



Centennial Coal



Cultural Heritage Impact Assessment

Springvale Mine Extension Project

Date: January, 2014





Cultural Heritage Impact Assessment

Springvale Mine Extension Project Lithgow Local Government Area

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Executive Summary

RPS has been engaged by Springvale Coal Pty Limited (Springvale Coal) to prepare a Cultural Heritage Impact Assessment (CHIA) as part of an Environment Impact Statement (EIS) for the Springvale Mine Extension Project (the Project). The Project Application Area is located at Springvale in the Lithgow Local Government Area (LGA) within the Springvale mining lease (**Figure 1**). The components of Springvale Mine's existing operations are an underground longwall mine, accessed via the Springvale pit top, and supporting surface infrastructure within the pit top area and on Newnes Plateau within the Newnes State Forest.

The Project will not significantly alter the nature of the existing operations at Springvale Mine. Springvale Coal proposes to extend its mining operations, using longwall mining techniques, to the east and the south-west of its existing workings at Springvale Mine. It is estimated that, if approved, the Project will extend the mine life by up to 13 years. To support the extension of the mining area, the following proposed activities and infrastructure will enable the successful implementation of the proposed Project

- Development of underground access headings and roadways;
- Secondary extraction by longwall mining;
- Process run of mine (ROM) coal through a crusher and screening plant at Springvale pit top;
- Install and/or operate ancillary surface infrastructure for ventilation, electricity, water, materials, supply, environmental monitoring and communications;
- Transfer of the operational management of coal processing and distribution infrastructure to Springvale Coal Services.

The objective of this CHIA is to identify all archaeological (Aboriginal and historical) sites (potential and actual) within the Project Application Area and to provide assessment to formulate mitigation and management strategies necessary for inclusion in an Environmental Impact Statement (EIS) in accordance with relevant regulatory requirements. It will also form the basis for a Cultural Heritage Management Plan (CHMP) for ongoing monitoring and management of cultural heritage within the Project Application Area in consultation with the registered Aboriginal Parties.

On 25 January 2012 four searches of the Aboriginal Heritage Information Management System (AHIMS) database were conducted over the entire 5811 hectare Project Application Area which revealed that a total of 110 previously recorded sites were in the Project Application Area and region. Of these, 30 were within the Project Application Area or within 50 m of its boundary (refer **Figure 3**) and as such these have been included in the overall sites count for assessment. 19 are inside the Project Application Area with the remaining 11 in the 50 metre boundary just outside it. The most common site types on the AHIMS register were artefact sites followed by shelters. Artefact sites included artefact scatters, isolated find sites and potential archaeological deposits (PADs). Shelters were also common and included rockshelters with features including art, deposit, and/or grinding grooves. Grinding grooves with wells were also found on flat lying sandstone outcrop. A number of modified trees with cultural scarring (scarred trees) were found in the Project Application Area, as well as two stone arrangements (see **Figure 3**).

Targeted site inspections were conducted from 31 January 2012 to 16 March 2012 within the Project Application Area. An additional field survey was also conducted on 30 May 2013. The survey area was divided into 36 survey units. The site inspection was largely conducted by two person teams walking transects across the 36 survey units, with the archaeological personnel varying being David White, Philippa Sokol, Ali Byrne, Rebecca Yit, Karyn Virgin and Cheng Yen Loo all of RPS.

Overall 34 Aboriginal sites have been identified in the Project Application Area or within 50 m of its boundary. Of these 30 were previously registered with AHIMS and four have been identified as a result of RPS surveys and visual inspections. A further breakdown shows that 22 sites are inside the Project Application Area and 12 are in the 50 metre buffer outside the Project Application Area boundary. With regard to these sites it has been ascertained that of the 34 sites, three are at potential risk of harm from mine subsidence. The remaining Aboriginal heritage sites are 'unlikely' or 'very unlikely' to be impacted by the extraction of the proposed longwalls. Therefore it has been assessed that three sites (see Table 16) will be managed in accordance with monitoring protocols set out in Section 9.3.

Subsidence impacts to sites are expected to be minimal based on the subsidence predictions (MSEC 2013). Specifically, sites #45-1-0005 and #45-1-0065, located beyond the extents of the proposed longwalls are predicted to experience subsidence levels of 50 mm and 25 mm respectively. Measurable conventional tilts, curvatures or strains are negligible therefore and are not expected to harm these two sites. Site #45-1-0002, overlying the proposed mining area is the most at risk of harm and may fracture if tensile strains are greater than 0.5 mm/m, which is not expected.

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

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*.

Recommendation 1

Site #45-1-0002, a grinding groove site, was originally recorded in 1977 and in the last 35 years the area has been used for recreational purposes. The predicted subsidence effects discussed in Section 9 for this site indicate that cracking in the sandstone bedrock may occur, which would destroy the grinding groove site. The recent survey was unable to find any evidence remaining of the two grinding grooves due to the extensive surface damage to the flat lying sandstone rocks and rubbish dumping that has also occurred. The site should be monitored in any case as set out in Section 9.3.1.

Recommendation 2

The three sites subject to predicted subsidence (**Table 17**) as a result of the proposed extension of Springvale Colliery must be monitored in accordance with 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

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 4

All relevant Springvale Coal 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.

Recommendations 5

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 & Abbreviations

Abbreviation	Meaning
ACHCR	Aboriginal Cultural Heritage Consultation Requirements
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
CHIA	Cultural Heritage Impact Assessment
CHMP	Cultural Heritage Management Plan
Cth	Commonwealth
DECCW	Department of Environment, Climate Change and Water
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning & Assessment Act 1999</i>
EPBC Act	<i>Environment Protection & Biodiversity Conservation Act 1999</i>
ESA	Environmental Study Area
Extension Area	Location of Proposed Longwalls 416 to 432 and 501 to 503 in the Project Application Area
GDA	Geodetic Datum Australia
GIS	Geographic Information System
Ha	Hectares
LALC	Local Aboriginal Land Council
LGA	Local Government Area
LEP	Local Environment Plan
Mtpa	Million tonnes per annum
NPW Act	<i>National Parks & Wildlife Act 1974</i>
NPWS	National Parks and Wildlife Service
OEH	Office of Environment & Heritage
PAD	Potential Archaeological Deposit
SEWPAC	Commonwealth Department of Sustainability, Environmental, Water, Population and Communities
SHR	State Heritage Register

1.0 Introduction

RPS has been engaged by Springvale Coal Pty Limited (Springvale Coal) to prepare a Cultural Heritage Impact Assessment (CHIA) for an Environmental Impact Statement (EIS) to be prepared for the proposed extension of Springvale Mine, the Springvale Mine Extension Project (the Project).

This report has considered the environmental and archaeological context of the Project Application Area, and developed a predictive model of archaeological sites. It also reports on the results of an archaeological survey of the Project Application Area, provides an assessment of archaeological significance for Aboriginal heritage, as well as providing management recommendations which address potential impacts of the proposed works. This report has been prepared in accordance with the relevant legislation and regulations, including the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) and the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011).

The objective of this 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). It will also form the basis for a CHMP for ongoing monitoring and management of cultural heritage within the Project Application Area in consultation with the registered Aboriginal Parties.

1.1 The Project Application Area

The Project Application Area is located at Springvale in the Lithgow Local Government Area (LGA) and broadly follows the boundary of the existing Springvale mining leases. The Project Application Area is located almost entirely within the Newnes State Forest; with the exception of a small area in the west which encompasses the land surrounding the current Springvale pit top (Refer **Figure 1** and **Figure 2**). The Project Application Area measures approximately 5811 hectares. The Extension Area is the location of the Proposed Longwalls LW416 to LW432 and LW501 to LW503 in the Project Application Area.

1.2 Project Description

Springvale Mine proposes to extend longwall mining beyond the current longwall series to the east in line with the current mine plan (refer **Figure 2**), to the southeast and the southwest of the existing workings. To this end, Springvale Mine is seeking approval from both the State and Commonwealth Governments for the project. Specifically, Springvale Mine intends to pursue the State Significant Development pathway as per Division 4.1 of Part of the *Environmental Planning & Assessment Act 1979* (NSW) and referred the project to the Federal Department of Sustainability, Environmental, Water, Population and Communities (SEWPAC) to pursue approval under the *Environment Protection & Biodiversity Conservation Act 1999*. In addition to establishing legislation relating to the protection for the environment, the EPBC Act also established the National Heritage List administered by SEWPAC. For further information regarding the National Heritage List, please see Section 5.3.1.

It is estimated that, if approved, the project will extend the mine life by up to 13 years. To support the extension, additional dewatering bores, ventilation facility upgrade and minor amendments to the existing configuration of the pit top is necessary. The following proposed activities and infrastructure will enable the successful implementation of the proposed Project. This proposed infrastructure will be in addition to the ongoing use of existing infrastructure situated at both the Springvale pit top site and the Newnes State Forest:

- continue to extract up to 4.5 million tonnes per annum (Mtpa) of ROM coal from the Lithgow Seam underlying the Project Application Area;

- develop underground access headings and roadways from the current mining area to the east to allow access to the proposed mining areas;
- undertake secondary extraction by retreat longwall mining technique for the proposed longwalls LW416 to LW432 and LW501 to LW503;
- continue to use the existing ancillary surface facilities at the Springvale pit top;
- continue to manage the handling of ROM coal through a crusher and screening plant at the Springvale pit top, and the subsequent loading of the coal onto the existing overland conveyor system for despatch to offsite locations;
- continue to operate and maintain the existing ancillary surface infrastructure for ventilation, electricity, water, materials supply, and communications at the Springvale pit top and on Newnes Plateau;
- install and operate two additional dewatering bore facilities (Bores 9 and 10) on Newnes Plateau and the associated power and pipeline infrastructure, and upgrade the existing and construct two new sections of access tracks to Bores 9 and 10 facilities;
- construct a downcast ventilation borehole at the Bore 10 facility location;
- establish a services borehole area;
- upgrade the existing Springvale Delta Water Transfer Scheme (SDWTS) comprising construction of new sections of the trenched pipelines to increase the water delivery capacity of SDWTS from the existing 30 ML/day to up to 50 ML/day;
- manage mine inflows using a combination of direct water transfer to the Wallerawang Power Station, via the SDWTS, and discharge through Angus Place Colliery's licensed discharge point LDP001 and Springvale Colliery's LDP009;
- continue to undertake existing and initiate new environmental monitoring programs;
- continue to operate 24 hours per day seven days per week;
- continue to provide employment to a full time workforce of up to 310 persons;
- progressively rehabilitate disturbed areas at infrastructure sites no longer required for mining operations;
- undertake life-of-mine rehabilitation at the Springvale pit top and the Newnes Plateau infrastructure disturbance areas to create final landforms commensurate with the surrounding areas and the relevant zonings of the respective areas;
- transfer the operational management of coal processing and distribution infrastructure to the proposed Centennial Western Coal Services Project.

Surface facilities and infrastructure will include;

Mine

To continue operations at Springvale Mine, the Project will develop and extract longwall blocks in the existing northern, southern and southwest lease areas. Longwall mining is to continue sequentially from LW416 to LW423 as approved in DA11/92. Panels LW424 to LW432 and LW501 to LW503 are to be extracted following the completion of the northern area. Annual extraction is not to change from the approved threshold of 4.5 Mtpa. Based upon resource modelling, the life-of-mine will be extended by approximately 13 years. The dimensions of the Project's longwall panels have been reduced with the void widths being 261 m, less than the 315 m void widths for LW410 to LW415, those previously extracted at Springvale Mine. The longwall panel dimensions have been developed based on experience from Springvale Mine's existing operations in addition to numerical subsidence prediction and impact assessment models. The Project mine design has considered sensitive surface features such as swamps, cliff-lines, significant rock features, watercourses and sites of cultural significance. Through conservative mine planning, Springvale Mine has sought to avoid or reduce impacts upon these sensitive surface features situated on Newnes Plateau.

Development of new roadways will be undertaken as necessary to active mining areas to enable access to LW416 to LW432.

Dewatering and Ventilation Facilities

Two new dewatering bore facilities (Bore 9 and Bore 10) are required for the management of mine water inflows to meet underground safety and operational requirements. Bore 9 is to become operational following the decommissioning of Bore 8 at the end of 2016. Bore 10 is to become operational when mining commences within the southern longwall block of LW424 to LW432. However, the timing of the construction, operation and rehabilitation of Bore 9 and Bore 10 would be staged and contingent upon the progression of underground workings. Bore 9 and Bore 10 are to be located within Environmental Study Areas (ESA), which have been established based upon mine design requirements.

Bore 9 and Bore 10 will be founded on concrete pads and will be equipped with four submersible pumps, a cuttings sump and ancillary surface electrical control equipment. Bore 9 and Bore 10 will have their own self managed water systems consisting of sediment and erosion fencing. The construction footprint of each bore facility will be approximately 1 hectare and have a 20 m Asset Protection Zone around the constructed footprint. Each site will be fenced with a lockable gate for public safety and security with construction and rehabilitation staged as mining progresses.

All dewatering boreholes will deliver water into the SDWTS.

Duplication of Springvale Delta Water Transfer Scheme

As a result of the Project longwall operations, mine water inflows will increase. To allow for sufficient capacity of the water management system at both Springvale Mine and Angus Place Colliery and to cater for the additional throughput of groundwater predicted over the life of the Project, a section of the existing SDWTS will be duplicated.

Mine Services Borehole Compound

An underground logistics review was undertaken for Springvale Mine, which identified that additional mine services boreholes would be required for the Project. These are to be contained within the mine services borehole compound. The construction of this facility will ultimately reduce the number of underground vehicle movements and associated diesel use. Underground working conditions will be improved by reducing the number of delivery vehicle movements.

Services

The Project will upgrade and extend the existing access tracks from Sunnyside Ridge Road to Bore 9 and Bore 10, which would occur prior to construction of these borehole facilities.

The power lines and the water pipeline duplication would be buried within a 10 m wide infrastructure corridor to be established adjacent to the existing access tracks. The infrastructure corridor will require vegetation clearance and temporarily increasing the width of access tracks to allow for the movements of large equipment during construction. Following the trenching of the pipelines and power lines, the infrastructure corridor will be rehabilitated to create approximately 5 m wide access tracks to the respective drill pad areas to allow vehicular access during operations.

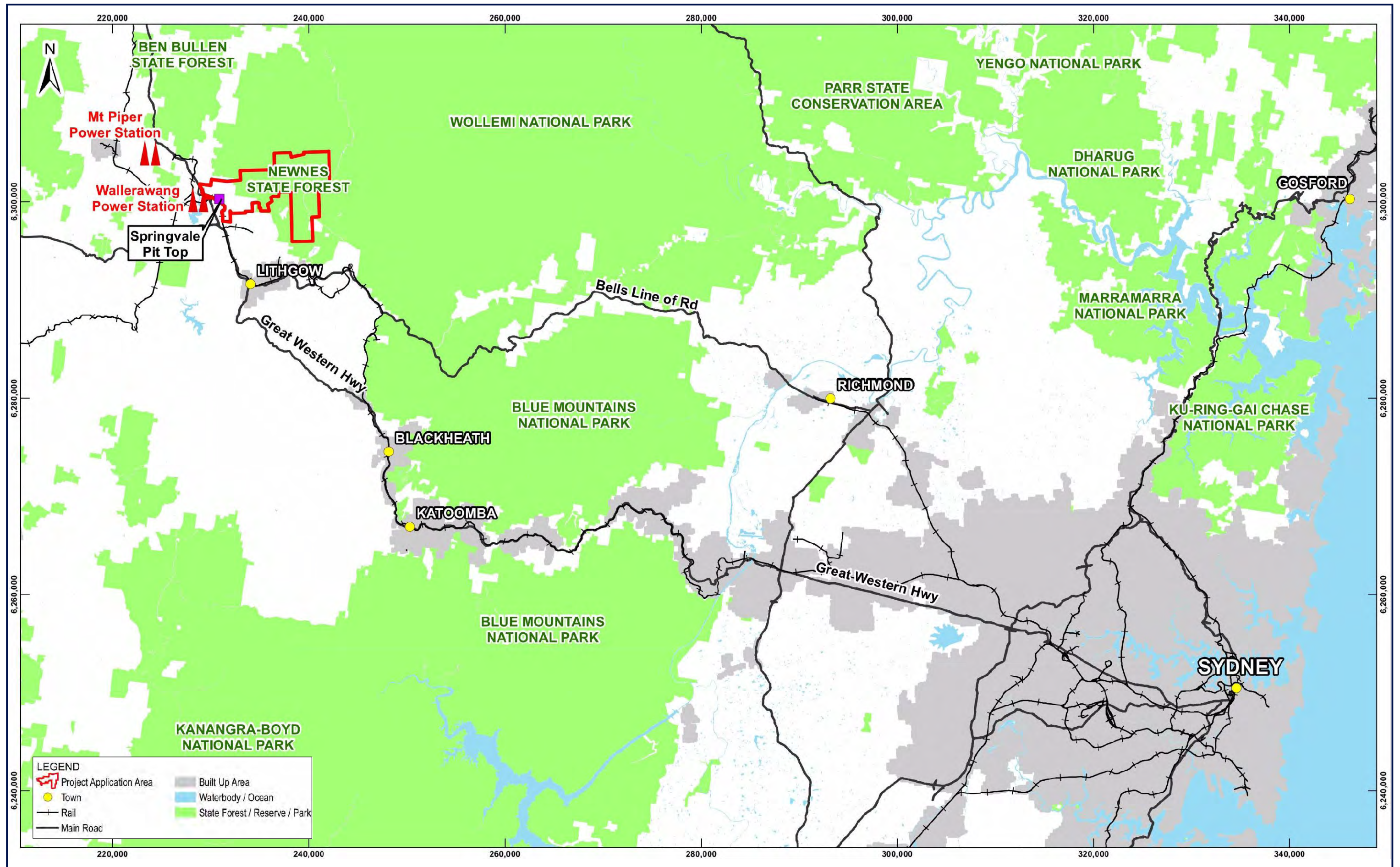
Access

Access to Newnes Plateau will not change as a result of the Project.

Rehabilitation

Progressive rehabilitation of Springvale Mine is undertaken as required.

New infrastructure component of the Project (dewatering bore facilities, ventilation facilities, SDWTS, services and access) will require rehabilitation and decommissioning as a result of surface disturbance during construction. On completion of mining activities at Springvale Mine, the pit top area infrastructure of office buildings, workshops, water dams, settling ponds, substations and parking areas will be decommissioned and rehabilitated. It is anticipated that the final land use at the pit top will be in accordance with the existing zoning of the site.



TITLE: FIGURE 1: LOCATION MAP

LOCATION: SPRINGVALE

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 29/05/2013
PURPOSE: HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111287 Springvale- Extension\10. Drafting
VERSION (PLAN BY): A A3 (DR-NW)

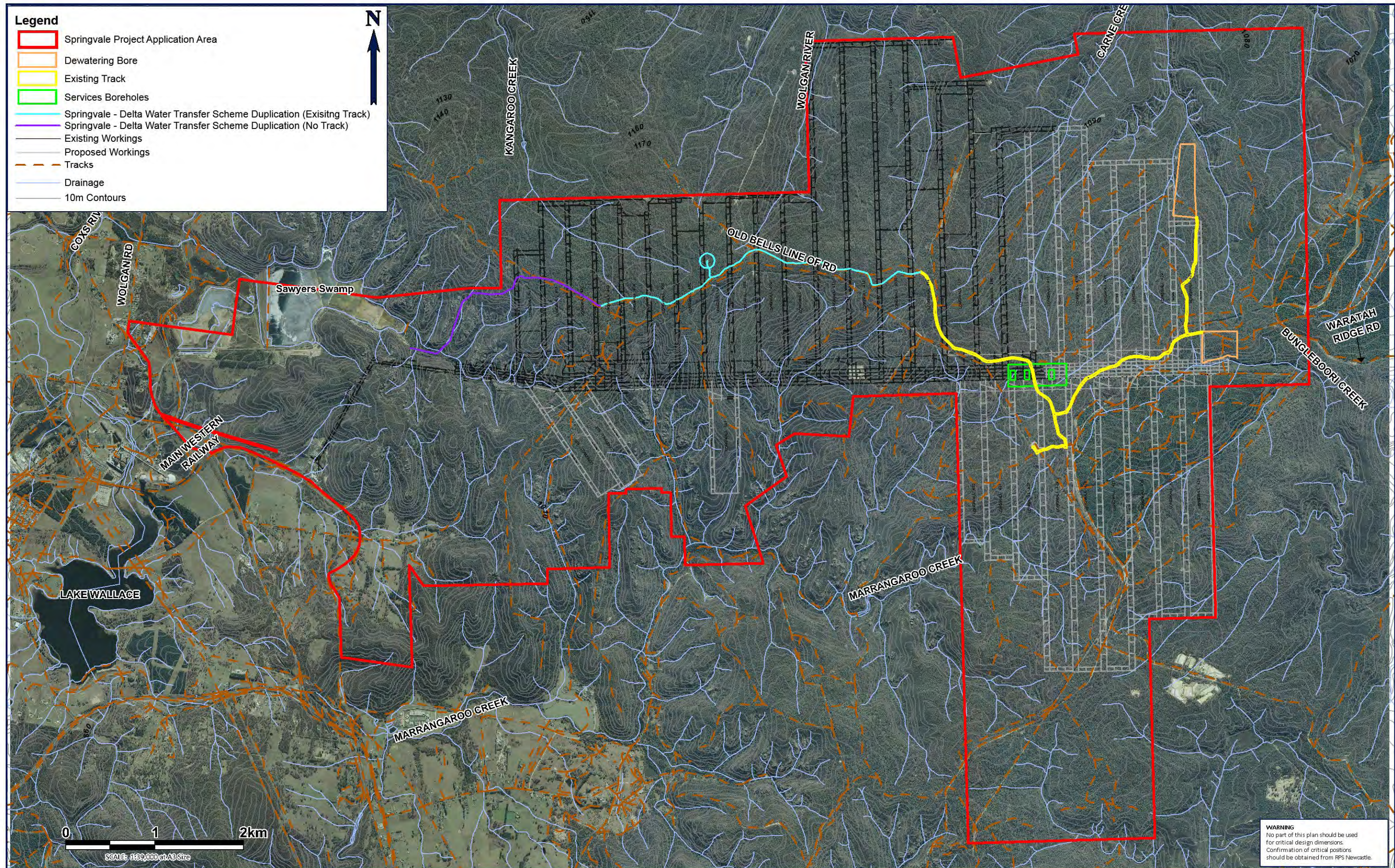
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CLIENT: CENTENNIAL COAL
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TITLE: FIGURE 2: PROJECT APPLICATION AREA LOCATION: SPRINGVALE

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 3/10/2013
PURPOSE: HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111287 Springvale- Extension\10. Drafting
VERSION (PLAN BY): C A3 (DR-NW)

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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 and 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 2010); 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 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 and Infrastructure, after which the Planning Assessment Commission 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 (LALC). The land able to be claimed by Aboriginal Land Councils on behalf of Aboriginal people is certain Crown land that (s36):

- (i) Is able to be lawfully sold, leased, reserved or dedicated;
- (ii) Is not lawfully used or occupied;
- (iii) Will not, or not likely, in the opinion of the Crown Lands minister, be needed for residential purposes;
- (iv) Will not, or not likely, be needed for public purposes;
- (v) Does not comprise land under determination by a claim for native title;
- (vi) 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**.

