
Warrabinga Native Title Claimants Aboriginal Corporation &
Warrabinga/Wiradjuri People Native Title Claimants
C/- robyn.williams@warrabinga.com.au

Hi Robyn & Glenys,

Please find attached amended Cultural Heritage Assessment. Could you please forward any comments you may wish to make by 5 pm, **Tuesday, 29 October, 2013.**

Regards,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
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Tel: +61 2 8270 8300
Fax: +61 2 8270 8399
Email: deborah.farina@rpsgroup.com.au
www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:14 PM
To: 'Mingaan Lithgow'
Subject: Angus Place Extension - Attn Sharon Riley for Wiray-dyuraa Native Title claimants and Wiradjuri Council of Elders
Attachments: 111285 Angus Place Cultural Heritage Assessment FINAL DRAFT 30.9.2013 _reduced.pdf

Hi Sharon,

As the representative of Wiray-dyuraa Ngumbaay-dyil, Wiray-dyuraa Maying-gu and Wiradjuri Council of Elders, we attach for your attention amended Cultural Heritage Assessment for the above project. Could you please forward any comments you may wish to make on the report by 5 pm **Tuesday, 29 October 2013**.

Regards,

RPS

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Cultural Heritage Consultant
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www: http://rpsgroup.com.au

Deborah Farina

From: Deborah Farina
Sent: Tuesday, 29 October 2013 11:45 AM
To: 'robyn.williams@warrabinga.com.au'
Subject: FW: Angus Place Extension

Hi Robyn/Glenys,

As requested below, could you please forward any comments you may have on this report either today or tomorrow.

Regards,

RPS

Deborah Farina
Cultural Heritage Consultant
RPS Australia Asia Pacific
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From: Deborah Farina
Sent: Tuesday, 1 October 2013 12:18 PM
To: 'robyn.williams@warrabinga.com.au'
Subject: Angus Place Extension

Robyn Williams & Glenys Moore
Warrabinga Native Title Claimants Aboriginal Corporation &
Warrabinga/Wiradjuri People Native Title Claimants
C/- robyn.williams@warrabinga.com.au

Hi Robyn & Glenys,

Please find attached amended Cultural Heritage Assessment. Could you please forward any comments you may wish to make by 5 pm, **Tuesday, 29 October, 2013.**

Regards,

RPS

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RPS Australia Asia Pacific

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