2.2 Authorship and Acknowledgements

This report was prepared by Deborah Farina, Archaeologist, with assistance from Natalie Wood, GIS/Draftsperson and reviewed by Senior Archaeologist Gillian Goode and Tessa Boer-Mah, all from RPS. Fieldwork was conducted by David White, Philippa Sokol, Ali Byrne, Rebecca Yit and Cheng Yen Loo, all archaeologists at RPS.

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	Springvale Coal Pty Ltd
Jack Pennell, Gail Ratcliffe, Glenys Moore	Warrabinga Native Title Claimants Aboriginal Corporation
Chantel Peters-Chapman, Tonilee Scott	Bathurst LALC
Elwin Wolfenden	Mingaan Aboriginal Corporation
Tim Lucas	Native Title Bathurst
Brendan Mingaan	Native Title Lithgow
Toni Wilcock, Lyn Syme, Donna Whillock	North East Wiradjuri
Jason Brown, Sharon Brown	Gundungurra Tribal Council Aboriginal Corporation
Sharon Riley	Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu

3.0 Aboriginal Consultation

3.1 Aboriginal Consultation

The purpose of Aboriginal community consultation is to provide an opportunity for the relevant Aboriginal stakeholders to have input into the heritage management process. OEH encourages consultation with Aboriginal people for all matters relating to Aboriginal heritage, however, some developments require specific Aboriginal community consultation.

In the case of this Project, the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs) (DECCW 2010) 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 and Angus Place Mine Extension Projects, Neubecks Coal Project, Clarence Colliery REA VI Project, Lidsdale Coal Loader Project, Airly Mine Extension Project and Western Coal Services Project. 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 of Registration
Dhuuluu Yala Aboriginal Corporation	-	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
Gundungurra Tribal Council Aboriginal Corporation	-	8/11/2011
Gundungurra Aboriginal Heritage Association Inc.	-	8/11/2011
Mingaan Aboriginal Corporation	Sharon Riley	8/11/2011
Hawkesbury-Nepean Catchment Management Authority (Aboriginal Reference Group)	-	8/11/2011

Organisation	Name of Representative	Date of Registration
Bathurst Local Aboriginal Land Council	Tonilee Scott	8/11/2011
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	8/11/2011
North-East Wiradjuri	Lyn Syme	8/11/2011
Mooka Traditional Owners	Neville Williams	8/11/2011
Warrabinga/Wiradjuri people represented by Wendy Lewis, Maria Agnew, Martin de Launey	-	8/11/2011
Gundungurra Tribal Council Aboriginal Corporation represented by Mervyn Trindall, Elsie Stockwell and Pamela Stockwell	-	8/11/2011
Wiray-dyuraa Ngambaay-dyil and the Wiray-dyuraa Maying-gu represented by Mr William (Bill) Allen, Mr Joe Bugg, Mr Stephen Riley and Mr John Brasher	-	8/11/2011

As a result of the invitation for expression of interest letters and the advertisement ten Aboriginal stakeholders registered their interest in the Project (**Table 3** and **Appendix 3**).

Table 3 Aboriginal groups who registered their interest

Organisation	Name of Representative	Date of Registration
Warrabinga Native Title Claimants Aboriginal Corporation	Wendy Lewis	16/11/2011
North East Wiradjuri Company Ltd.	Lyn Syme	16/11/2011
Bathurst Local Aboriginal Land Council	Tonilee Scott	16/11/2011
Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown	18/11/2011
Mingaan Aboriginal Corporation	Helen Riley	18/11/2011
Gundungurra Tribal Council Aboriginal Corporation Native Title Claimants	-	21/11/2011
Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu	-	21/11/2011
Mooka Traditional Owners	Sharon Williams	21/11/2011
Wiradjuri Council of Elders	Sharon/Helen Riley	21/11/2011
Warrabinga/Wiradjuri People Native Title Claimants	-	22/11/2011

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 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

Organisation	Name of Representative	Date of Reply for Methodology due 23 December 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 and Answers" session in order to allow the registered Aboriginal parties to clarify any heritage, methodological or timing issues regarding the projects. The following representatives (**Table 5**) attended the information session on 7 December 2011.

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 Company Ltd.	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, five registered Aboriginal parties were invited to participate in the survey which was to be undertaken from 31 January 2012 to 9 March, 2012. However, on 31 January 2012 it came to the attention of both the Applicant and RPS that an altercation had taken place earlier that morning between two of the Aboriginal representatives. The Applicant elected to immediately suspend the survey from 1 February 2012, and owing to the tensions between some of the registered Aboriginal parties, did not invite any registered Aboriginal parties to take part in the survey at that time.

However, following the execution of a Memorandum of Understanding by all parties, which included specific conflict resolution measures, Springvale Mine invited the following stakeholders (**Table 6**) to inspect the Project Application Area with RPS archaeologists David White and Cheng Yen Loo commencing on 18 April 2012. The Applicant placed no timeframe on this field work in order for it to be completed. The Aboriginal Groups spent as much time as they felt was necessary to cover their areas of interest in the Project Application Area. On 27 April 2012 it was collectively decided that enough survey coverage had been obtained and there was no need to continue with further fieldwork.

In May 2013, the Aboriginal Groups (**Table 6**) were again contacted to assist with surveying the proposed SDWTS duplication corridor that was not fully covered during the previous fieldwork. Consequently, on 30 May 2013, Elwin Wolfenden, Patsy Wolfenden, Gail Ratcliffe, Chantel Peters and Donna Whillock participated in a site survey of the proposed duplication corridor. Nathan Brown who had indicated he would participate on the day was absent.

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

Organisation	Name of Representative
Gundungurra Tribal Council Aboriginal Corporation	Thomas Brown, Nathan Brown
Warrabinga Native Title Claimants Aboriginal Corporation	Jack Pennell, Donna Whillock
North East Wiradjuri Company Ltd.	Toni Whillock, Gail Ratcliffe
Mingaan Aboriginal Corporation	Tim Lucas, Elwyn Wolfenden
Bathurst Land Council	Chantel Peters
Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu	Sharon Riley, Patsy Wolfenden

A copy of the draft report was sent to the Aboriginal stakeholders listed in **Table 7** on 7 June 2013, providing an opportunity for them to comment on the significance of the Aboriginal sites identified.

Table 7 Aboriginal stakeholders who received the draft report

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

Comments from eight of the Aboriginal community stakeholder groups on the draft report were due on 10 July 2013. Comments from the remaining two Aboriginal community stakeholder groups were due on 24 July 2013. None of the Aboriginal stakeholder groups listed in **Table 7** responded with written comments on the draft report by these due dates.

However, telephone calls were made to each of the Aboriginal stakeholder groups listed in **Table 7** 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.

The final version of the report was sent to all of the Aboriginal stakeholders listed in **Table 7** on 8 August 2013, except for Warrabinga/Wiradjuri People Native Title Claimants as there are no contact details available for this organisation.

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. The reporting of 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 and therefore understanding the local geology can provide important information regarding resources in a 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, Torrence 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 et al. 1966)

The relevant soil landscapes of the Project Application Area are the Lithgow and Cullen Bullen soil landscapes. The Project Application Area is situated on the Lithgow soil landscape, described as having moderately deep (<20cm) soils, comprising red podzolic soils, yellow podzolic soils and yellow leached earths on upper slopes and well drained areas. Moderately deep to deep (<170 cm) solods/yellow solodic soils are found on lower slopes and in areas of poor drainage. Immediately adjacent is the Cullen Bullen soil landscape comprising shallow to moderately deep (<100 cm) yellow podzolic soils and yellow earths on crests, moderately deep (<100 cm) yellow podzolic soils, soloths and yellow leached earths on upper and mid slopes, and moderately deep to deep (50-100 cm) yellow solodic soils and yellow podzolic soils on lower slopes near and along narrow drainage lines. Shallow yellow earths and lithosols are associated with low scarps (King 1992:29).

Due to the steep slopes and rainfall topsoils in the area may be affected by sheet erosion which washes the A horizon soils down slope exposing the clayey B horizon in many of the ridgelines and upper slope areas. Thus where B Horizon soils are exposed, they are generally severely eroded and have been affected by water runoff and sheet wash erosion. The presence of potential stratified archaeological material is possible as A horizon soils occur in undisturbed landscapes but can also be redeposited on a previously eroded B horizon. Artefacts may occur *in situ* within A horizon soils or atop the exposed B Horizon.

4.2 Topography and Hydrology

The Project Application Area is dominated by high ridges and sandstone plateau landforms raising approximately 200m above the valley floor to elevations of 1175m AHD (Australian Height Datum). Steep sandstone escarpments occur through much of the area. Wide valley floors and more gently sloped areas occur in the west and eastern boundaries of the Project Application Area and are generally at elevations of 900m-1060m AHD (Department of Lands 2006; Department of Lands 2006).

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 groups moving through 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 and Kangaroo Creek in the north, Carne Creek and its many tributaries in the north east; in the north west is Sawyers Swamp Creek which is fed by a number of small tributaries, in the south and south west is Marrangaroo Creek and its numerous tributaries, in the east is Bungleboori Creek, Paddys Creek and a number of small tributaries of Farmers Creek (Department of Lands 2006; Department of Lands 2006) (**Figure 3**).

4.3 Climate

Approximately 18,000 years ago, 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 ago (Lambeck, Yokoyama et al. 2002). Between 6,000 and 1,500 years ago there was a slight decrease in average temperature, which then stabilised about 1,000 years ago and has remained, since then, 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 mm, and the driest month is July, with an average monthly rainfall of 44.5 mm (Bureau of Meteorology 2012).

4.4 Flora and Fauna

The Blue Mountains are generally populated by the Sydney Montane Dry Sclerophyll Forest which is characterised by a range of plant communities which may have been present during past Aboriginal occupation of the area. Typical trees include the Blue Mountain ash and Sydney peppermint (Keith 2006:161). The ridges are dominated by hard leaved scribbly gum and silvertop ash (Keith 2006:161). The Project Application Area also contains shrubs such as Dorothy's wattle and sunshine wattle and herbs such as blue flax lily (Keith 2006:161). Wet heath and swamps may have also attracted Aboriginal occupation to the area. Other plants may have included geebung, which is known to have been used by Aboriginal people for food, medicine and strengthening fishing line (Stewart and Percival 1997:42)

Fauna species encountered within the Project Application Area include a number of macropods, such as Swamp Wallaby and Red-necked Wallaby, arboreal mammals, Greater Glider (Keith 2006:161) and a moderate diversity of open forest birds including those characterising elevated habitats, being Grey

Currawongs, Red-browed Treecreepers, Scarlet Robins and Flame Robins. The Gang-Gang cockatoo has also been identified in the vicinity of the Project Application Area.

The diversity of flora and fauna species may have provided seasonal food resources for small Aboriginal groups or communities moving throughout the region.

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. 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 are have not been disturbed. Additionally, there are areas of intact vegetation and these areas may possibly contain scarred trees. In addition, the Illawarra Coal Measures in the area are known to produce chert, a favourable raw material for tool production. The geology underlying the Project Application Area would have provided raw materials suitable for the manufacture of stone tools. An overview of the environmental context of the Project Application Area indicates that there are rich food and raw material sources available. It would, therefore, have been 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 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, who 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, which were described as:

"...the miners' homes in this spot being perhaps less comfortable than picturesque. Their habitations are for the most part, huts of mud of 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 Second World War, 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

In 1838, 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. 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 and 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 lowest 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 using a large number of workers mostly employed on contract or piecework arrangements. Miners normally would walk, ride a horse or push bike 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 1600 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 and 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 oil works were re-opened, but this was short lived; the town declined again following the cessation of mining operations in 1923, and by 1926 most of the mine workers and their families had left the area. The town's telephone services were removed in 1928, and the train service was discontinued in 1926 (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 within a 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 also provides additional information for the interpretation of archaeological sites. A glossary of Aboriginal site types is provided 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 et al. 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 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 of 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, such as the skins from Possum, Kangaroo and probably Koala 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 Aborigines 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 'Aborigines' being in residence. Aboriginal presence was noted by Blaxland in 1814 in the valleys where he heard people calling (Gollan 1987). However, an earlier expedition by Barrallier in 1802, who met and observed Aborigines 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. This first contact record and contemporary opinion suggests that the identity of the mountain people adjacent to the Cumberland Plain were the Dharug (Gollan 1987).

Three Frenchmen; Quoy, Gaudichaud and Pellion travelled across the Blue Mountains to Bathurst where they encountered Aborigines in the Springwood area. Pellion made drawings of the natives, 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 native man was peacefully disposed towards the explorers (Mid Mountains Historical Society 2007).

Windradyne (c.1800-1829) was an Aboriginal resistance leader, whom was 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 European counterparts. 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. When 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 with the settlers, many of the Wiradjuri surrendered to the British, but Windradyne was able to elude capture, and later 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

The majority of the archaeological surveys and excavations in the Blue Mountains region have been in conjunction with environmental assessments for the coal mines, installation of power lines, telecommunications and state forest works. Based on the information available, a number of trends in site location and patterning are evident.

A regional based study undertaken by Gollan (1987) conducted archaeological investigations in the Newnes Plateau region in order to provide a comprehensive assessment of the archaeological resources of the plateau and regional and local significance. This report was undertaken for the NPWS.

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 the fringes of swamps because lithic material and food resources were available in these areas (Gollan 1987:118). 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 predominant in areas of the plateau where suitable rock types such as pagodas and inter-bedded sandstone and claystone rock outcrops were found (ibid).

Gollan (1987:130) 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 1000m 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.

6.4 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)

A search was undertaken of the OEH Aboriginal Heritage Information Management System (AHIMS) on 25 January 2012 over the Project Application Area. A series of four AHIMS searches were conducted over the Project Application Area and surrounding region, identifying a total of 110 previously recorded sites within these parameters (**Table 8**; **Figure 3**). Of these sites, 30 were located either in the Project Application Area or within 50 m outside it (**Table 9** and **Table 10**). The 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 8 AHIMS site types in Project Application Area and surrounding region

Sites	Quantity	Percent
Artefact scatter	49	44%
Shelter with deposit	20	18%
Shelter with art	17	15%
Potential Archaeological Deposit (PAD)	7	6%
Isolated find	3	3%
Scarred trees	3	3%
Grinding groove; shelter with deposit	2	2%
Grinding groove; shelter with art	2	2%
Grinding grooves	2	2%
Stone arrangement	2	2%
Burial	1	1%
Aboriginal ceremony and Dreaming	1	1%
Not a Site	1	1%
Total	110	100%

Table 9 AHIMS site types inside Project Application Area

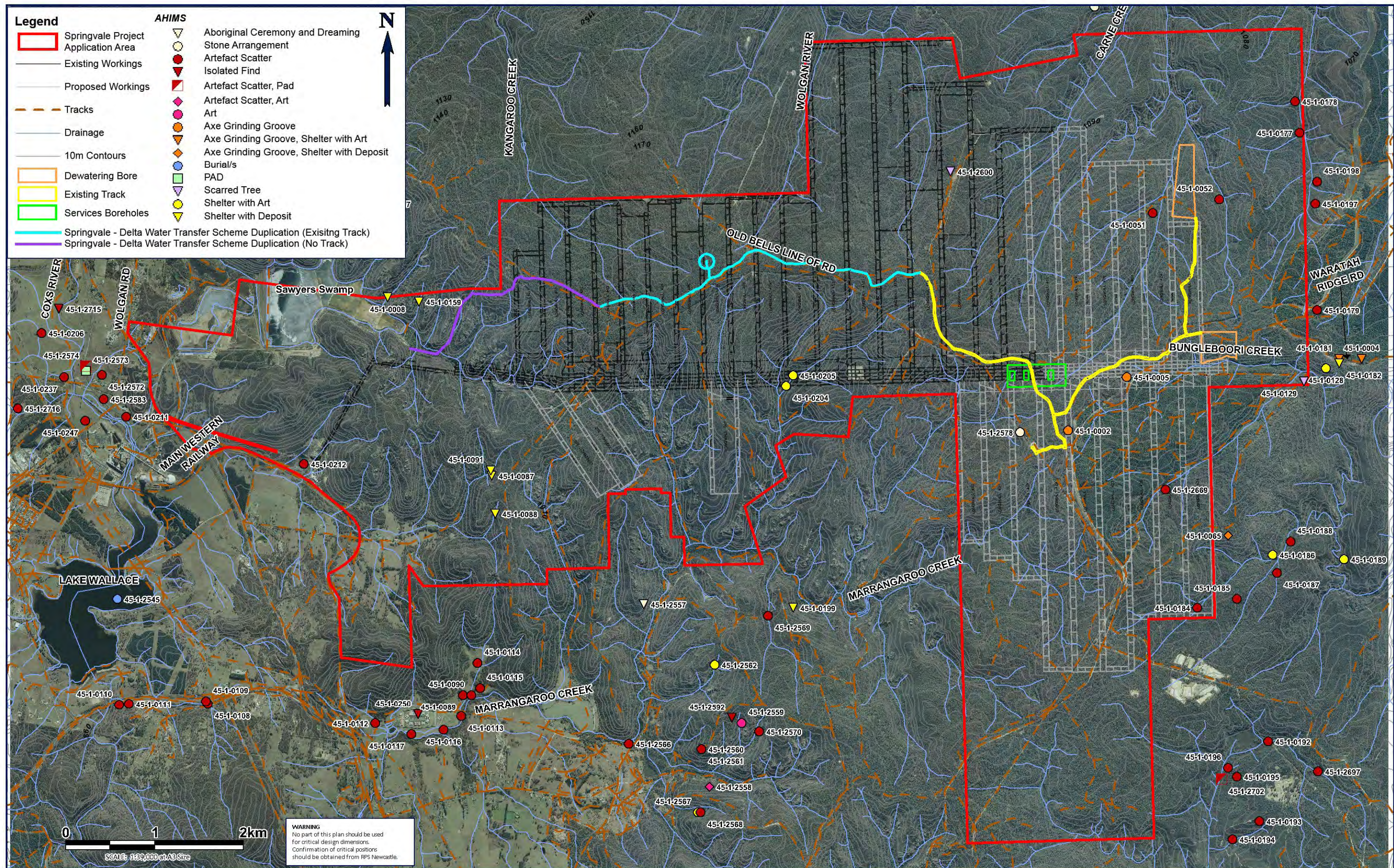
Sites	Quantity	Percent
Artefact scatter	7	36.8%
Shelters with deposit	5	26.3%
Shelter with art	2	10.5%
Grinding grooves	2	10.5%
Scarred trees	2	10.5%
Stone arrangements	1	5.3%
TOTALS	19	100%

Of the 19 registered sites in the Project Application Area, the most common site types were artefact sites which included artefact scatters (7); shelters were also common and included shelters with art (2), shelters with deposit (5), grinding grooves (2), scarred trees (2), and stone arrangements (1). The remaining 11 sites located outside the Project Application Area, but within 50 m of the boundary, are listed in **Table 10**.

Table 10 AHIMS Sites in the 50 metre buffer zone

Sites	Quantity	Percent
Artefact scatter	5	45.45%
Shelters with deposit	1	9.09%
Shelter with art	1	9.09%
Shelter with deposit and grinding groove	1	9.09%
Shelter with art and grinding grooves	1	9.09%
Scarred trees	1	9.09%
Stone arrangements	1	9.09%
TOTALS	11	100%

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



TITLE: FIGURE 3: PROJECT APPLICATION AREA WITH AHIMS LOCATION: SPRINGVALE

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 3/10/2013
PURPOSE: HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111287 Springvale- Extension\10. Drafting
VERSION (PLAN BY): C A3 (DR-NW)

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6.4.2 Local Archaeological Studies

Gaul, post 1980. Prehistoric Archaeology 391-I, 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 m tape, string level and a camera.

Site A – Blackfellows Hand Shelter was located approximately 1 km north east from the start of Mayingu Marragu Trail (Blackfellows Hand Track). It comprised a large open shelter with the main section being 60 m long. The shelter contained an occupational deposit that extended for about 40 m. 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 m north east of Site A, along Blackfellows Hand Track. The area contained a 40m long shelter with a low overhanging roof. The floor contained a deposit approximately 50cm – 1m 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 m further along the track than Shelter B, further east, on the north side of the road. The shelter was 30 m 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, Lithgow NSW.

A field survey was undertaken from 24 January to 29 January 1983 commissioned by Longworth and McKenzie Pty Limited. The survey was conducted on the Newnes Plateau approximately nine kilometres north of Lithgow in the Newnes State Forest. The survey aimed to locate and establish archaeological significance of Aboriginal relics and provide recommendations regarding protective measures for Aboriginal relics (Gorecki 1983).

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 four zones incorporated: lagoon paddock, valley floors including Sawyers Swamp Creek, Kangaroo Creek and Wolgan River, escarpments and plateaux.

The results of the survey found five archaeological sites and 19 potential occupation sites. Potential occupation sites were overhangs or covered areas which may have been used for shelter in the past, but had no deposit at all. Gorecki also considered that some may have had the potential to contain relics. Common sites found were a combination of shelters with art and deposit consisting of quartz, chert, indurated mudstone, quartzite and fine grained igneous inclusions.

Stockton, 1983. A Survey for Prehistoric Sites on the proposed Clarence Transfer for the Lithgow Water Supply, NSW.

This study was conducted 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. Groundwater would be used from Clarence Colliery to supplement natural surface flows into Council's Farmer's Creek Dam. The project requirements were a rising dam, settling ponds and a lined channel. The project was located 7 km north east of Lithgow Post Office and incorporated the gently sloping ridge of the undulating surface of the Newnes Plateau.

The field survey was conducted in three stages. The creek channel section uncovered one isolated find of grey chert and a small artefact scatter composed of two grey quartzite pieces.

Stockton recommended that additional archaeological surveys should always be carried out prior to any clearing or construction work in relation to the proposed project (Stockton 1983).

Rich, 1983. Proposed Prison at Marrangaroo Creek near Lithgow, NSW.

The archaeological assessment for the proposed construction works were located 6 km north of Lithgow (Rich 1983). The proposed development included prison construction, access roads, additional buildings, car parks and a lake. This study was located approximately 5 km south of the current Project Application Area.

Two known Aboriginal sites (#45-1-0089 and #45-1-0090) had been previously recorded in the survey area in 1983. Transects were made between the creek in the south and the railway line in the north. Sandstone ledges north of the railway line were inspected for shelters.

The survey uncovered eight open sites and the two previously recorded sites were groundtruthed. The isolated finds and artefacts identified in the open sites were generally small to medium size and were manufactured from quartz, quartzite and mudstone. Existing registered sites in the area were relocated and audited: Marrangaroo Creek Site #45-1-0089 was located along a track and eroded bank of a small gully. Five artefacts were identified comprising flaked pieces of chert, milky and yellow quartz. Marrangaroo Creek Site #45-1-0090 was located on a levee bank between Marrangaroo Creek and a flood overflow channel. The artefact scatter site contained approximately 11 artefacts comprising flakes of indurated mudstone, quartz and milky quartz although a previously recorded quartzite multifaceted core could not be relocated on the survey.

The presence of quartz and quartzite raw materials in the area indicates that the pebbles may have been readily available for stone tool manufacture in the survey area.

Rich and Gorman, 1992. Proposed Springvale Colliery and Conveyor, Wallerawang: Archaeological Survey for Aboriginal Sites.

An archaeological assessment was conducted for the proposed Springvale Colliery and related facilities located near Wallerawang (Rich 1992). The survey was divided into four locations; Springvale Pit Top Area 500 m x 350 m, Proposed Springvale Longwall Mine Area 7.5 km x 5 km, Proposed Conveyor Route measuring less than 10 m wide and approximately 10 km long and the Proposed Washery covering an area of 1 km x 500 m, including the reject emplacements 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).

The artefact scatters were generally located on well exposed areas containing several artefacts with dominant raw materials of 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.

Archaeological test excavations were recommended to be carried out at the two potential site locations.

Rich, 1993. Springvale Coal Project, Wallerawang, NSW: Archaeological Inspection of Aboriginal Sites affected by Construction Works.

This report was undertaken by Rich subsequent to the 1992 archaeological assessment undertaken by Rich and Gorman (1992). 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 1992 report. These included the updating of existing recorded site cards where necessary (Rich 1993).

Central West Archaeological and Heritage Services Pty Ltd, 2000. An Aboriginal Archaeological Study of the Marrangaroo Department of Defence Site, Lithgow, NSW

Central West Archaeological and Heritage Services Pty Ltd carried out an Aboriginal archaeological study of the Marrangaroo Department of Defence Site (Central West Archaeological and Heritage Services Pty Ltd 2000). The site entrance was located approximately 2.2 km east of the Great Western Highway and 10 km north of Lithgow. The study area was approximately 1,700 ha. The survey was both by vehicle and on foot.

The survey identified 17 Aboriginal sites which consisted of 10 rockshelter sites, two rockshelter sites with art and one with deposits. Four artefact scatter sites and one isolated artefact were also found. In addition 12 Potential Archaeological Deposits were recorded in the survey area.

OzArk Environmental & Heritage Management P/L, 2006. Flora/ Fauna and Heritage Assessment: Two Proposed Dewatering Borehole Sites for Underground Mining Activities within the Newnes State Forest, Lithgow, NSW.

The report was commissioned by Centennial Angus Place Pty Ltd and detailed the results of a heritage assessment of approximately one hectare of land in the Newnes State Forest, Lithgow, immediately south east of the current Project Application Area. The survey was conducted using pedestrian transects.

The survey recorded no Aboriginal sites in the locations of the two proposed dewatering boreholes and associated easement and access tracks. There were no constraints to the proposed development and no further archaeological investigation was considered necessary (OzArk Heritage Management Pty Ltd 2006).

OzArk Environmental and Heritage Management P/L (2007) Indigenous Heritage Assessment for Subsidence Management Plan over Three Proposed Longwalls (29 – 31), Baal Bone Colliery.

OzArk Environmental and Heritage Management P/L was commissioned by Xstrata Coal Pty Ltd for the preparation of a Subsidence Management Plan (SMP) over proposed longwalls 29 to 31 located beneath the Ben Bullen State Forest, Cullen Bullen, NSW (OzArk 2007). This Project Application Area was located seven kilometres north west of the current Project Application Area. OzArk's project comprised an extensive plateau of erosion resistant Triassic sandstone dissected by steep-sided valleys. The area contains remnant surface layers of weathered sandstone and shales of the Narrabeen Group overlaying a complex stratigraphical sequence including the Lidsdale and Lithgow Seams, which are both subgroups of the Illawarra coal Measures.

A pedestrian field survey of a 250 hectare area was conducted and yielded one isolated find and one rockshelter with no surface evidence of Aboriginal occupation. 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 sub surface test excavation in the rockshelter and its immediate environment should occur to determine the presence or absence of Aboriginal occupation.

RPS (2010) Cultural Heritage Impact Assessment, Angus Place Colliery, s75W modification.

RPS was commissioned by Centennial Angus Place Pty Limited to prepare a CHIA for proposed modifications under s75W of the EPA Act to the existing approval for works associated with Longwalls 910 and 900W within the Angus Place coal lease (RPS 2010). The proposed amendments related to the construction of a de-watering plant, a borehole and associated infrastructure.

A pedestrian survey of the Project Application Area identified a single site, being a rockshelter with PAD. The site 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.

RPS (2012) Springvale Mine Dewatering Bore 8

RPS was engaged by Springvale Coal Pty Limited, to prepare an Aboriginal Cultural Heritage Assessment (ACHA) for the construction of Dewatering Bore 8 at Springvale Mine. The study area fell within the existing Springvale mining lease and was located entirely within the Newnes State Forest. Springvale sought consent to allow for the construction and operation of an additional dewatering facility (Bore 8) within the Newnes State Forest on the Newnes Plateau. No constraints to the project in respect of Aboriginal heritage were identified as there were no sites identified inside the Project Area.

RPS (2012) Angus Place Ventilation Facility Project

RPS was engaged by Centennial Angus Place Pty Limited to prepare a Cultural Heritage Impact Assessment (CHIA) for the Angus Place Ventilation Facility Project. The Project Area was located on the Newnes Plateau off Sunnyside Ridge Road in the Lithgow Local Government Area (LGA). The proposed surface infrastructure, included a substation, shaft site, powerlines, cables and new tracks, as well as a subsidence assessment area for first workings. The investigation considered the environmental and archaeological context of the Project Area, including researching previous archaeological investigations in the Project Area, background research into the Aboriginal and European history, searches of various heritage databases to identify previously recorded sites and a predictive model developed for Aboriginal sites. In addition, an archaeological survey of the Project Area was conducted in consultation with representatives of participating Aboriginal community stakeholders. No new Aboriginal objects or places were identified as part of this investigation.

6.5 Predictive Model for Archaeology in the Project Application Area

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. Other resources such as raw stone materials, wood and bark, animal skins and reeds for basket weaving, string, clothing and similar, were also used. Landscape features such as ridges, flat elevated areas and 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 including corroborees, mythological places and initiation sites.

6.6 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.

6.6.1 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 artefact sites including artefact scatters and isolated finds, shelters including shelters with art and/or deposit and grinding groove sites. In areas where old growth vegetation remains, culturally scarred trees may also be found. Stone arrangements may also be found in the Project Application Area.

6.6.2 Site Locations

Artefact scatters and isolated finds may be found in any landscape, but more often within 100 m 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. Potential archaeological deposit is only likely if there is intact or undisturbed A horizon soils. Shelter sites are usually identified in cliff faces and rock overhangs. It is predicted that these sites types will be identified in areas of sandstone outcrop and pagodas. They are unlikely to be found on the plateaux areas. Grinding grooves are usually found in exposed sandstone outcrop along creek lines, on flat lying sandstone outcrop and may be found near to rockshelters. It is also likely that grinding groove sites may be associated with wells.

6.6.3 Site Contents

A review of previous archaeological investigations indicates that artefact sites found in the area generally comprised flaked stone artefacts manufactured from quartz, quartzite, mudstone, chert 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.

7.0 Archaeological Field Survey

7.1 Survey Methodology

The Project Application 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) and *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011).

7.1.1 Survey Aims

The purpose of the survey was to inspect visible ground surfaces, observe exposed soil profiles and identify Aboriginal objects or sites such as rockshelters, scarred trees and rock art, in addition to assessing whether potential archaeological deposits are present in the Project Application Area. The survey also aimed to record any cultural sites 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. 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 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 (refer **Figure 5**).

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 for any newly recorded sites and submitted for registration on the AHIMS database (refer **Appendix 6**).

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 11** below. The generalised terminology used in the 'Overall Rating' column is employed for description of the GSV in a given area.

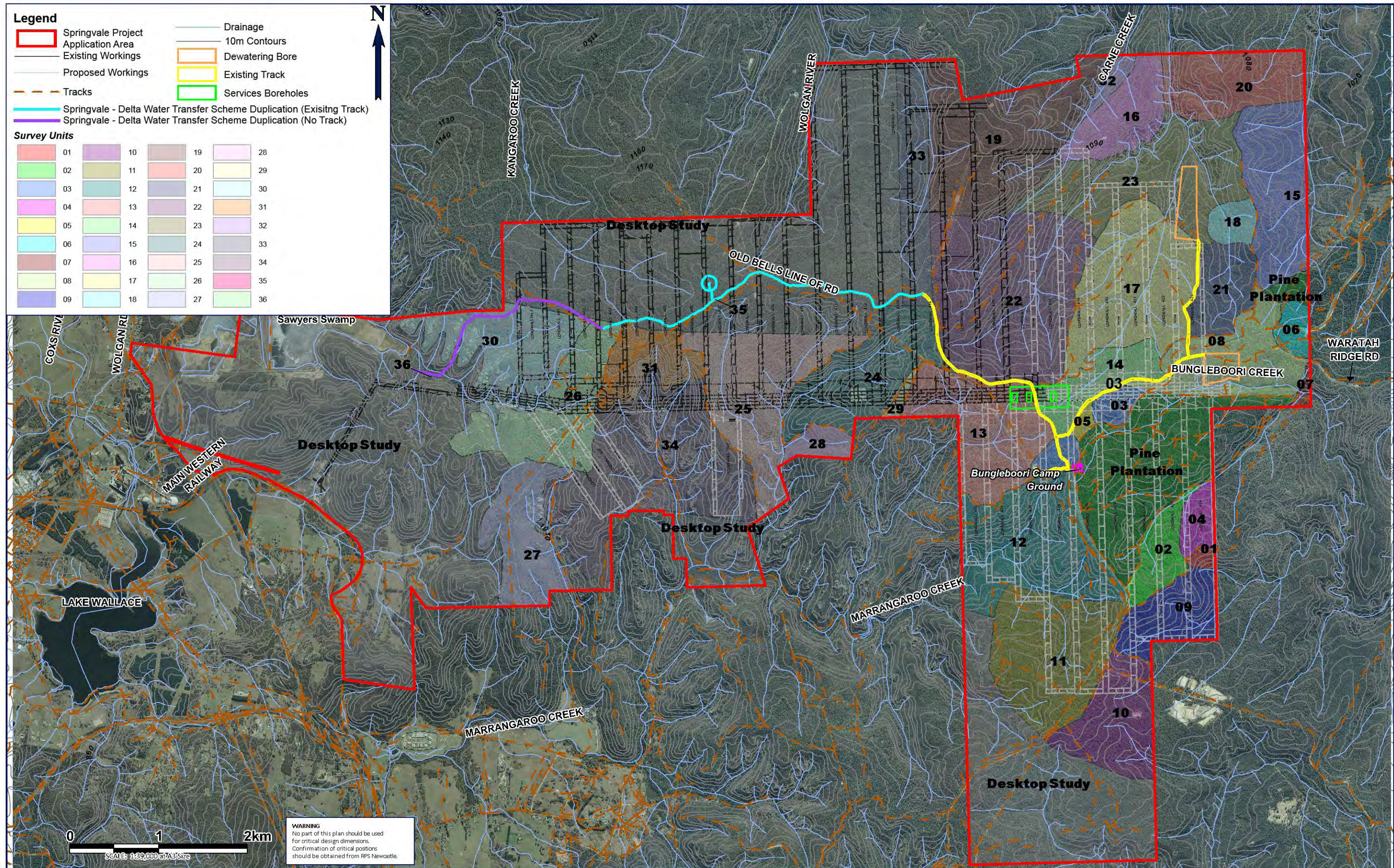
Table 11 Ground surface visibility rating

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.



TITLE: FIGURE 4: PROJECT APPLICATION AREA WITH SURVEY UNITS

LOCATION: SPRINGVALE

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 3/10/2013
PURPOSE: HERITAGE

LAYOUT REF: J:\JOBS\Centennial\All Jobs\111287 Springvale- Extension\10. Drafting
VERSION (PLAN BY): E A3 (DR-NW)

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CLIENT: CENTENNIAL COAL
JOB REF: 111287-2

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7.2 Survey Units

A pedestrian survey of the Project Application Area was undertaken by RPS archaeologists, Philippa Sokol, Cheng Yen Loo, Ali Byrne, Rebecca Yit and David White. Survey works were to be conducted in conjunction with Aboriginal stakeholders representing Bathurst Local Aboriginal Land Council, Gundungurra Tribal Council Aboriginal Corporation, Mingaan Aboriginal Corporation, Warrabinga Native Title Claimants Aboriginal Corporation and North East Wiradjuri Aboriginal Corporation from 31 January 2012 to 9 March, 2012.

As discussed in Section 3.1 above, it came to the attention of RPS and the Applicant that an altercation had taken place on the morning of 31 January 2012 between two of the Aboriginal stakeholders. Following the execution of a Memorandum of Understanding between Springvale Coal and the relevant Aboriginal representatives, and the implementation of conflict resolution measures, representatives from each registered group were offered the opportunity to inspect any section of the Project Application Area for as long as they felt necessary from 16 April 2012.

Pedestrian survey was undertaken in the Project Application Area, which was divided into 36 survey units, with 3 additional areas subject to a desktop study only (**Figure 4**). Two survey teams, comprising two archaeologists, accessed each survey unit and assessed each area according to the criteria described in the methodology section above. Ground surface visibility was calculated following the descriptions outlined in **Table 12**, Section 7.1.6.

Known archaeological sites within the Project Application Area were mapped as shown in **Figure 3** and **Figure 5** shows new sites identified during the archaeological survey. Artefact sites and rockshelters were the most frequently identified sites in the Project Application Area. Previously identified Aboriginal archaeological sites were mapped and groundtruthed during the course of the survey. In past archaeological surveys, co ordinate data was collected using varying recording systems. As a result, the co ordinates given for some of the registered sites in the Project Application Area were found to be inaccurate up to 150 metres and the GDA Zone 56 co ordinates were recorded using Differential GPS units in order to establish the actual location of the site (**Figure 6**). Newly identified sites were recorded and site cards submitted for registration on the AHIMS database.

7.2.1 Survey Results

There were 36 survey units physically inspected during the course of the survey of the Project Application Area.

Survey Unit 1

This survey unit was located along the eastern boundary of the Project Application Area. It mainly comprised the upper and mid slopes of a south facing spur. The vegetation was consistent with open woodland and shrub understorey, with juvenile eucalypts being the dominant vegetation type. Very little ground surface was visible owing to dense vegetation and leaf litter. An access track traversing the survey unit afforded the most ground surface visibility, however no artefacts or Aboriginal objects were identified. The northern part of the survey unit contained three other exposures and exposed track areas (**Plate 1**). A drainage gully was also inspected, with no Aboriginal objects identified.

The previously recorded site **AHIMS # 45-1-0065**, situated less than 50 m outside the Project Application Area, was groundtruthed at the co-ordinates provided on the AHIMS database. Ground truth survey showed this to be an area with no rock outcrops. The surrounding area was investigated, and the rockshelter and grinding groove site was identified approximately 150-200 m southwest of its original recorded location. The

rockshelter was facing southeast. The grinding groove site was situated on flat lying sandstone outcropping near to the rockshelter. A large number of grinding grooves and associated wells were on the sandstone platform above the shelter (**Plate 2**). Both the rockshelter with deposit (**Plate 3**) and the grinding groove site were measured and details recorded. The site card will require updating to show the corrected co-ordinates and the details submitted to the OEH for inclusion on the AHIMS database.

One previously recorded site, a rockshelter with deposit and grinding grooves **AHIMS #45-1-0065** was located approximately 150 m to the southwest of the AHIMS recorded position but no new Aboriginal sites or objects were identified within this survey unit.

Survey Unit 2

This survey unit was located adjacent and to the southeast of the Pine Plantation. The topography was characterised by a crest, upper and mid slopes on the southern border of a pine plantation in the south east of the Project Application Area.

The vegetation was mainly open woodland and there was some regrowth evident (**Plate 4**). There were fewer trees and more shrubs in mid slope areas. Exposures were limited and were generally in or near drainage gullies. No sandstone outcrops were identified although there were broken fragments of quartz and sandstone on the surface of the B horizon soils. There was a small drainage line crossing the survey unit with some mature trees close to it. The drainage line was moist but without running water. Another more substantial watercourse with running water, which was a major tributary of Bungleboori Creek, was observed in this survey unit; however its banks were covered with dense vegetation, thus reducing visibility.

One previously recorded artefact scatter site **AHIMS #45-1-2669** was recorded within this survey unit. The site card, from March 2008, recorded five artefacts adjacent to a fire trail. The site card also noted that it was believed that the artefacts had washed down from another location higher up the slope. A thorough search of the area was conducted; however none of the artefacts could be relocated (**Plate 4**). It is presumed, given the concerns recorded on the site card regarding the secondary context of the artefacts, that they had either been washed from their recorded location or been disturbed by vehicular traffic.

One previously recorded artefact scatter **AHIMS #45-1-2669** was groundtruthed but the artefacts were not found. No new Aboriginal sites were identified in this survey unit.

Survey Unit 3

This survey unit was located to the north and west of the Pine Plantation and the Bungleboori Camp Ground. The area was gently sloping with open forest. Owing to the vegetation cover, visibility was assessed as being very low. Two previously recorded grinding groove sites **AHIMS #45-1-0002** and **AHIMS #45-1-0005** were situated in this survey unit.

AHIMS Site #45-1-0002 was recorded as a grinding groove site on flat lying sandstone in a clearing. The grinding grooves, despite intense searching, could not be relocated either at the old co-ordinates or at an alternate area on a sandstone sheet that was thought to be the actual site based on the site card photo and approximately 120 m northeast of the site card recorded location. This may be for several reasons: most of the sheet was covered in heavy sediment deposit and disturbed with tyre marks (**Plate 5**); a couple of sections on the sandstone sheet were crushed (**Plate 6**); and there was evidence that the area was used for recreation purposes. To the east was a highly disturbed open area containing rubbish and recent tree cutting consistent with recreational use as a camping area.

AHIMS Site #45-1-0005 was recorded as grinding grooves and water hole on a flat sandstone surface. An area of approximately 500 m around the recorded co-ordinates including a crest was searched for potential rock outcrops. No flat sandstone sheet suitable for a grinding groove site was identified although the soils had been disturbed in the area and may have covered the sandstone slab with the grinding grooves and well.

The previously recorded grinding grooves at sites **AHIMS #45-1-0002** and **AHIMS #45-1-0005** were not observed probably due to the extent of the disturbances in the area. They may have been covered by soils and refuse. No new Aboriginal sites were identified in this survey unit.

Survey Unit 4

This survey unit was located to the southeast of the Pine Plantation. It was characterised by a crest, upper slope and a number of drainage lines. All of these areas were targeted as possible locations for sites as per the predictive model.

The survey unit was one of open forest (**Plate 7**) and the dominant vegetation was stringy barks and shrubs. An old borehole location was identified within this survey unit on the upper slope with a layer of bark spread on the ground surface from rehabilitation works. Exposures noted appeared to be from wombat burrows. Soils contained quartz pebbles from local conglomerate and sandstone. A first order tributary of Bungleboori Creek was noted which contained pools, but no running water. A second order tributary of Bungleboori Creek was positioned north of this, but surface visibility was restricted due to an overgrowth of low lying vegetation around the creek line. The exposed clay B horizon soils had been affected by sheet erosion and in some areas sandy A horizon soils had been redeposited down slope after heavy rainfall. Ground surface visibility was high in areas of exposed soil but in undisturbed areas it was low due to the dense vegetation.

No previously recorded Aboriginal sites or Aboriginal objects were located within the survey unit, nor were any new sites identified.

Survey Unit 5

This survey unit (**Plate 8** and **Plate 9**) was located to the north west of Pine Plantation and Bungleboori Camp Ground.

The vegetation within this survey unit was open forest, predominantly with stringy bark species and small, scattered, low shrubs. Ground surface visibility was poor throughout most of the survey unit as there was a thick layer of leaf and bark litter reducing the visible ground surface to almost zero in some places

A first order stream which was a tributary of Bungleboori Creek ran through north eastern portion of the survey unit, containing small pools of water from recent rain. The stream bed was grassed and contained no sandstone sheets. In the south-east portion of the survey unit an area used for picnicking was inspected and was found to be littered with camping refuse and small logs that had been felled for firewood (**Plate 9**). B horizon soils had been exposed by recent rains and there was evidence of extensive erosion. Ground surface visibility was good but no Aboriginal archaeological artefacts or raw materials for stone tools were observed.

No Aboriginal sites or Aboriginal objects were identified within the survey unit. It is considered that due to the extensive disturbance evident in this survey unit that there is no archaeological potential for Aboriginal archaeological sites or *in situ* deposit.

Survey Unit 6

This survey unit was located along the eastern boundary of the Project Application Area. It was dominated by pine forest (**Plate 10**), some of which had been harvested and cleared. Due to past forestry practices land in this survey unit had been extensively disturbed and modified. Tree stumps and dead trees remained on the surface, although some regrowth vegetation was observed. Visibility of the ground surface within this survey unit was good in places, with exposed soil covered with pebbles laterite and sandy clay soils. The harvested areas of the Pine Plantation had disturbed the surface of the soil and access was difficult across the areas with felled trees. No artefacts or raw materials were observed in these exposures. No sandstone outcrops were found.

The south western part of the survey unit was inaccessible due to the dense vegetation in this relatively undisturbed sloped area close to a first order tributary of Carne Creek. **AHIMS #45-1-0179** was recorded as being located within this survey unit and was a shelter with art and deposit. Inspection of the area of the co-ordinates recorded on the AHIMS database (**Plate 11**) showed no evidence of any rock outcrop and was not close to the creek line. It is considered likely that the co-ordinates on the site card were incorrect; review of the site card showed the original co-ordinates to be illegible as they had been crossed out and rewritten. It is likely that the recorded site was further to the south east.

No rockshelter could be identified at the given co-ordinates for the previously recorded site **AHIMS #45-1-0179**. No Aboriginal sites or objects were identified within this survey unit.

Survey Unit 7

This survey area was located to the east of the Pine Plantation. It consisted of a slope and a small, dry gully leading down to Bungleboori Creek. A number of access tracks ran through and around the area which allowed vehicle and pedestrian access. Thick vegetation prohibited access in some parts.

Vegetation chiefly comprised open forest with thick to moderate shrub understorey. This understorey became noticeably thicker closer to creek lines, with banksias and other low lying plants prevalent. Some upper slope areas also had dense heath ground cover. Mature trees were inspected for evidence of cultural scarring. Ground surface visibility was very good along tracks however substantially diminished away from the tracks. The tracks were eroded and rutted, especially in steep areas, with a number of exposures pebble laterite on the surface of the B horizon.

Large boulders were identified east of the spur. These were inspected, however no shelters were identified. One upper slope area had an outcrop at its apex, and whilst the hilltop had a good aspect of the surrounding country, no evidence of use or occupation was observed. Bungleboori creek which was a third order stream in that part of the survey unit was surveyed to the west of that steep slope. Sandstone outcrops were noted above Bungleboori Creek. One of the sandstone boulders had been undercut by erosion but it was under a metre in height and therefore unsuitable as a shelter (**Plate 12**). The creek was followed for approximately 500 m through dense vegetation and ferns, however no sites were identified. Some parts of Bungleboori Creek were inaccessible due to the thick vegetation.

One previously registered site **#45-1-0129**, a scarred tree, was previously recorded as being located in this survey unit, (**Plate 13**). Upon inspection however, it was identified approximately 150 m south west of the original recorded location and outside the Project Application Area. A further three previously recorded AHIMS sites were located within 50 m of the Project Application Area: one shelter with art **AHIMS #45-1-0128**, one shelter with deposit **AHIMS #45-1-0182** and a shelter with art and grinding grooves **AHIMS #45-1-0181**. All were groundtruthed but only **#45-1-0181** was relocated and it contained no evidence of occupation. No new Aboriginal sites or objects were identified within this survey unit.

Survey Unit 8

This survey unit was located along the northern boundary of the Pine Plantation. It comprised a moderately steep upper, mid and lower slope in the east of the Project Application Area, close to the Pine Plantation. The vegetation comprised open forest interspersed with small regrowth pine trees (**Plate 14**), with bracken and other low-growing shrubs as an understorey. Whilst the trunks of the trees were quite narrow, many of the trees appeared to have either been partially blown over or growing at an acute angle, making access difficult in some parts of this survey unit.

Owing to the difficulty of access, vehicle tracks were used wherever possible to reach areas within this survey unit. In addition, extensive leaf litter obscured much of the ground surface, but the vehicle tracks had been affected by sheet erosion. Pebble laterite was scattered on the surface of the B horizon soils. Inspection of upper slopes identified the presence of some sandstone outcrops, however no shelters were observed. A number of ephemeral drainage gullies were present within this survey unit which were first and second order tributaries of Bungleboori Creek. No sandstone outcrops were found along these drainage lines.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 9

This survey unit was located in the south-east corner of the Project Application Area. The survey unit was moderately to steeply sloping with a swamp at the base of the sloped area. Several small drainage lines were also noted and inspected. Vegetation mainly comprised open forest with dense understorey and access was limited in some parts of the survey unit. Other parts of the survey unit comprised closed eucalypt woodland.

Disturbances in the survey unit included motorbike and vehicle tracks, dam construction, tree clearing and logging, camping (firepits used for burning rubbish), refuse such as car parts, sandstone quarrying and an electricity easement. The extensive disturbance evidences the scale of past recreational and industrial use of this survey unit.

Sandstone cobbles and boulders were noted near waterways and further up slope, however none exhibited evidence of cultural use. Quartz pebbles were commonly observed on the surface of soil exposures. Very few mature trees were present and none were observed to have cultural scarring.

All exposed ground surfaces identified were examined. Ground surface visibility varied between good to high on tracks to poor in dense, vegetated areas. Areas where extensive sheet erosion was evident provided the highest ground surface visibility.

There was one artefact scatter that had previously been recorded within this survey unit, **#45-1-0184**, and one situated adjacent to the survey unit, less than 50 m outside the boundary of the Project Application Area, **#45-1-0185**. **AHIMS #45-1-0184** was located within a swamp area and despite several attempts to access the area, vegetation proved too thick (**Plate 15**). The location for **AHIMS #45-1-0185** was inspected but the artefacts were not relocated (**Plate 16** and **Plate 17**). The description of the site matched that reported on the site card. The failure to relocate the artefacts could be the result of natural processes such as an increase in vegetation since the site's recording, damage from bushfire or the effects of erosion of the soils and sheet wash. Human impacts such as those resulting from vehicle use, camping or other recreational or industrial pursuit are also possible explanations.

The two previously recorded artefact scatters detailed above (**AHIMS #45-1-0184** and **AHIMS #45-1-0185**) were not identified at the given co-ordinates for the sites. No Aboriginal sites or objects were identified within this survey unit.

Survey Unit 10

This survey area was located along the southern boundary of the Project Application Area. It consisted of moderate to steep slopes and was vegetated by ironbarks and stringy barks, with a low to moderately dense understorey. Ground surface exposure was severely limited by thick leaf litter, except on previously established vehicle tracks.

Several ephemeral drainage lines traversed the slopes. Ephemeral first order tributaries of Farmers Creek were in the southern part of the survey unit and two first order and one second order tributaries of Bungleboori Creek crossed the slope. These creek lines were inspected but no Aboriginal sites or objects were identified. Some sandstone cobbles were noted on a contour bank at the base of the slope above the creek. The surface of the contour bank was inspected but the regrowth vegetation became too thick for access. No sandstone boulders or outcrops were found along the inspected portion of the contour bank.

A number of dirt access tracks and motor bike tracks crossed the survey unit (**Plate 18**). Sandy soil had been washed down slope and tree branches and logs lay by the side of the tracks. The B horizon was exposed in some parts of the survey unit but vegetation was dense adjacent to the tracks and ground surface visibility was low.

Disturbances in the survey unit include a large dam and a quarry and there was evidence that this area had been used for camping. These extensive modifications to the landscape render the archaeological potential at zero in these portions of the survey unit.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 11

This survey unit was located in the south-eastern corner of the Project Application Area. It was characterised by steeply sloping hills with large, ephemeral drainage lines which were low order tributaries of Marrangaroo Creek. Extensive sheet erosion was also noted in open areas on the slopes exposing the clayey B horizon. Vegetation was open forest, consisting mainly of stringy barks and scribbly gum, with banksia and heath scrub providing the understorey (**Plate 19**). Low lying plants were noted at the base of the slope and along creek lines.

Extensive leaf litter and thick understorey growth severely limited visibility and ground surface exposure. Multiple vehicle tracks provided the only means of access as well as offering areas of exposed soil to inspect for artefacts. Pebble and cobbles littered the slopes but no boulders or outcrops suitable for containing shelters were identified. Most trees in this survey unit were relatively young due to previous clearing of the area and therefore not capable of bearing cultural modification. Disturbances in this survey unit included vehicle tracks and domestic refuse, evidencing the past and current recreational use of the survey unit.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 12

This survey unit comprised an area to the southeast of the Pine Plantation. The topography of this survey unit was moderate to steep upper, mid and lower slopes with several ephemeral drainage lines running down to creeks at the base of the slopes. The northern portion of this survey unit was noticeably steeper than other portions of the survey unit. Access to the survey unit was gained through an electricity easement running along the north-eastern portion of the survey unit, parallel with Old Bells Line of Road.

Vegetation across the survey unit was predominantly stringy bark forest with dense undergrowth and low ground surface visibility. The upper slopes were populated by dense heath vegetation. Exposures across the survey unit were few and almost entirely confined to vehicle access tracks (**Plate 20**). Trees within this survey unit were mostly regrowth and therefore of insufficient age to bear cultural modification scars. A number of first and second order and a third order tributary of Marrangaroo Creek crossed the survey unit. Soils were predominantly clayey with some sandy loam in the upper sloped area. Disturbances evident across the survey unit included motorcycle tracks, refuse in the form of domestic rubbish and car parts, campsites, and service easements.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 13

This survey unit comprised moderate to very steep slopes. The northern boundary of this survey unit was marked by Mayingu Marragu Trail (Blackfellows Hand Track). The vegetation consisted of stringy bark and iron bark forest with low growing shrubs. At least one electricity easement runs through this survey unit (**Plate 21**). Other disturbances included campsites as well as tracks used by trail bikes and other recreational vehicles. Ground surface visibility was mainly confined to these tracks.

Most of the trees in this survey unit are relatively young and tree stumps suggest fairly recent felling. Small ephemeral drainage lines run through the area flowing to creeks at the base of the slopes.

One previously recorded site within this survey unit was **AHIMS #45-1-2578** which was reported as a stone arrangement. This site was located and was found to be an arrangement made of sandstone which was positioned in an easement and protected by a fence made from star pickets and high visibility fencing.

One previously recorded stone arrangement site **AHIMS #45-1-2578** was located. No new Aboriginal sites were identified in this survey unit.

Survey Unit 14

This survey unit comprises a moderately sloping mid and lower slope. Ephemeral drainage lines which are first order tributaries of Carne Creek run down to a second order creek at the base of the slope which is lined by dense vegetation.

The vegetation in this survey unit was predominantly regrowth ironbark trees. These trees were too young to show evidence of cultural scarring. The shrubby understorey and ground cover was dense, limiting ground surface visibility to vehicle and pedestrian tracks. Survey focussed on these tracks as they offered the best visibility (**Plate 22**). A large flat lying sandstone outcrop was inspected but showed no evidence of cultural modification. The sandstone was exfoliating and eroded (**Plate 23**).

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 15

This survey area was located in the eastern portion of the Project Application Area. It was characterised by a creek line, swampy channel and elevated terrace landforms. The vegetation included stringy barks and shrubs to 2 m tall, plus some grasses and dense aquatic plants in and near the creek. Ground surface visibility was severely limited by the thick leaf litter.

Two previously registered sites, **#45-1-0177** and **#45-1-0178** were situated within the survey unit, and another two registered sites, **#45-1-0197** and **#45-1-0198**, were located adjacent to the survey unit, less than

50 m outside of the Project Application Area boundary. All four of these sites were artefact scatters. **AHIMS #45-1-0197** was recorded as being situated on a moderately sloping elevated above a marshy creek line. Low lying vegetation and leaf litter hindered visibility and the site was not relocated (**Plate 24**). The site card for **AHIMS #45-1-0198** indicated that it was located on a terrace above the creek, however due to the dense vegetation this site could not be relocated (**Plate 25**). **AHIMS #45-1-0177** notes the location of the artefact scatter as being on the edge of creek line. Dense vegetation and termite activity limited visibility and had caused extensive damage to the ground surface in this portion of the survey unit. The artefact scatter was not relocated. **AHIMS #45-1-0178** was recorded as being located on a spur between the creek and a running tributary. The site area was identified during this survey but the artefacts could not be found.

Four previously recorded artefact scatters **AHIMS #45-1-0177**, **AHIMS #45-1-0178**, **AHIMS #45-1-0197** and **AHIMS #45-1-0198** were groundtruthed, but not found. No new Aboriginal sites were identified in this survey unit.

Survey Unit 16

This survey unit was located in the extreme north of the Project Application Area. It consisted of a spur between two third order tributaries of Carne Creek. The sides of a gorge rise east and west of the spur. Access was gained via a walking track running north-south in the centre of the spur across a moderate slope. Either side of the track were very steep slopes leading into the v-shaped valley below. There were almost vertical cliffs along the eastern side of the spur which dropped into the narrow 'v' shaped valley below. Most of the lower parts of this survey unit were inaccessible due to these rocky sandstone cliffs.

Vegetation across the survey unit consisted of stringy bark forest with ground dwelling shrubs and small plants growing in the thin soil covering sandstone sheets (**Plate 26**). All of the visible sheets were examined for stone artefacts and evidence of grinding grooves. None were found.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 17

This survey unit was located in a moderate to steeply sloped area which contained multiple low order drainage lines. The survey unit had been disturbed by vehicles and campers using the area. An active borehole and logging truck were also noted in the survey unit during the inspection.

Vegetation consisted of a predominantly eucalypt forest with banksia and shrubs forming a dense understorey except in areas that had been cleared for logging and recreational use. There were a number of low order tributaries in this gently sloping landscape and waterways were inspected where possible. Some outcropping sandstone was identified but none exhibited archaeological evidence. Ground surface exposure was limited mostly to pedestrian and vehicle tracks owing to thick leaf litter and vegetation limited visibility away from the tracks.

One previously recorded site was located within this survey unit, an artefact scatter **AHIMS #45-1-0051**. The area surrounding the recorded co-ordinates was inspected, but the site could not be found. It is possible that the artefacts may have been present but were likely hidden beneath the dense cover of leaf litter and shrubs which significantly reduced surface visibility (**Plate 27**).

One previously recorded artefact scatter **AHIMS #45-1-0051** was groundtruthed but not found. No new Aboriginal sites or objects were identified in this survey unit.

Survey Unit 18

This survey unit was located along an ephemeral creek line in the east of the Project Application Area. This survey unit specifically targeted the site area for **AHIMS site #45-1-0052**, a previously registered artefact scatter.

According to the co-ordinates provided on the site card, the site was located to the west of a creek line immediately upstream from a 20 m to 30 m high waterfall on a slightly elevated, fairly level ground surface. A total of six artefacts had been recorded in 1981 over an area with a 100 m radius and included scrapers, hand tools and a core. None of the recorded artefacts were relocated. Visibility was hindered by heavy leaf litter and some low-growing vegetation which inhibited the inspection of the recorded site (**Plate 28**). The vegetation in the area comprised stringy barks, banksias and marshy plants.

No artefacts were found at the location of previously recorded artefact scatter site **AHIMS #45-1-0052**. No new archaeological sites were identified.

Survey Unit 19

This survey unit was located in the north of the Project Application Area. Disturbances in the survey unit included tree felling and damage from recent storms, borehole drilling works, 4WD vehicles and recreational use of the area. Vegetation consisted mainly of regrowth stringy bark and ironbark trees, with a moderately dense understorey of low-growing shrubs. None of the trees appeared to be of a suitable age for cultural modification. Visible exposures showed soils to be sandy loam.

A large sandstone pagoda located 50 m outside of the boundary of the Project Application Area was inspected and was found to contain two rockshelters. Both of these shelters were within a single massive boulder and therefore recorded as a single site (**RPS SV RS1** - now **AHIMS#45-1-2756/2757**). 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 m long by 2.9 m deep by 1.6 m high (**Plate 29**) and features a hand stencil on its wall (**Plate 30**), a loose grinding stone (**Plate 31**) and a broken piece of hardened ochre is also present (**Plate 32**). **Shelter B** measured 6.0 m long by 2.2 m deep by 1.8 m high (**Plate 33**) and was devoid of Aboriginal objects. Both the ceiling and rear wall of the shelter demonstrated weathering and exfoliation (**Plate 34**). 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.

One previously recorded site, **AHIMS #45-1-2600**, a scarred tree (**Plate 35**), was also located within this survey unit and inspected. There was a clearing nearby (**Plate 36**). There were scars on both sides of the tree, one of which was considered to be not consistent with cultural modification but may have been scarred by natural means (**Plate 40**); the scar on the other side of the tree had been previously recorded as being cultural in origin.

A scarred tree (**AHIMS #45-1-2600**) and a new Aboriginal site (**RPS SV RS1/ AHIMS#45-1-2756 – AHIMS 45-1-2757** is a duplicate in the AHIMS system) which was a rockshelter complex with two shelters (**Shelter A** and **Shelter B**) were identified in the survey unit.

Survey Unit 20

This survey unit was located in the north of the Project Application Area. This survey unit was thickly vegetated by eucalypts, banksias and low growing shrubs forming a dense understorey. Most trees exhibited evidence of bushfire damage (**Plate 37**). Sandy soils were evident in exposures.

Access to the survey unit was gained via a previously established dirt track; dense vegetation and steep terrain made access to much of this survey unit difficult, as such the upper tributaries of Carne Creek (along the western portion of the survey unit) were not accessed due to the steep cliffs and dense vegetation. The survey unit had been extensively disturbed by recreational vehicle use, as well as natural processes such as bushfire and sheet wash erosion.

No previously registered sites were located within this survey unit and no new Aboriginal sites were identified.

Survey Unit 21

This survey unit was located in the east of the Project Application Area boundary. It comprised moderately steep mid and lower slopes leading down to a marshy creek at the base of the slopes.

The vegetation across the survey unit comprised stringy barks, banksias and dense low lying vegetation. Inspection of this survey unit was limited by the thick understorey of dense vegetation and thick leaf litter (**Plate 38**). Access was gained exclusively by existing vehicle tracks. Refuse was noted near these tracks including furniture and general domestic rubbish.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 22

This survey unit was located in an area with a high ridge running north to south. It consisted of moderate to very steep slopes which were vegetated mostly by stringy barks with some iron barks and scribbly gums. At the base of the slopes were ephemeral streams which were tributaries of Carne Creek with water in them as a result of recent heavy rain (**Plate 39**). All the soil in the creek line had been washed away. They were very densely vegetated by marshy plants (**Plate 40**). The survey unit was divided by a road, but was of a similar landscape on both sides.

Some portions of the survey unit were inaccessible due to steep slopes and/or dense vegetation. Disturbances noted in the survey unit included the vehicle tracks, campsites with remains of campfires and domestic refuse, and log dumps associated with the construction and maintenance of boreholes.

No previously registered AHIMS sites were located in the area and no new sites were found.

Survey Unit 23

This survey unit was located in the north of the Project Application Area. It was characterised by steep slopes to the north and east of the survey unit leading down to a number of drainage lines which were tributaries of Carne Creek to the north. Vegetation comprised predominantly eucalypt forest with banksia and shrubs forming an often dense understorey. A creek at the base of one steep slope contained sandstone sheets and a waterfall (**Plate 41**). During inspection of this survey unit, it was found that the creeks were running much faster than normal due to recent heavy rain. It was not possible to traverse the some of the upper tributaries of Carne Creek (along the eastern portion of the survey unit) due to the steep cliffs, dense vegetation and increased waterflow in the area. The area also showed evidence of previous storm damage and was largely inaccessible due to very dense vegetation and very steep slopes with sandstone sheets (**Plate 42**). Disturbances included recreational vehicle use as well as campsites.

AHIMS 45-1-2739 an isolated find site (Plate 43 and 44) was located in the survey unit. This milky quartz core had been recorded in this area during the course of a concurrently occurring due diligence inspection and recorded with AHIMS.

A previously registered AHIMS site was located in the area (**#45-1-2739**) and no new sites were found.

Survey Unit 24

This survey unit was located in the centre of the Project Application Area. It was characterised by very steep slopes and sandstone escarpments. Vegetation comprised mainly relatively young iron bark, stringy bark and scribbly gum with banksias and low growing shrubs as an understorey. Thick groundcover occurred at the base of a slope near a flowing creekline.

Two previously registered AHIMS sites were located within this survey unit. **AHIMS #45-1-0204**, a shelter with art, was relocated and was inspected (**Plate 45**). The site card indicated a large, red ochre motif on the back wall of the shelter at the time of recording in 1992. It was also noted that lichen growth had started to obscure the artwork. Vegetation surrounding the entrance to the shelter was dense with limited light.

AHIMS #45-1-0205, a shelter with art and deposit was recorded as being to the immediate north-east of **AHIMS #45-1-0204**. The survey team followed the directions listed on the site card to the co-ordinates recorded for the site; however it was also not relocated due to the dense undergrowth.

AHIMS #45-1-0204, a shelter with art, was relocated although **AHIMS #45-1-0205**, a shelter with art and deposit was not found due to the difficult terrain and poor visibility. No other recorded sites were located within this survey unit and no new Aboriginal sites were identified.

Survey Unit 25

This survey unit was located in the centre of the Project Application Area. It was characterised by a south-trending spur, with steep slopes to the east and west. Several drainage lines ran down slope to join creeks at the base of the slopes. Overall, the survey unit was dominated by thick vegetation and several distinct sandstone pagodas (**Plate 46**).

The vegetation within the survey unit was mainly young scribbly gum, some ironbark and low lying shrubs in the understorey. It was noted that in the valley region that ferns dominated to the point where water channels could not be seen.

The survey unit had evidence of domestic disturbance by way of tyres and food rubbish. The greatest visibility in this survey unit came from tracks for recreational vehicles (4x4, trail bikes). Most of the area proved very difficult to penetrate off the tracks due to the sheer cliff faces.

There were no previously registered sites and no new Aboriginal sites were identified in this survey unit.

Survey Unit 26

This survey unit was located in the west of the Project Application Area. It was characterised by moderately steep upper slopes leading down to Kerosene Vale in the west. Several drainage lines ran down the slopes to Sawyers Swamp. The survey unit was dominated by thick vegetation, sandstone pagodas and the effects of commercial disturbances. The vegetation was mostly young ironbark with some scribbly gum, with low-lying shrubs and some pine trees.

The survey unit had been utilised for the use of an electricity easement and power lines, as well as a medium sized underground pipe (**Plate 47**). The piping had a number of access points and at each point a clearing had been constructed. An access track ran along the electricity easement that appeared to be regularly used by off-road vehicles. In addition, the Beecroft Track, a graded and frequently used vehicle track, also runs through the north of this survey unit.

There were no previously registered sites and no new Aboriginal sites were identified in this survey unit.

Survey Unit 27

This survey unit was located in the west of the Project Application Area, north of Marangaroo Creek. It was characterised by a ridge with steep slopes dropping to the east and west. A cliff line formed the western border of the survey unit, with another immediately outside the survey unit to the east. Vegetation comprised scribbly gum, some ironbark and an understorey of shrubs, grasses and ferns closer to watercourses. The visible geology appeared to be sandstone with quartz inclusions, with a number of pagodas noted in the area as well as a large sheet of sandstone. The survey was conducted via pedestrian access with vehicle assistance to the area (**Plate 48**).

An electricity easement with power poles crossed through and continued outside the survey unit. No significant recreational activity was noted and appeared to be relatively undisturbed except for small scale logging.

Access to **AHIMS #45-1-0091** could not be gained due to extremely steep terrain. This rockshelter site with deposit had been recorded in 1983 by Brayshaw and McIntyre and they found a silcrete flake with ochre rubbed on both sides. Rockshelters **AHIMS #45-1-0087** and **AHIMS #45-1-0088** were just outside of survey unit 27 and due to the dense vegetation and difficult terrain they were not inspected.

A possible rockshelter site which may have been **AHIMS #45-1-0091** was viewed from a distance during the survey but access for recording and groundtruthing could not be gained. Rockshelters **AHIMS #45-1-0087** and **AHIMS #45-1-0088** were not observed due to inaccessibility. Aside from those mentioned above, no further previously recorded or new sites were identified. There were no new Aboriginal sites were identified in this survey unit.

Survey Unit 28

This survey unit was located in the centre of the Project Application Area and consisted of a steeply sloping gully, with a spur to the south (**Plate 49**). The vegetation comprises scribbly gum and ironbark, with banksia and low-lying shrubs as a thick understorey. The survey unit was surrounded on each side by large pagodas and deep valleys.

Some disturbances were evident in the form of camp fires and clearings. It was noted that existing tracks provided the only easy way of accessing the area, which was noted as being quite difficult otherwise. Ground surface visibility within this survey unit was confined to these access tracks. Whilst relatively undisturbed, much of the survey unit could not be safely accessed owing to the steep slopes and sheer cliff faces. This difficulty of access may explain both the low level of disturbance and absence of Aboriginal sites.

There were no previously registered sites and no new Aboriginal sites were identified in this survey unit.

Survey Unit 29

This survey area is characterised by a relatively flat ridge, with steep to moderately steep slopes trending west to east. Several small drainage lines run down slope to larger creeks at the base of the slope. The vegetation is dominated by stringybark and iron bark, with a thick understorey of banksias and low lying shrubs (**Plate 50**).

Vehicle tracks traverse the survey unit and provided the best means of access for the survey team. Disturbances within the survey unit are moderate and comprise felled trees as a result of recreational and industrial pursuits, as well as domestic refuse. Owing to the thick vegetation, the survey focussed on areas of exposure provided by vehicle access tracks.

No previously registered sites were located in this survey unit and no new Aboriginal sites identified.

Survey Unit 30

This survey unit was located to the east of Sawyers Swamp, at the western end of the Project Application Area. It was characterised as a series of spurs trending southeast to northwest, with steep valleys and sandstone pagoda formations (**Plate 52**). The north eastern portion of the survey area is moderately sloped down towards Old Bells Line of Road. Vegetation was dominated by scribbly gum with some ironbark and low lying shrubs in the understorey.

Access to the area was difficult, with vehicle tracks providing the only means of reaching some portions of the survey unit. Despite the difficulty of access, disturbances were noted in the form of log dumps and domestic refuse. The steep cliffs prevented access to watercourses associated with Sawyers swamp in the southern portion of this survey unit. A deeply incised drainage channel (**Plate 52**) was observed in the western side of this survey unit. This drainage channel ran in a north-south direction through a wide gully, and into Survey Unit 36 to the south. The drainage channel was heavily vegetated with ferns.

Two shelters with deposit were located 50 m just outside of the Project Application Area, west of this survey unit (**AHIMS #45-1-0159** and **AHIMS #45-1-0008**). These sites were not inspected due to difficult terrain.

No previously registered sites or new Aboriginal sites were in this survey unit. Two registered sites, **#45-1-0008** and **45-1-0159**, were situated to the west of the survey unit, outside of the Project Application Area, but could not be accessed due to difficult terrain.

Survey Unit 31

This survey unit was characterised by a moderate to very steep south facing slope. The vegetation was predominantly a mixture of scribbly gum and ironbark with an understorey of shrubs (**Plate 53**). The area had an electricity easement through it which had been extensively used by trail bikes and other recreational vehicles. There were two ephemeral first order streams in the southern part of the survey unit which were tributaries of Marrangaroo Creek. Thick undergrowth obscured much of the ground surface as well as preventing access to some areas within the survey unit. Ground surface visibility was low. There was some domestic waste noted in the form of rubber hoses and food refuse, although disturbances were relatively low. Exposures were limited to the areas of dirt track which crossed the survey unit.

Two scar trees were identified during the inspection of this survey unit. **RPS SV ST1 (AHIMS# 45-1-2758)**, a culturally modified tree, was located just outside of the survey unit featuring an oval scar. The tree had been affected by fire and was in poor condition (**Plate 54**). **RPS SV ST2 (AHIMS# 45-1-2759)** was a culturally modified tree which had an oval scar and the ironbark was found to be in good condition (**Plate 55**).

No previously recorded sites were located in this survey unit. Two new sites were identified being culturally modified trees with oval scars **AHIMS# 45-1-2758** and **AHIMS# 45-1-2759**.

Survey Unit 32

This survey unit sloped steeply on either side of Carne Creek. It was characterised by open forest vegetation with an understorey of small shrubs and a dense cover of leaf litter. The survey unit was accessed via a dirt track which led to an Ample-tech sub-station and a previous borehole location was also noted. The soils alongside the track and in the sub-station area had been highly disturbed and affected by sheet wash which provided greater visibility for inspecting the surface of the soils for artefacts, but none were found.

No previously recorded sites were located in this survey unit, nor any new sites identified.

Survey Unit 33

This was located in the north of the Project Application Area. The survey unit sloped to the east. A second order stream traversed the survey unit and was fed by a number of first order streams. These ephemeral creek lines were tributaries of the Wolgan River, a high order stream that lay to the west of the overall Project Application Area. Dominant vegetation in the survey unit was characterised by eucalypt species and a number of low lying ground cover plants. Ground surface visibility was hindered by the vegetation cover through the area and the surface of the soil was covered with leaf litter, except for those areas exposed by vehicle access tracks. B horizon soils had been exposed by sheet erosion along the tracks and slopes.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 34

Set on an undulating plateau, this survey unit was situated above a deeply incised drainage system with steeply sloping sides. Vegetation in this area consisted of open woodland ranging from juvenile to old growth trees. An understorey of seasonal grass surrounds clusters of low-lying bushes and shrubs which densely populate the landscape. Several clearings were identified which comprised of sand, river worn quartz pebbles and conglomerate material. The clearings were inspected for stone artefacts but none were identified. Outcrops of sandstone were also inspected for grinding grooves, especially near the drainage zones but none were identified. Estimated ground surface visibility ranged from low in areas of dense vegetation up to high in the clearings. On average, ground surface exposure was approximately 25%. Some of the upper tributaries of Marrangaroo Creek in the southern western and south eastern portion of this survey were not accessible in this survey unit because of the steep escarpments.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 35

This survey unit was located in the north of the Project Application Area, and was extensively disturbed due to track grading, sustained vehicle use and general access, vegetation clearance and the construction of general infrastructure including powerlines and fenced compounds (**Plate 56**). This survey unit comprised relatively flat ground, with sparse regrowth vegetation. Eucalypt and wattle species were observed to be dominant.

Leaf litter was dense, and ground surface visibility was moderate to low. Areas of exposure were typically restricted to the established access tracks and in areas of vegetation clearance for the purposes of

construction. In the less disturbed areas, soil was observed to be medium brown loose loam, while near to the tracks and construction sites soil was orange-yellow silty sand.

The Beecroft Track (**Plate 57**), as well as a wide powerline easement, runs in an east-west direction through this survey unit.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

Survey Unit 36

This survey unit was located in the west of the Project Application Area to the east of Sawyers Swamp and to the direct south of Survey Unit 30. It comprised a steeply sloped gully that ran in a roughly north-south direction. This gully was bordered to the east and west by sheer cliff faces and sandstone pagodas. At the base of the gully was a low lying swamp area (**Plate 58**), which was inundated with water and led into Sawyers Swamp to the west (**Plate 59**). A deeply incised drainage channel ran through the centre of this gully and into the swamp area to the south. This channel was heavily vegetated (**Plate 60**).

In the more elevated areas, vegetation comprised primarily mature eucalypts and a dense midstorey of various wattle species. To the south and within the low lying swamp area, mature eucalypts were also present, as well as large numbers of tea trees and ferns. Ground surface visibility was limited due to the density of vegetation and leaf litter, and areas of exposure were limited in size and frequency. Where visible, soil was observed to be dark brown loose loam in the more elevated areas, and light grey loose sand in the low lying swamp area.

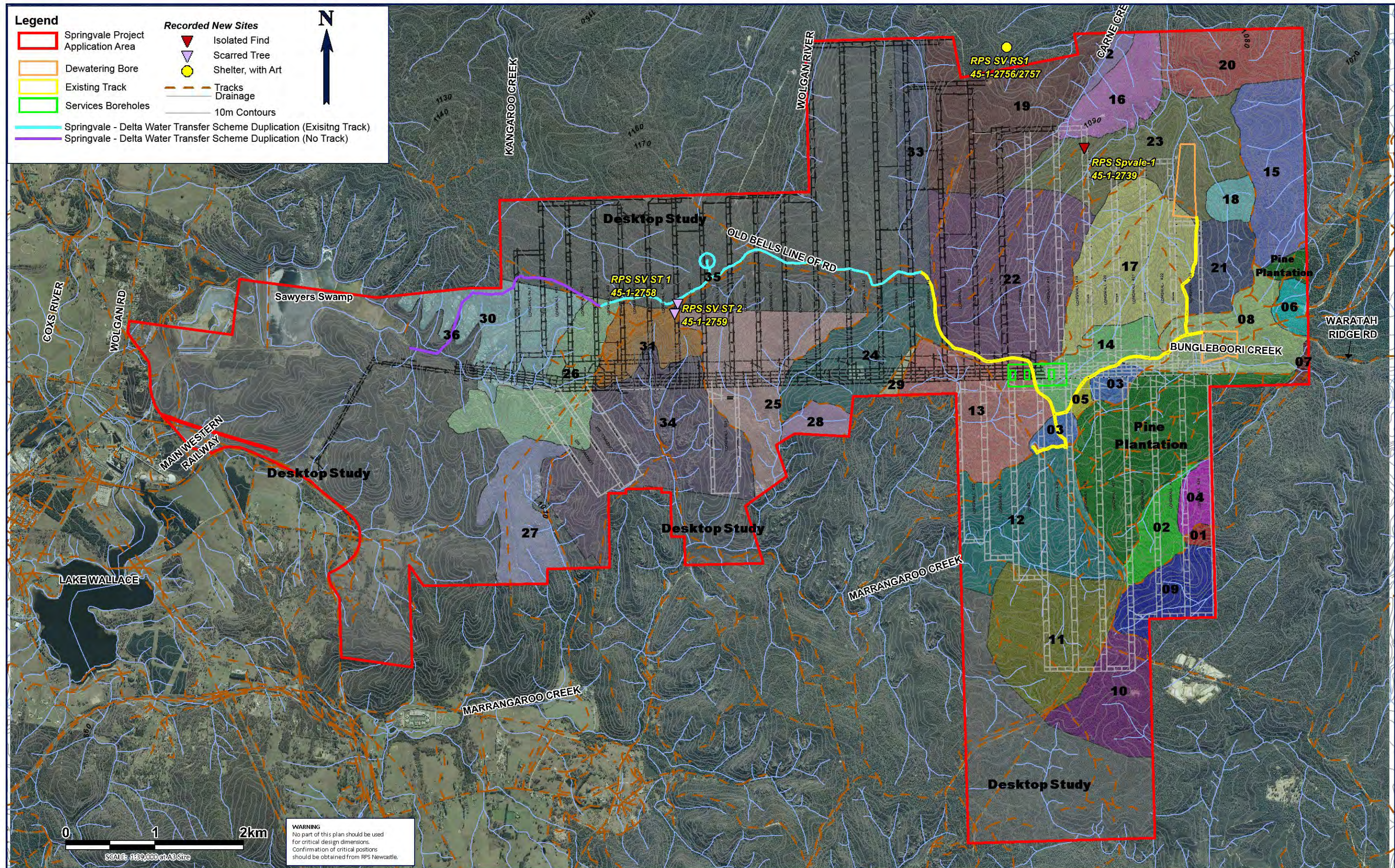
Evidence of water erosion was observed at the base of the cliffs, and evidence of past vegetation clearance was also noted. A clearly defined track (approximately one metre wide) ran parallel with the drainage channel and into the swamp area.

No Aboriginal sites or Aboriginal objects were identified within the survey unit.

As discussed in Section 7 above, assessing the exposure and visibility of an area such as the survey units 1 to 36 is important for the calculation of survey coverage in each area. **Table 12** details the survey coverage data for each of the survey units in the Project Application Area.

Table 12 Survey coverage data

Survey Unit	Survey Unit area (m ²)	Exposure%	Visibility%	Effective Coverage Area (m ²)	Effective coverage/Sample fraction %
1	65280	5	10	326.4	0.5
2	483800	15	10	7257	1.5
3	347100	5	5	867.75	0.25
4	256900	10	10	2569	1
5	62920	5	30	943.8	1.5
6	208200	50	20	20820	10
7	57600	30	25	5760	10
8	1213000	30	10	36390	3
9	745500	80	5	29820	4
10	1041000	70	10	72870	7
11	1783000	5	5	4457.5	0.25
12	1971000	80	5	78840	4
13	1484000	30	20	89040	6
14	653400	60	10	39204	6
15	1328000	10	10	13280	1
16	767400	40	10	30696	4
17	1948000	50	20	194800	10
18	237400	35	5	4154.5	1.75
19	2306000	60	30	415080	18
20	1056000	25	15	39600	3.75
21	646700	45	15	43652.25	6.75
22	2957000	40	25	295700	10
23	1987000	10	5	9935	0.5
24	1395000	5	5	3487.5	0.25
25	6532000	40	15	391920	6
26	1332000	30	15	59940	4.5
27	1025000	40	10	41000	4
28	233800	40	20	18704	8
29	64900	45	15	4380.75	6.75
30	1218000	45	25	137025	11.25
31	660200	70	30	138642	21
32	141200	40	40	22592	16
33	934800	30	30	84132	9
34	2873000	25	25	179562.5	6.25
35	92795.0	45	35	14615.225	15.75
36	15708.0	5	5	39.27	0.2500



7.3 Survey Results

Three previously unrecorded Aboriginal sites were identified during the survey. **Table 13** below lists all 34 previously registered and newly identified sites within the Project Application Area and within 50 m of the boundary. Sites which lie outside of the Project Application Area, but within 50 m of its boundary are listed, and counted in the overall site numbers, but have not been allocated a survey unit.

Table 13 Summary of recorded sites in the Project Application Area including the surrounding 50 m buffer (GDA94/MGA Zone56)

AHIMS Site ID	Site Name	Site Type	Eastings	Northings	Survey Unit
45-1-2758	RPS SV ST1	Scar Tree	235004	6302002	31
45-1-2759	RPS SV ST2	Scar Tree	234965	6301890	31
AHIMS#45-1-2756/2757	RPS SV RS1	Rockshelter Complex: A & B	238703	6304891	19
45-1-2739	RPS Spvale-1	Isolated Find	239575	6303752	23
45-1-0002	Bungleboori;Old Bells Line Track;	Axe Grinding Groove	239405	6300590	3
45-1-0005	Old Bells Line Track;	Axe Grinding Groove	240065	6301190	3
45-1-0008	Lidsdale; Kerosene Vale;	Shelter with Deposit	231745	6302090	-
45-1-0051	Nine Mile Pine Plantation;Carne Creek;	Artefact Scatter	240355	6303039	17
45-1-0052	Carne Creek;Bird Rock;Nine Mile Pine Plantation;	Artefact Scatter	241105	6303189	18
45-1-0065	Mt Horne Paddys Creek	Axe Grinding Groove, Shelter with Deposit	241205	6299410	-
45-1-0087	Marangaroo Ridge 2;	Shelter with Deposit	232915	6300080	Border of 27
45-1-0088	Marangaroo Ridge 3;	Shelter with Deposit	232955	6299650	Border of 27
45-1-0091	Marangaroo Ridge 1;	Shelter with Deposit	232905	6300140	Border of 27
45-1-0128	2 Newnes State Forest	Shelter with Art	242305	6301290	-
45-1-0129	3 Newnes State Forest	Scarred Tree	242055	6301140	7
45-1-0159	35__PAD 14;Newnes State Forest;	Shelter with Deposit	232095	6302040	-
45-1-0177	CC 3 Newnes SF	Artefact Scatter	242005	6303939	15
45-1-0178	CC 4 NEWNES SF	Artefact Scatter	241955	6304289	15
45-1-0179	CC 5;NEWNES SF;	Artefact Scatter	242205	6301940	-
45-1-0181	Mt Horne_1;NEWNES SF;	Shelter with Art; Grinding Groove	242455	6301390	-
45-1-0182	Mt Horne_2;NEWNES SF;	Shelter with Deposit	242455	6301340	-
45-1-0184	PC 1;NEWNES SF;	Artefact Scatter	240855	6298590	9
45-1-0185	PC 2;NEWNES SF;	Artefact Scatter	241305	6298690	-
45-1-0197	CC 1;NEWNES SF;	Artefact Scatter	242185	6303139	-
45-1-0198	CC 2;NEWNES SF;	Artefact Scatter	242205	6303389	-

AHIMS Site ID	Site Name	Site Type	Eastings	Northings	Survey Unit
45-1-0204	S11;Newnes Plateau;	Shelter with Art	236225	6301090	24
45-1-0205	S10;Newnes Plateau;	Shelter with Art	236305	6301210	24
45-1-0211	S2;Wallerawang;	Artefact Scatter	228805	6300740	Desktop
45-1-0212	GS1;Springvale Colliery;	Artefact Scatter	230805	6300210	-
45-1-2572	Site 1, Castlereagh Highway Realignment, Lidsdale	Artefact Scatter	228535	6301215	-
45-1-2578	Springvale 1	Stone Arrangement	238865	6300567	13
45-1-2600	SV3-ST1	Scarred Tree	238080	6303502	19
45-1-2669	NPSPR55-OS1	Artefact Scatter	240500	6299924	2
45-1-2689	Angus Place Stone Arrangement #1	Stone Arrangement	239700	6305359	-

7.4 Discussion of Survey Results

7.4.1 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, quartzite, chert, mudstone and some silcrete. It was also predicted that the location of the sites would be within 100 m of watercourses.

New sites identified were two scar trees in the central part of the overall Project Application Area, and a shelter with art in a rockshelter complex 50 m outside and to the north of the Project Application Area (**Figure 5**). The rockshelter complex contained a set of two rock overhangs. Only one of these shelters contained any visible evidence of occupation, art and a grinding groove, however the dimensions of the shelters and their proximity to fresh water would have made them suitable for habitation and they were therefore recorded. These new sites bear out the predictive model.

Not all previously recorded sites were able to be re-located and thus updates to the condition of these sites could not be fully 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 relocated. 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 occur in a variety of landscapes, it may be that these types of sites are present within the Project Application Area, beneath the leaf litter. In addition, ground disturbance has taken place over the years through recreational and industrial activities, possibly destroying or dispersing objects such as artefacts.

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

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.

Information imparted by community representatives in relation to AHIMS#45-1-2756/2757 in the field holds that this site is known as a women's area. This cultural knowledge and the presence of the hand stencil increases the site's rarity and representativeness, and consequently its overall significance. In consideration of these factors the site is ranked high on a local level and moderate on a regional level. A site card will be submitted for registration on the AHIMS database.

An opportunity for Aboriginal stakeholder to comment further on the significance of the sites within the Project Application Area was provided along with the draft copy of this report. No comments were made by the Aboriginal stakeholders regarding the significance of any other sites, apart from AHIMS#45-1-2756/2757.

8.2 Archaeological Significance Criteria

Archaeological significance, also referred to as scientific 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. Scientific significance has been assessed according to scientific criteria outlined in OEH guidelines (April 2011) and is summarised in **Table 14**.

Table 14 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 criteria 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.

Criteria	Description
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 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 provides enables an overall significance ranking of the site to be determined.

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

8.3 Assessment of Archaeological significance

The archaeological significance of the identified Aboriginal sites has been assessed and is summarised in **Table 15**.

Table 15 Assessed levels of archaeological significance

AHIMS Site ID	Site	Site type	Significance scale	Rarity	Representativeness	Integrity	Connectedness	Complexity	Research Potential	Total	Overall Significance
45-1-2756/ 2757	RPS SV RS1 Rockshelter complex	Complex (Shelter A and Shelter B)	Local	3	3	3	3	3	3	18	High
			Regional	3	3	3	3	3	3	18	High
45-1-2758	RPS SV ST 1	Scarred tree	Local	1	2	1	1	1	1	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-2759	RPS SV ST 2	Scarred tree	Local	1	2	1	1	1	1	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-2739	RPS Spvale 1	Isolated find	Local	1	1	1	1	1	1	6	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0002	Bungleboori; Old Bells Line Track	Grinding Groove	Local	1	2	2	2	2	2	11	Moderate
			Regional	1	2	2	2	2	2	11	Moderate
45-1-0005	Old Bells Line Track	Grinding Groove	Local	1	2	2	2	2	2	11	Moderate
			Regional	1	2	2	2	2	2	11	Moderate
45-1-0008	Lidsdale; Kerosene	Shelter	Local	1	1	1	1	1	2	7	Low

AHIMS Site ID	Site	Site type	Significance scale	Rarity	Representativeness	Integrity	Connectedness	Complexity	Research Potential	Total	Overall Significance
	Vale	with Deposit	Regional	1	1	1	1	1	1	6	Low
45-1-0051	Nine Mile Pine Plantation; Carne Creek	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0052	Carne Creek; Bird Rock; Nine Mile Pine Plantation; artefact scatter	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0065	Mt Horne Paddys Creek	Shelter with Deposit; Grinding Groove	Local	3	3	2	2	3	2	15	High
			Regional	1	2	2	2	2	2	11	Moderate
45-1-0087	Marangaroo Ridge 2;	Shelter with Deposit	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0088	Marangaroo Ridge 3;	Shelter with Deposit	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0091	Marangaroo Ridge 1;	Shelter with Deposit	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0128	2 Newnes State Forest	Shelter with Art	Local	3	3	2	2	2	1	13	Moderate
			Regional	2	1	1	1	1	1	7	Low
45-1-0129	3 Newnes State Forest	Scarred Tree	Local	2	2	2	2	2	1	11	Moderate
			Regional	1	1	1	1	1	1	6	Low
45-1-0159	35__PAD 14; Newnes State Forest;	Shelter with Deposit	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0177	CC 3 Newnes SF	Artefact Scatter	Local	1	1	1	1	1	1	6	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0178	CC 4 NEWNES SF	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0179	CC 5; NEWNES SF;	Artefact Scatter	Local	2	2	2	2	2	2	12	Moderate
			Regional	2	1	1	1	1	2	8	Low
45-1-0181	Mt Horne_1; NEWNES SF; close to boundary	Shelter with Art; Grinding Groove	Local	1	3	2	2	1	2	11	Moderate
			Regional	1	3	2	2	1	2	11	Moderate
45-1-0182	Mt Horne_2; NEWNES SF;	Shelter with Deposit	Local	1	2	2	2	2	2	11	Moderate
			Regional	1	1	1	1	1	1	6	Low

AHIMS Site ID	Site	Site type	Significance scale	Rarity	Representativeness	Integrity	Connectedness	Complexity	Research Potential	Total	Overall Significance
45-1-0184	PC 1;NEWNES SF;	Artefact Scatter	Local	1	1	1	1	1	1	6	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0185	PC 2;NEWNES SF; artefact scatter	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0197	CC 1;NEWNES SF;	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0198	CC 2;NEWNES SF;	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0204	S11;Newnes Plateau; close to boundary; Shelter	Shelter with Art	Local	2	3	2	2	2	2	13	Moderate
			Regional	1	2	2	2	2	2	11	Moderate
45-1-0205	S10;Newnes Plateau; close to boundary; shelter	Shelter with Art	Local	3	3	2	2	2	2	14	High
			Regional	2	2	2	2	2	2	12	Moderate
45-1-0211	S2;Wallerawang;	Artefact Scatter	Local	1	1	1	1	1	2	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-0212	GS1;Springvale Colliery;	Artefact Scatter	Local	1	1	1	1	2	1	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-2572	Site 1, Castlereagh Highway Realignment, Lidsdale	Artefact Scatter	Local	1	1	1	1	2	1	7	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-2578	Springvale 1	Stone Arrange ment	Local	2	2	1	1	1	1	8	Low
			Regional	2	1	1	1	1	1	7	Low
45-1-2600	SV-ST1	Scarred Tree	Local	2	2	2	2	2	1	11	Moderate
			Regional	1	1	1	1	1	1	6	Low
45-1-2669	NPSPR55-OS1;	Artefact Scatter	Local	1	1	1	1	1	1	6	Low
			Regional	1	1	1	1	1	1	6	Low
45-1-2689	AngusPlaceStoneArr angement#1	Stone Arrange ment	Local	2	2	1	1	1	1	8	Low
			Regional	2	1	1	1	1	1	7	Low

8.4 Historic Heritage Significance Assessment

The Project Application Area has no historic heritage items inside the boundary. Consequently, no listed historic heritage items are at risk of impact from the proposed Project.

9.0 Impact Assessment and Mitigation

Thirty-four (34) Aboriginal sites have been identified in the Project Application Area or within 50 m of its boundary; 22 of these sites are inside the Project Application Area and the remaining 12 are within 50 m of its boundary on the outside. Of these the MSEC subsidence report indicates nine are at risk of being impacted by subsidence and of these, only three are potentially at risk of harm. The impact avoidance and minimisation mitigation measures are therefore directed entirely at these three sites (**Table 16**).

Numerous mine plan options and variations were considered by Springvale 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

A draft subsidence report has been provided by MSEC (2013) for this Project and includes an impact assessment of the cultural heritage sites within the Project Application Area as a result of predicted subsidence values.

Of the sites identified within the Project Application Area, the site types most likely to be affected by subsidence are rockshelters and grinding grooves (see Section 9.2). The report also indicates that even a high level of subsidence is unlikely to affect scarred trees (MSEC 2013:86) and stone arrangements. Open sites (artefact scatters) will experience surface soil cracking caused by subsidence in their vicinity but it is unlikely they would be affected by surface cracking causing harm (MSEC 2013:85). In addition, it is known that subsidence does not affect scar trees to any adverse degree. This is evidenced by a three year monitoring programme at Centennial's Awaba mine. The monitoring began in August 2010 of Aboriginal scar tree RPS ST 01. The site was assessed to have high significance in terms of rarity on a local scale (RPS, 2010:4). Mining under the Scarred Tree occurred in August 2010. Results show the site has now stabilised. The maximum tilt has remained at less than 1 degree and there was no evidence of surface cracking observed. The tree is in good condition and remains unaffected by subsidence.

MSEC (2013:86) consider that even if the scar trees were to experience subsidence twice the expected subsidence levels, it would be unlikely that they would be adversely impacted as a result of the extraction of the proposed longwalls. This is largely due to the fact that the depth of cover is in excess of 300 metres and the natural surface gradients are typically less than 1 in 1. Where scar trees have been affected elsewhere in the past the depth of cover has been shallow (50m or less). Hence, the scar tree sites have been dismissed as requiring specific mitigation measures directed towards them.

9.2 Potential Impacts

Not all sites within the Project Application area are located in the Extension Area and as such only the sites which are predicted to experience impacts from subsidence are listed in Table 16 below. According to projections by MSEC (2013:84-85) there are nine sites that will experience subsidence, to varying degrees. Predictions for the sites which are located within the "Extension Area", are based on the 26.5 degree angle of draw from the limit of the proposed longwalls (i.e. LW416 to LW432, and LW501 to LW503) and the predicted 20 mm subsidence contour due to the extraction of the proposed longwalls. **Figure 6** shows the AHIMS sites and recorded new sites inside the Project Application Area, and their locations in relation to the proposed longwalls.

Table 16 Archaeological sites predicted to experience subsidence (MSEC 2013:85)

Site Reference	Location	Description
45-1-0002	Above the chain pillar between the proposed LW428 and LW429	Axe Grinding Groove
45-1-0005	Above the main headings, 120 m north of the proposed LW426	Axe Grinding Groove
45-1-0051	Above the proposed LW422	Artefact Scatter
45-1-0065	200 m east of the proposed LW424	Axe Grinding Groove and Shelter with Deposit
45-1-0184	Above the proposed LW424	Artefact Scatter
45-1-2578	Above the proposed LW430	Stone Arrangement
45-1-2600	Above the approved LW415	Scarred Tree
45-1-2669	Above the proposed LW425	Artefact Scatter
45-1-2739	20 m east of the proposed LW419	Isolated Find

Of the nine archaeological sites listed above only three are potentially at risk of harm from predicted subsidence. These are AHIMS sites #45-1-0002 (grinding groove), #45-1-0005 (grinding groove) and #45-1-0065 (Shelter with deposit; grinding groove):

Table 17 Maximum predicted total conventional subsidence and tilt (MSEC 2013:85)

Sites	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})
#45-1-0002	900	3	0.04	0.03
#45-1-0005	50	<0.5	< 0.01	< 0.01
#45-1-0065	25	<0.5	< 0.01	< 0.01

Table 17 shows that the greatest subsidence is predicted for grinding groove site #45-1-0002, where the 900 mm maximum predicted total conventional subsidence value may cause the sandstone in which the grinding groove is located to crack:

The maximum predicted conventional strains for this site, based on applying a factor of 10 to the maximum predicted conventional curvatures, are around 0.5 mm/m tensile and compressive. Fracturing in bedrock has been observed in the past, as a result of longwall mining, where tensile strains were greater than 0.5 mm/m or where compressive strains were greater than 2 mm/m (MSEC 2013:86).

As such, the fracturing of bedrock could occur in the vicinity of site #45-1-0002 (MSEC 2013: 86) and as such it is this site that is at greatest risk of harm.

MSEC discuss a preventative measure that could be attempted to minimise the impact, which entails slotting the bedrock around site# 45-1-0002 to isolate ground curvatures and strains from acting upon it. However, this method is dismissed by them as it is likely to cause more damage (MSEC 2013:86) to the grinding grooves, than the predicted subsidence from mining. As such this measure has been dismissed by RPS as a potential mitigation measure.

With regard to the other two sites, #45-1-0005 and #45-1-0065, these sites are located 120 m and 200 m beyond the extents of the longwalls and therefore will not be directly affected by subsidence. As noted above, the predicted subsidence levels are 50 mm and 25 mm respectively. Measurable conventional tilts, curvatures or strains are negligible and are not expected to harm these two sites. It is therefore reasonable to expect, based on the MSEC findings that harm to sites #45-1-0005 and #45-1-0065 is highly unlikely. The MSEC report even goes as far to say that even if predictions at site 45-1-0065 were doubled it would still be unlikely to experience an adverse impact (MSEC 2013:86).

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 the three sites in **Table 17** (Section 9.2). AHIMS sites #45-1-0002 (grinding groove), #45-1-0005 (grinding groove) and #45-1-0065 (Shelter with deposit; grinding groove) will require 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)
- 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 rockshelter/grinding groove site #45-1-0002, #45-1-0005 and #45-1-0065, 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 taking photographs 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 Springvale Coal 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 after 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, Springvale Coal 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 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.

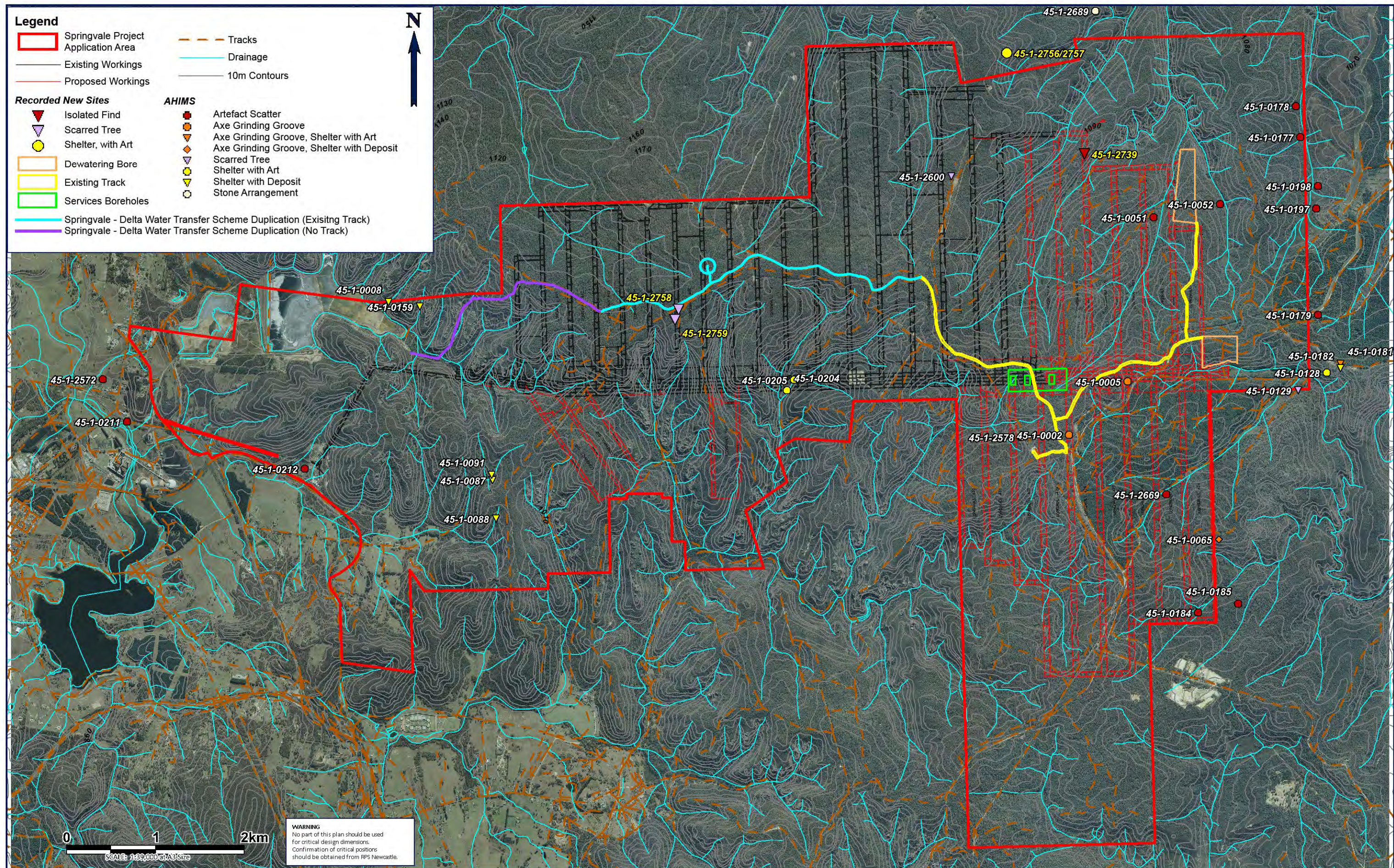
Phase 3a: (Longwall Mining) - In instances where final subsidence is not achieved until after a number of longwall extractions have taken place, then additional inspections by a qualified cultural heritage consultant may be required to assess any further risks to Aboriginal sites.

9.4 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 (over 80%) have nil to low risk of impact and that only three of the 34 sites have been identified to be at potential risk of 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. Given that the proposed project represents nil – low chance of impact to Aboriginal heritage, there will be nil detrimental effects on intergenerational equity with future generations able to access the sites described in this report should they chose to do so.



10.0 Conclusions and Recommendations

The study and field surveys recorded 34 Aboriginal cultural heritage sites in the Project Application Area or within 50 m on the outside of the Project Application Area boundary. With regard to these sites it has been ascertained that of the 34 sites, three are at potential risk of harm from subsidence. The remaining 31 Aboriginal heritage sites are 'unlikely' or 'very unlikely' to be impacted by the extraction of the proposed longwalls. As such, it has been assessed that three sites (see **Table 16**) 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 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 assessed as a state significant development in accordance with the *Environmental Planning and Assessment Act 1979*.

Recommendation 1

Site #45-1-0002, a grinding groove site, was originally recorded in 1977 and in the last 35 years the area has been used for recreational purposes. The predicted subsidence effects discussed in Section 9 for this site indicate that cracking in the sandstone bedrock may occur, which would destroy the grinding groove site. The recent survey was unable to find any evidence remaining of the two grinding grooves due to the extensive surface damage to the flat lying sandstone rocks and rubbish dumping that has also occurred. The site should be monitored in any case as set out in Section 9.3.1.

Recommendation 2

The three sites subject to predicted subsidence (Table 17) as a result of the proposed extension of Springvale Colliery must be monitored in accordance with 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

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

Recommendation 4

All relevant Springvale Coal 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.

Recommendations 5

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.

11.0 References

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12.0 Plates



Plate 1 Camping area in survey unit 1



Plate 2 Seven grinding grooves and associated wells (part of AHIMS Site #45-1-0065) in survey unit 1



Plate 3 Shelter with deposit (part of AHIMS Site #45-1-0065) in survey unit 1



Plate 4 Recorded location for artefact scatter AHIMS Site #45-1-2669 in survey unit 2 – no artefacts found.



Plate 5 Recorded location for AHIMS Site #45-1-0002 in survey unit 3 -grinding grooves not visible.



Plate 6 Flat sandstone surface near AHIMS Site #45-1-0002 in survey unit 3 -note crushed sandstone.



Plate 7 Camping area near crest in survey unit 4



Plate 8 Cleared area in survey unit 5



Plate 9 Example of vegetation in survey unit 5



Plate 10 Harvested area of the Pine Plantation in survey unit 6



Plate 11 Recorded location of AHIMS Site #45-1-0179.



Plate 12 Rock overhang in survey unit 7



Plate 13 Scarred tree – AHIMS Site #45-1-0129 in survey unit 7



Plate 14 Example of vegetation in survey unit 8



Plate 15 Dam in survey unit 9



Plate 16 View of area of recorded AHIMS Site #45-1-0184 in survey unit 9



Plate 17 Recorded location of AHIMS Site #45-1-0185 in survey unit 9



Plate 18 Access track in survey unit 10



Plate 19 Vegetation growth in survey unit 11



Plate 20 Access track within survey unit 12



Plate 21 Survey unit 13 – powerline easement.



Plate 22 Survey unit 14 – ground surface visibility.



Plate 23 Survey unit 14 – flat lying sandstone outcrop.



Plate 24 Recorded location of AHIMS Site #45-1-0197 in survey unit 15



Plate 25 Recorded location of AHIMS Site #45-1-0198 in survey unit 15



Plate 26 Vegetation and geography in survey unit 16



Plate 27 Recorded location of AHIMS Site #45-1-0051 in survey unit 17



Plate 28 Recorded location of Site AHIMS #45-1-0052 in survey unit 18



Plate 29 RPS SV RS1 Shelter A in Survey Unit 19 showing stencil on back wall and ochre & stone on floor



Plate 30 Site RPS SV RS1 Shelter A - detail of hand stencil in Shelter A



Plate 31 RPS SV RS1 Shelter A - grinding stone on floor of Shelter A



Plate 32 RPS SV RS1 Shelter A - hardened ochre on floor of Shelter A



Plate 33 RPS SV RS1 Shelter B - survey unit 19



Plate 34 Survey unit 19 RPS SV RS1 Shelter B –possible charcoal on roof



Plate 35 Survey unit 19 – Scar on one side of AHIMS #45-1-2600



Plate 36 Survey unit 19 – Clearing near AHIMS #45-1-2600



Plate 37 Survey unit 20 – showing vegetation affected by recent bush fire.



Plate 38 Survey unit 21 – vegetated slopes



Plate 39 Survey unit 22 – fast flowing creek with sandstone bed



Plate 40 Survey unit 22 – dense undergrowth near to ephemeral creek line



Plate 41 Waterfall with sandstone bedrock in survey unit 23



Plate 42 Vegetation in survey unit 23



Plate 43 [AHIMS 45-1-2739](#) – isolated find site location in survey unit 23



Plate 44 [AHIMS 45-1-2739](#) – isolated find milky quartz core in survey unit 23



Plate 45 Art from AHIMS #45-1-0204 in survey unit 24



Plate 46 Sandstone pagodas in survey unit 25



Plate 47 Electricity easement and access track in survey unit 26



Plate 48 Access track, looking south towards sandstone overhang in survey unit 27



Plate 49 Looking south along ridge line in survey unit 28



Plate 50 Vegetation in survey unit 29



Plate 51 Sandstone ridge in survey unit 30



Plate 52 View of the gully from elevated sandstone pagodas, facing southwest



Plate 53 Example of vegetation in survey unit 31



Plate 54 RPS SV ST1 (AHIMS# 45-1-2758), on boundary of survey unit 31



Plate 55 RPS SV ST2 (AHIMS# 45-1-2759), in survey unit 31



Plate 56 Disturbance in survey unit 35



Plate 57 Beecroft Track and disturbance in the survey unit



Plate 58 Drainage channel that leads into the swampy area



Plate 59 Swamp area leading into Sawyers Swamp



Plate 60 Vegetation in the swampy area

Appendix I

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 and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act), Amendment 2006

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 would appear that the intention of this Act is to provide national baseline protection for Aboriginal places and objects where State legislation is absent. 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).

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 as 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 in NSW includes but is not limited to:

National Parks & Wildlife Act 1974 (NPW Act)

The *NPW Act (1974)* 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 Department of Environment, Climate Change and Water (DECCW) and specifically the Director-General of DECCW. Part 6 of this Act is the relevant part concerned Aboriginal objects and places, with the 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:

- (i) A person must not harm an object that the person knows is an Aboriginal object;
- (ii) A person must not harm an Aboriginal object;
- (iii) 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.
- (iv) 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 offices of the National Parks & Wildlife Service in the performance of their duties and s87B for Aboriginal people performing traditional activities.

Section 89A

This section provides that a person who knows of an Aboriginal object or place and does not advise the Director-General of that object or place within a reasonable period of time, is guilty of an offence.

Section 90

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

Section 90A-90R

These sections govern the requirements relating to applying for an AHIP. In addition to the amendments to the Act, DECCW have issued three new policy documents clarifying DECCW’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 include details regarding the parties required to be consulted and the methods of establishing the necessary stakeholders 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)

DECCW 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 DECCW guidelines are triggered for Aboriginal consultation.

Aboriginal Cultural Heritage Consultation Requirements for Proponents

In 2010, the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs) were issued by DECCW (12th of 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 April 12, 2010; for projects commenced prior to April 12, 2010 transitional arrangements have been stipulated in a supporting document, Questions and Answers 2: Transitional Arrangements.

The ACH Consultation Requirements 2010, 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. 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 DECCW EPRG regional office, the relevant Local Aboriginal Land Council(s), the registrar, 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 interest (Eol) for Aboriginal consultation. Once a list of Aboriginal stakeholders has been compiled from the Eols, they need to be consulted in accordance with ACH Consultation Requirements Stages 2, 3 and 4.

For projects commenced before the 12th of April, 2010, Section 1 (Q1) of the transitional arrangements indicates that if Aboriginal consultation was commenced prior to the 12th of April 2010 (including advertising and notification of stakeholders) then consultation is to be continued under the previous ICCR guidelines.

Interim Community Consultation Requirements (ICCR) for Applicants (DEC 2004) required a three stage process of which timeframes were stipulated for specific components. Stage 1 required the notification and registration of interests. Notification included an advertisement in a local print media, as well as, as contacting the Local Aboriginal Land Council(s), the registrar of Aboriginal Owners, Native Title Services, local council(s) and the Department of Environment and Conservation. Stage 1 also required the invitation for expressions of interest (Eol) to be sent to interested Aboriginal parties and an Aboriginal stakeholder list compiled. Stage 2 required the preparation of an assessment design to be sent to the Aboriginal stakeholders for comment and review. Stage 3 required that the assessment report be provided to registered Aboriginal stakeholders for review and comment.

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 (1979)*, 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 (1979)*.

In brief, the *NPW Act (1974)* provides protection for Aboriginal objects or places, while the *EP&A Act (1979)* ensures that Aboriginal cultural heritage is properly assessed in land use planning and development.

Part 3A of the *EP&A Act (1979)* relates to major projects and if applicable, obviates the need to conform to other specific legislation. In particular, s75U of the *EP&A Act (1979)* explicitly removes the need to apply for s87 or s90 permits under the *NPW Act (1974)*. This means that although Aboriginal cultural heritage is considered during the planning process, a permit is not required to disturb or destroy an Aboriginal object or place. However, the Director-General of Planning must nonetheless consult with other government agencies, including DECCW and National Parks & Wildlife, prior to any decision being made.

Aboriginal consultation under part 3A is required under the *draft 2005 Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*. This document stipulates that the ICCR process should be adhered to.

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 2001)*, 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 6 th 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
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

Date	Consultation Description	Method of Contact	Outcomes
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-Wiradjuri People represented by: Ms Wendy Lewis, Ms Maria 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) ▪ 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).	Letter	N/A

Date	Consultation Description	Method of Contact	Outcomes
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	
21/12/2011	Gundungurra Tribal Council Aboriginal Corporation responded to the methodology	Response	
21/12/2011	North East Wiradjuri responded to the methodology	Response	
20/12/2011	Wiray-dyuraa Ngambaay-dyil and Wiray-dyuraa Maying-gu 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	
31/1/2012 and 18/4/2012-27/4/2012	Fieldwork undertaken with the following participants: Warrabinga Native Title Claimants Aboriginal Corporation (Jack Pennell), Bathurst Local Aboriginal Land Council (Chantel Peters-Chapman), Mingaan Aboriginal Corporation (Elwin Wolfenden), Native Title Bathurst (Tim Lucas), Native Title Lithgow (Brendan Mingaan), North East Wiradjuri (Toni Wilcock), Gundungurra Tribal Council Aboriginal Corporation (Jason Brown)	Fieldwork	
4/01/2012	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	

Date	Consultation Description	Method of Contact	Outcomes
12/01/2012	Lance Syme of Warrabinga Native Title Claimants Aboriginal Corporation emailed through a copy of their insurance information	Email	
20/01/2012	Email to Sharon Brown of GTCAC advising that fieldwork will begin on 31 January 2012	Email	
20/01/2012	Email to Lyn Syme of NE Wiradjuri Co. advising that fieldwork will begin on 31 January 2012	Email	
20/01/2012	Email to Elwin Wolfenden (Mingaan) confirming that fieldwork will begin on 31 January 2012	Email	
25/01/2012	Email to Tonilee Scott (Bathurst LALC) advising that fieldwork will begin on 31 January 2012	Email	
25/01/2012	Email to Elwin Wolfenden (Mingaan) confirming that fieldwork will begin on 31 January 2012	Email	
25/01/2012	Email from Helen Riley (Mingaan) advising she would pass on the information regarding fieldwork to Elwin Wolfenden	Email	
31/01/2012	Fieldwork conducted with representatives from Mingaan Aboriginal Corporation, Warrabinga, Bathurst LALC	Fieldwork	
13/04/2012	Email sent to Tonilee Scott (Bathurst LALC) advising of fieldwork and induction details	Email	
13/04/2012	Email sent to Warrabinga NTCAC advising of fieldwork and induction details	Email	
13/04/2012	Email sent to Lyn Syme (NE Wiradjuri Co.) advising of fieldwork and induction details	Email	
13/04/2012	Email sent to Helen Riley (Mingaan) advising of fieldwork and induction details	Email	
13/04/2012	Email received from Helen Riley (Mingaan) advising that site workers would be available for the fieldwork	Email	
13/04/2012	Email sent to Helen Riley (Mingaan) requesting the name(s) of nominated site officer(s)	Email	
13/04/2012	Email received from Helen Riley (Mingaan) advising that Elwin Wolfenden would be the site officer representing Mingaan, and that Brendon and Tim would represent Native Title Lithgow and Native Title Bathurst respectively	Email	
13/04/2012	Confirmation email received from Helen Riley (Mingaan) advising that Elwin Wolfenden would be the site officer representing Mingaan, and that Brendon and Tim would represent Native Title Lithgow and Native Title Bathurst respectively	Email	
13/04/2012	Email sent to Sharon Brown (Gundungurra) advising of fieldwork and induction details	Email	
17/04/2012	Email sent to Helen Riley (Mingaan) advising that Elwin, Tim and Brendon could attend the fieldwork, but that only one representative could attend per day as there would be limited space in the field cars	Email	
17/04/2012	Email sent to Sharon Brown (Gundungurra) advising of fieldwork and induction details, and requesting a response to previous correspondence	Email	
17/04/2012	Email from Sharon Brown (Gundungurra) advising that Edward Trindall would be the site officer for the fieldwork, and asking for details regarding invoicing	Email	
17/04/2012	Email to Tonilee Scott of Bathurst Local Aboriginal Land Council requesting information regarding the nominated site officer for fieldwork	Email	
17/04/2012	Email from Tonilee Scott of Bathurst Local Aboriginal Land Council advising that Chantel Peters would be the site officer for Bathurst LALC, and requesting invoicing details	Email	

Date	Consultation Description	Method of Contact	Outcomes
17/04/2012	Email to Tonilee Scott of Bathurst Local Aboriginal Land Council thanking her for advising that Chantel Peters would participate in the fieldwork, and providing invoicing details	Email	
17/04/2012	Email to Warrabinga requesting a response to previous emails	Email	
17/04/2012	Email received from Lance Syme of Warrabinga advising that Jack Pennell would be the site officer present	Email	
17/04/2012	Email to Lance Syme of Warrabinga confirming that Jack Pennell as site officer	Email	
17/04/2012	Email to Lyn Syme of NE Wiradjuri Co. requesting a response to previous emails	Email	
17/04/2012	Email from Lyn Syme of NE Wiradjuri Co. advising that site officers would be available from both Warrabinga and NE Wiradjuri, and also advising RPS not to schedule fieldwork with site officers directly, but to through Lyn Syme, Lance Syme or Robyn Williams	Email	
17/04/2012	Fieldwork conducted with representatives from Mingaan Aboriginal Corporation and Bathurst Native Title	Fieldwork	
18/04/2013	Fieldwork conducted with representatives from Warrabinga, Bathurst LALC and North East Wiradjuri Co.	Fieldwork	
18/04/2012	Email sent to Sharon Brown (Gundungurra) thanking her for her email and providing invoicing details	Email	
19/04/2012	Phone call from Helen Riley (Mingaan) requesting to discuss why site officers from the Native Title Claimants Group were turned away from fieldwork that day	Phone	
19/04/2012	Email from the Mingaan Aboriginal Corporation advising that site officers from both Mingaan and the Wiradjuri NT Claimants Group would be attending the Springvale fieldwork, as they have a registered interest with the Centennial projects	Email	
17/04/2012	Fieldwork conducted with representatives from Bathurst LALC, Gundungurra Tribal Aboriginal Corporation and Warrabinga	Fieldwork	
20/04/2012	Email from the Mingaan Aboriginal Corporation requesting a meeting to clarify issues related to the email sent on 19/04/2012	Email	
20/04/2012	Fieldwork conducted with representatives from Warrabinga, Bathurst LALC and North East Wiradjuri Co.	Fieldwork	
21/04/2012	Email from Lyn Syme of NE Wiradjuri requesting invoicing details for the fieldwork	Email	
21/04/2012	Email to Lyn Syme of NE Wiradjuri providing invoicing details for the fieldwork	Email	
23/04/2012	Email from the Mingaan Aboriginal Corporation asking if fieldwork will be conducted on the public holiday on 25/04/2012	Email	
23/04/2012	RPS emailed the Mingaan Aboriginal Corporation advising that fieldwork would not be conducted on the public holiday on 25/04/2012	Email	
24/04/2012	Fieldwork conducted with representatives from Mingaan Aboriginal Corporation, Bathurst Native Title, Lithgow Native Title, Gundungurra, Warrabinga and North East Wiradjuri Co.	Fieldwork	
26/04/2012	Fieldwork conducted with representatives from Mingaan Aboriginal Corporation, Bathurst Native Title, Lithgow Native Title, Gundungurra, Warrabinga, North East Wiradjuri Co. and Bathurst LALC	Fieldwork	

Date	Consultation Description	Method of Contact	Outcomes
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)	
17/05/2013	Telephone call from DF to Lyn Syme of North East Wiradjuri	Phone	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork
17/05/2013	Email to Sharon Brown of GTCAC	Email	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork
17/05/2013	Email to Helen Riley of Mingaan	Email	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork
17/05/2013	Email to Sharon Riley of Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu	Email	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork
17/05/2013	Email to Glynis Moore of Warrabinga Native Title Claimants Aboriginal Group	Email	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork
17/05/2013	Email to Tonilee Scott of Bathurst Local Aboriginal Land Council	Email	Springvale Pipeline Additional Work: Brief outline of project and methodology; requesting availability for fieldwork

Date	Consultation Description	Method of Contact	Outcomes
17/05/2013	Email to Lyn Syme of North East Wiradjuri	Email	Springvale Pipeline Additional Work: Confirming phone call; requesting availability
19/05/2013	Email from Lyn Syme of N E Wiradjuri	Email	Springvale Pipeline Additional Work: Confirming an officer will be available; requesting further details of project.
20/05/2013	Phone call from KV to Sharon Brown of GTCAC	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - advised someone will be available on those dates, requested further info via email
20/05/2013	Phone call from KV to Helen Riley of Mingaan	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - advised someone will be available on those dates, requested further info via email
20/05/2013	Phone call from KV to Sharon Riley of Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - advised someone will be available on those dates, requested further info via email
20/05/2013	Phone call from KV to Glynis Moore of Warrabinga Native Title Claimants Aboriginal Group	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - advised someone will be available on those dates, requested further info via email

Date	Consultation Description	Method of Contact	Outcomes
20/05/2013	Phone call from KV to Tonilee Scott of Bathurst Local Aboriginal Land Council	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - advised someone will be available on those dates, requested further info via email
20/05/2013	Phone call from KV to Lyn Syme of North East Wiradjuri	Email	Springvale Pipeline Additional Work: General enquiry about fieldwork availability for 30/31st May - no answer, left a message
20/05/2013	Email from KV to Sharon Brown of GTCAC	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork
20/05/2013	Email from KV to Helen Riley of Mingaan	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork
20/05/2013	Email from KV to Sharon Riley of Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork
20/05/2013	Email from KV to Glynis Moore of Warrabinga Native Title Claimants Aboriginal Group	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork
20/05/2013	Email from KV to Tonilee Scott of Bathurst Local Aboriginal Land Council	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork
20/05/2013	Email from KV to Lyn Syme of North East Wiradjuri	Email	Springvale Pipeline Additional Work: Details of fieldwork; requesting availability for fieldwork

Date	Consultation Description	Method of Contact	Outcomes
21/05/2013	Phone call from Sharon Riley of Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu	Phone	Springvale Pipeline Additional Work: Patsy Wolfenden will be attending on 30/31, and Elwin Wolfenden for Mingaan - insurances come under Mingaan, best to ask Helen Riley.
21/05/2013	Email to DF from Sharon Brown of GTCAC	Email	Springvale Pipeline Additional Work: Confirmed a site officer is available, asked for more information. DF replied that the fieldwork will be next week (30/31st)
23/05/2013	KV called Helen Riley (Mingaan) regarding insurances	Phone	Springvale Pipeline Additional Work: Insurances will be emailed through
23/05/2013	KV called Lyn Syme (NE Wiradjuri) regarding insurances and nominated site officer	Phone	Springvale Pipeline Additional Work: No answer, left a message
23/05/2013	KV emailed Lyn Syme (NE Wiradjuri) regarding insurances and nominated site officer	Email	Springvale Pipeline Additional Work: Awaiting response
23/05/2013	KV called Wendy Lewis (Warrabinga) regarding insurances and nominated site officer	Phone	Springvale Pipeline Additional Work: No answer, no message system
23/05/2013	Mingaan emailed insurances to KV	Email	Springvale Pipeline Additional Work: Insurances put on file
23/05/2013	KV emailed Glenys Moore (Warrabinga) regarding insurances and nominated site officer	Email	Springvale Pipeline Additional Work: Awaiting response
23/05/2013	Glenys Moore (Warrabinga) emailed KV regarding insurances and nominated site officer	Email	Springvale Pipeline Additional Work: Glenys advised that she had passed on the request and we should have a response tomorrow
23/05/2013	Lyn Syme (NE Wiradjuri) called and confirmed that she should email through the nominated site officer and insurances	Email	Springvale Pipeline Additional Work: Awaiting email
24/05/2013	KV emailed Warrabinga with details of survey and requesting insurances and site officer name	Email	Springvale Pipeline Additional Work: Awaiting response
24/05/2013	KV emailed Lyn Syme (NE Wiradjuri) with details of survey and requesting insurances and site officer name	Email	Springvale Pipeline Additional Work: Awaiting response

Date	Consultation Description	Method of Contact	Outcomes
29/05/2013	KV emailed Robyn Williams and Glenys Moore (Warrabinga) to confirm dates and personnel for field work	Email	Springvale Pipeline Additional Work: Confirmed via email that Gail Ratcliffe would be the attending site officer
29/05/2013	KV emailed and called Lyn Syme (NE Wiradjuri) to confirm dates and personnel for field work	Phone and Email	Springvale Pipeline Additional Work: Donna Whillock confirmed as site officer
29/05/2013	KV emailed and called Sharon Brown (GTCAC) to confirm dates and personnel for field work	Phone and Email	Springvale Pipeline Additional Work: Nathan Brown confirmed as site officer
29/05/2013	KV emailed and called Helen Riley (Mingaan) to confirm dates and personnel for field work	Phone and Email	Springvale Pipeline Additional Work: Elwin Wolfenden confirmed as site officer
29/05/2013	KV emailed and called Sharon Riley (Wiraydyuraa Ngambaay-dyil & Wiray-dyuraa Maying-gu) to confirm dates and personnel for field work	Phone and Email	Springvale Pipeline Additional Work: Patsy Wolfenden confirmed as site officer
29/05/2013	KV emailed and called Bathurst LALC to confirm dates and personnel for field work	Phone and Email	Springvale Pipeline Additional Work: Chantel Peters confirmed as site officer
30/05/2013	Field work conducted with E. Wolfenden, P. Wolfenden, G. Ratcliffe, C. Peters, D. Whillock	Field Work	Springvale Pipeline Additional Work: N/A
31/05/2013	Helen Riley (Mingaan) called KV regarding Purchase Orders and invoicing.	Phone and Email	Springvale Pipeline Additional Work: KV gave Helen her PO number (via Iain Hornshaw) and also provided her with a mailing address
7/06/2013	PS sent a copy of the draft report to Wiradjuri Council of Elders, Bathurst LALC, Mooka Traditional Owners, Gundungarra Tribal Council Aboriginal Corporation, Mingaan Aboriginal Corporation, North-East Wiradjuri Company, Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu, Warrabinga Native Title Claimants	Mail	Springvale Pipeline Additional Work: Awaiting response
17/06/2013	Tonilee Scott (Bathurst LALC) called KV regarding Purchase Orders and invoicing.	Phone and Email	Springvale Pipeline Additional Work: KV emailed Tonilee her PO and invoicing information
18/06/2013	KV emailed Tonilee Scott (Bathurst LALC) with Purchase Orders and invoicing details	Email	
19/06/2013	KV requested contact details for 'Warrabinga/Wiradjuri People Native Title Claimants'	Email	Email response from Robyn Williams advised that this group falls under the 'Warrabinga Native Title Claimants Aboriginal Corporation'

Date	Consultation Description	Method of Contact	Outcomes
19/06/2013	KV requested contact details for 'Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants'	Email	Sharon advised that the address for this group is 14 Oak Street, Katoomba (Mervyn Trindall and Elsie)
20/06/2013	KV asked if a copy of the draft report addressed to 'Warrabinga/Wiradjuri People Native Title Claimants' could be sent to the address that is on file for 'Warrabinga Native Title Claimants Aboriginal Corporation', or if there are alternative contact details	Email	Awaiting response
26/06/2013	KV sent a copy of the draft report to Mervyn Trindall and Elsie Stockwell of Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants	Mail	N/A
26/06/2013	KV sent a copy of the draft report to Wendy Lewis of Warrabinga/Wiradjuri People Native Title Claimants	Mail	N/A
27/06/2013	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
11/07/2013	KV called GTCAC, Warrabinga, NE Wiradjuri, Wiray, Mingaan, and Bathurst LALC requesting comments on draft report	Phone	Left a message for GTCAC, NE Wiradjuri, Wiray, Mingaan and Bathurst LALC.
11/07/2013	KV received a voicemail from Lyn Syme of NE Wiradjuri regarding comments on the draft report.	Phone	KV tried to return Lyn Syme's call, but got message bank again.
11/07/2013	KV emailed GTCAC, Warrabinga, NE Wiradjuri, Wiray, Warrabinga, Mingaan, Wiradjuri Council of Elders and Bathurst LALC requesting comments on draft report	Email	Awaiting responses. Mooki Traditional Owners could not be contacted as there is no available phone/email address for this organisation
11/07/2013	KV received an email from Lyn Syme of NE Wiradjuri, advising that Donna Whillock had received a copy of the draft report and will provide comments ASAP	Email	Awaiting response
18/07/2013	Discussion between Iain Hornshaw of Centennial Coal and representatives of GTCAC regarding Angus Place, Springvale and Clarence projects		
29/07/2013	KV requested contact details for 'Warrabinga/Wiradjuri People Native Title Claimants', and asked if there were any comments on the Springvale draft report	Email	Awaiting response
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
08/08/2013	KV sent a copy of the final report to Warrabinga Native Title Claimants Aboriginal Corporation, Bathurst Local Aboriginal Land Council, Mingaan Aboriginal Corporation, Wiraydyuraa Ngambaay-dyil & Wiraydyuraa Maying-gu Native Title Claimants, GTCAC, NE Wiradjuri, Mooka Traditional Owners, Wiradjuri Council of Elders, Gundungarra Tribal Council Aboriginal Corporation Native Title Claimants	Mail	N/A

Appendix 4

Glossary of Aboriginal 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 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 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 : PR111287

Client Service ID : 62501

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
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		
45-1-0149	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		
45-1-0154	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		
45-1-0128	2 Newnes State Forest	AGD	56	242200	6301100	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	339,2016,2220
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre					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		
45-1-0137	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		
45-1-0004	Mt Horne;Newnes State Forest;1/Mt Horne;	AGD	56	242600	6301200	Closed site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art	339,743,2016,2220
	Contact	Recorders	Denise Donlon,Susan (Now McIntrye-Tamwoy) McIntyre,Sharon Sullivan					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	

Report generated by AHIMS Web Service on 13/02/2012 for Tessa Boer-Mah for the following area at Datum :GDA, Zone : 56, Eastings : 235154 - 242754, Northings : 6301259 - 6307409 with a Buffer of 50 meters.Additional Info : Springvale. Number of Aboriginal sites and Aboriginal objects found is 24

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62501

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0179	CC 5;NEWNES SF;	AGD	56	242100	6301750	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0181	Mt Horne_1;NEWNES SF;	AGD	56	242350	6301200	Closed site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0182	Mt Horne_2;NEWNES SF;	AGD	56	242350	6301150	Closed site	Valid	Artefact : -	Shelter with Deposit	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0197	CC 1;NEWNES SF;	AGD	56	242080	6302950	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0198	CC 2;NEWNES SF;	AGD	56	242100	6303200	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0205	S10;Newnes Plateau;	AGD	56	236200	6301020	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2300
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0051	Nine Mile Pine Plantation;Carne Creek;	AGD	56	240250	6302850	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-0052	Cairne Creek;Bird Rock;Nine Mile Pine Plantation;	AGD	56	241000	6303000	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-2600	SV3-ST1	AGD	56	237975	6303313	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u> Bathurst LALC	<u>Recorders</u>						<u>Permits</u>		
45-1-0150	24 Newnes State Forest	AGD	56	236200	6306800	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
45-1-2689	AngusPlaceStoneArrangement#1	GDA	56	239700	6305359	Open site	Valid	Stone Arrangement : 2		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		

Report generated by AHIMS Web Service on 13/02/2012 for Tessa Boer-Mah for the following area at Datum :GDA, Zone : 56, Eastings : 235154 - 242754, Northings : 6301259 - 6307409 with a Buffer of 50 meters.Additional Info : Springvale. Number of Aboriginal sites and Aboriginal objects found is 24

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62502

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0211	S2;Wallerawang;	AGD	56	228700	6300550	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	Recorders	Mr.Neville Baker,Elizabeth Rich							
45-1-0212	GS1;Springvale Colliery;	AGD	56	230700	6300020	Open site	Valid	Artefact : -	Open Camp Site	2300,2608
	Contact	Recorders	Elizabeth Rich,Alice Gorman							
45-1-0117	MC 6;	AGD	56	231910	6296980	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Helen Brayshaw,Elizabeth Rich							
45-1-0237	Springvale Colliery;	AGD	56	228000	6301000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Susan (Now McIntyre-Tamwoy) McIntyre							
45-1-0247	Wallerawang Schoolhouse;	AGD	56	228240	6300510	Open site	Valid	Artefact : -	Open Camp Site	3818
	Contact	Recorders	Elizabeth White							
45-1-0087	Marangaroo Ridge 2;	AGD	56	232810	6299890	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Helen Brayshaw							
45-1-0088	Marangaroo Ridge 3;	AGD	56	232850	6299460	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Mary Dallas Consulting Archaeologists							
45-1-0089	Marangaroo Ridge 4;	AGD	56	232490	6297420	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Helen Brayshaw							
45-1-0090	Marangaroo Ridge 5;	AGD	56	232580	6297420	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	ASRSYS							
45-1-0091	Marangaroo Ridge 1;	AGD	56	232800	6299950	Closed site	Valid	Artefact : -	Shelter with Deposit	679
	Contact	Recorders	ASRSYS							
45-1-0107	Maroo - YLS/4	AGD	56	232960	6294940	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Bonhomme Craib & Associates							
45-1-0108	W1;	AGD	56	229620	6297320	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox							
45-1-0109	W2;	AGD	56	229600	6297350	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox							
45-1-0110	W4;	AGD	56	228620	6297310	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox							
45-1-0111	W3;	AGD	56	228730	6297320	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox							
45-1-0112	MC 1;	AGD	56	231500	6297100	Open site	Valid	Artefact : -	Open Camp Site	1414

Report generated by AHIMS Web Service on 13/02/2012 for Tessa Boer-Mah for the following area at Datum :GDA, Zone : 56, Eastings : 227554 - 235154, Northings : 6295109 - 6301259 with a Buffer of 50 meters.Additional Info : Springvale. Number of Aboriginal sites and Aboriginal objects found is 32

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62502

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Elizabeth Rich					<u>Permits</u>		
45-1-0113	MC 2;	AGD	56	232470	6297180	Open site	Valid	Artefact : -	Open Camp Site	1414
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Elizabeth Rich					<u>Permits</u>		
45-1-0114	MC 3;	AGD	56	232650	6297780	Open site	Valid	Artefact : -	Open Camp Site	1414
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich					<u>Permits</u>		
45-1-0115	MC 4;	AGD	56	232680	6297500	Open site	Valid	Artefact : -	Open Camp Site	1414
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Elizabeth Rich					<u>Permits</u>		
45-1-0116	MC 5;	AGD	56	232270	6297030	Open site	Valid	Artefact : -	Open Camp Site	1414
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Elizabeth Rich					<u>Permits</u>		
45-1-2557	M-OS-1	AGD	56	234520	6298440	Open site	Valid	Aboriginal Ceremony and Dreaming : -		97636,98115
	<u>Contact</u>	<u>Recorders</u>	Central West Archaeological and Heritage Services Pty Ltd					<u>Permits</u>		
45-1-2565	M-OS-3	AGD	56	233110	6294950	Open site	Valid	Artefact : -		97636
	<u>Contact</u>	<u>Recorders</u>	Central West Archaeological and Heritage Services Pty Ltd					<u>Permits</u>		
45-1-2566	M-OS-2	AGD	56	234350	6296870	Open site	Valid	Artefact : -		97636
	<u>Contact</u>	<u>Recorders</u>	Central West Archaeological and Heritage Services Pty Ltd					<u>Permits</u>		
45-1-2572	Site 1, Catlereagh Highway Realignment, Lidsdale	AGD	56	228430	6301025	Open site	Valid	Artefact : -		4549
	<u>Contact</u>	<u>Recorders</u>	Louise Gay					<u>Permits</u>		
45-1-2573	PAD 1, Castlereagh Highway Realignment, Lidsdale	AGD	56	228250	6301070	Open site	Destroyed	Potential Archaeological Deposit (PAD) : -		98700
	<u>Contact</u>	<u>Recorders</u>	Louise Gay					<u>Permits</u>	1436,1666	
45-1-2574	PAD 2, Castlereagh Highway Realignment, Lidsdale	AGD	56	228250	6301120	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		98700
	<u>Contact</u>	<u>Recorders</u>	Louise Gay					<u>Permits</u>	1436,1707	
45-1-2571	M-S-2	AGD	56	234270	6295050	Closed site	Valid	Artefact : -		97636
	<u>Contact</u>	<u>Recorders</u>	Central West Archaeological and Heritage Services Pty Ltd					<u>Permits</u>		
45-1-2545	Wallerowong Station Massacre	AGD	56	228600	6298500	Open site	Valid	Burial : -	Burial/s	
	<u>Contact</u>	<u>Recorders</u>	Ms.Adrienne Howe-Piening					<u>Permits</u>		
45-1-2583	Duncan/Main Street PAD	AGD	56	228450	6300750	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>	1793	
41-1-0238	Duncan Street PAD(refer to site 45-1-2583)	AGD	56	228450	6300750	Open site	Deleted	Potential Archaeological Deposit (PAD) : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62502

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Permits							
45-1-0250	MC7 (IF2);Marrangaroo Creek (IF2);	AGD	56	231980	6297200	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Permits							
45-1-2716	SU1a - A5	GDA	56	227585	6300837	Open site	Valid	Artefact : 19		
	Contact	Recorders	Permits							

Report generated by AHIMS Web Service on 13/02/2012 for Tessa Boer-Mah for the following area at Datum :GDA, Zone : 56, Eastings : 227554 - 235154, Northings : 6295109 - 6301259 with a Buffer of 50 meters.Additional Info : Springvale. Number of Aboriginal sites and Aboriginal objects found is 32

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62503

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0065	Mt Horne Paddys Creek	AGD	56	241100	6299220	Closed site	Valid	Artefact : -, Grinding Groove : -	Axe Grinding Groove, Shelter with Deposit	130
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>		
45-1-0005	Old Bells Line Track;	AGD	56	239960	6301000	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1474
	<u>Contact</u>	<u>Recorders</u>	Ann Jelinek					<u>Permits</u>		
45-1-0128	2 Newnes State Forest	AGD	56	242200	6301100	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	339,2016,2220
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon, Susan (Now McIntyre-Tamwoy) McIntyre					<u>Permits</u>		
45-1-0129	3 Newnes State Forest	AGD	56	241950	6300950	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	339,2016
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon, Susan (Now McIntyre-Tamwoy) McIntyre					<u>Permits</u>		
45-1-0002	Bungleboori; Old Bells Line Track;	AGD	56	239300	6300400	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	Ann Jelinek					<u>Permits</u>		
45-1-0184	PC 1; NEWNES SF;	AGD	56	240750	6298400	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0185	PC 2; NEWNES SF;	AGD	56	241200	6298500	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0186	PC 3; NEWNES SF;	AGD	56	241600	6299000	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0187	PC 4; NEWNES SF;	AGD	56	241650	6298800	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0188	PC 5; NEWNES SF;	AGD	56	241800	6299150	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0189	PC 6; NEWNES SF;	AGD	56	242400	6298950	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0192	HVS 1; NEWNES SF;	AGD	56	241550	6296900	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0193	FC 4; NEWNES SF;	AGD	56	241450	6296000	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Klim Gollan					<u>Permits</u>		
45-1-0194	FC 3; NEWNES SF;	AGD	56	241150	6295800	Open site	Valid	Artefact : -	Open Camp Site	

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62503

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Klim Gollan					Permits		
45-1-0195	FC 2;NEWNES SF;	AGD	56	241200	6296500	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Klim Gollan					Permits		
45-1-0196	FC 1;NEWNES SF;	AGD	56	241100	6296600	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Klim Gollan					Permits		
45-1-0199	MC 1;NEWNES SF;	AGD	56	236200	6298400	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Klim Gollan					Permits		
45-1-0204	S11;Newnes Plateau;	AGD	56	236120	6300900	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2300
	Contact	Recorders	Mr.Neville Baker,Elizabeth Rich					Permits		
45-1-0205	S10;Newnes Plateau;	AGD	56	236200	6301020	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2300
	Contact	Recorders	Mr.Neville Baker,Elizabeth Rich					Permits		
45-1-2569	M-S-12	AGD	56	235920	6298310	Open site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2570	M-S-10	AGD	56	235820	6297010	Closed site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2558	M-S-6	AGD	56	235260	6296390	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2559	M-S-5	AGD	56	235620	6297100	Open site	Valid	Art (Pigment or Engraved) : -		
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2560	M-S-4	AGD	56	235170	6296810	Closed site	Valid	Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2561	M-S-3	AGD	56	235170	6296810	Closed site	Valid	Artefact : -		1157
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2562	M-S-11	AGD	56	235320	6297760	Closed site	Valid	Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2567	M-S-9	AGD	56	235130	6296100	Closed site	Valid	Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : PR111287

Client Service ID : 62503

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2568	M-S-8	AGD	56	235160	6296100	Closed site	Valid	Artefact : -		97636
	<u>Contact</u>	<u>Recorders</u>	Central West Archaeological and Heritage Services Pty Ltd					<u>Permits</u>		
45-1-2578	Springvale 1	AGD	56	238760	6300377	Open site	Valid	Stone Arrangement : 2		
	<u>Contact</u>	<u>Recorders</u>	Leila McAdam					<u>Permits</u>		
45-1-2592	M-IF-1, Lithgow	AGD	56	235510	6297160	Open site	Valid	Artefact : 1		97636
	<u>Contact</u> T Russell	<u>Recorders</u>	Jim Kelton					<u>Permits</u>		
45-1-2669	NPSPR55-OS1	GDA	56	240500	6299924	Open site	Valid	Artefact : 5		
	<u>Contact</u>	<u>Recorders</u>	OzArk Cultural Heritage Management					<u>Permits</u>		
45-1-2697	C-OS-1	GDA	56	242214	6296753	Open site	Valid	Artefact : 2		
	<u>Contact</u>	<u>Recorders</u>	Ms.Gillian Goode,RPS Australia East Pty Ltd -Hamilton					<u>Permits</u>		
45-1-2702	C-S-1 and PAD5	AGD	56	241029	6296473	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.Gillian Goode,RPS Australia East Pty Ltd -Hamilton					<u>Permits</u>		

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Appendix 6

Site Cards



Aboriginal Site Recording Form



AHIMS Registrar

PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received

Date entered into system

Date catalogued

Entered by (I.D.)

Information Access

☐ Gender/male ☒ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For Further Information Contact:

☐ Nominated Trustee

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

☐ Knowledge Holder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name

Easting

Northing

AGD/GDA

Mapsheet

Zone

Location Method

Other Registration

Primary Recorder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Date recorded

Office Use Only

Client on system

Client on system

Client on system

Open Site

A 10x10 grid map with compass directions (N, S, E, W, NE, SE, SW, NW) and a north arrow. The grid is composed of 10 columns and 10 rows. The directions are labeled at the corners: NW (top-left), N (top-center), NE (top-right), W (middle-left), E (middle-right), S (bottom-center), SE (bottom-right), and SW (bottom-left). A north arrow is located in the bottom-right corner, pointing upwards.

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☒ Wind erosion
- ☒ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☒ Boulder
- ☒ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Open Site

Site Orientation

- ☐ N-S
- ☒ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Condition of Ceiling

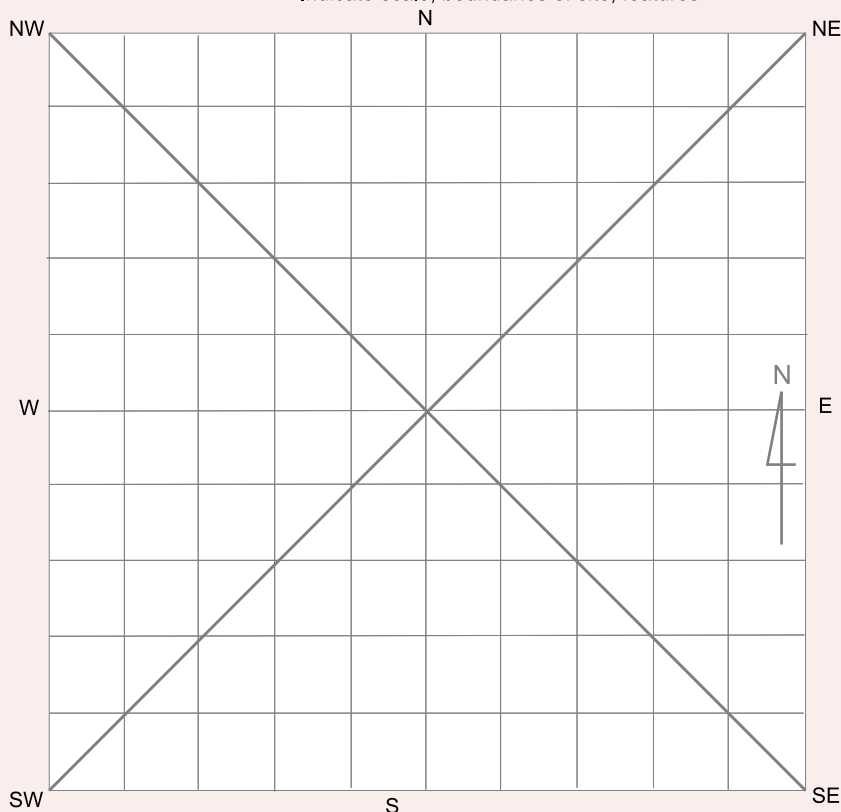
- ☐ Boulder
- ☒ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☒ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☒ 3. Art
- ☐ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☒ 10. Grinding Groove
- ☒ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
- Average width of visible site
- Estimated area of visible site
- Length of assessed site area

The site has been interpreted by member of the Aboriginal community as a Women's Site. due to the presence of the red hand motif.

The site is a rockshelter complex which includes two rock overhangs (Shelter A and Shelter B) formed by the same large sandstone pagoda, situated on an upper slope near Sunnyside Ridge Road in the Newnes State Forest. Shelter A faces south east and measures L1600cm x W290cm x H160cm. It contains a grinding stone with one grinding groove, a broken piece of ochre and an art motif. Shelter B, which faces east, measures L600cm x W220cm x H180cm and no Aboriginal objects were observed at this location. Both the ceiling and rear wall of the shelter demonstrated evidence of weathering and exfoliation and there were black marks, which may be smoke stains, on the ceiling. Vegetation around the site medium density woodland and is composed of a combination of Iron bark, Scribbly gum and a shrubby understorey. During the visual inspection and recording of the site, members of the Aboriginal community determined that this may be a Women's Site.

Fax

☒ A4 location map
☐ B/W photographs
☒ Colour photographs
☐ Slides
☒ Aerial photographs
☐ Site plans, drawings
☐ Recording tables
☐ Other
☐ Feature inserts-No.

NPWS FEATURE RECORDING FORM - GROOVE

page 1

Site I.D. Site Name First recorded date Importance

Aboriginal Information Recorded?

No. of instances Recorded by

Feature Description

Type of Grinding Feature

- ☐ Broad
- ☐ Narrow/point
- ☐ Hollow

☒ Flat
 Profile Shape

- ☒ 'U' shaped
- ☐ 'V' shaped
- ☐ Flat

Seed Species Present

Recording date

Groove Function

Dimensions

Smallest

Largest

Length (mm) Length (mm) Width (mm) Width (mm) Depth (mm) Depth (mm) Groove count Cluster count

Feature Context & Condition

Easting Northing Dimensions of Whole Feature Length (m) Width (m)

Feature Condition

- ☐ Very good
- ☒ Good
- ☐ Poor

General Condition

- ☒ Weathered
- ☐ Vandalised

General Condition ctd

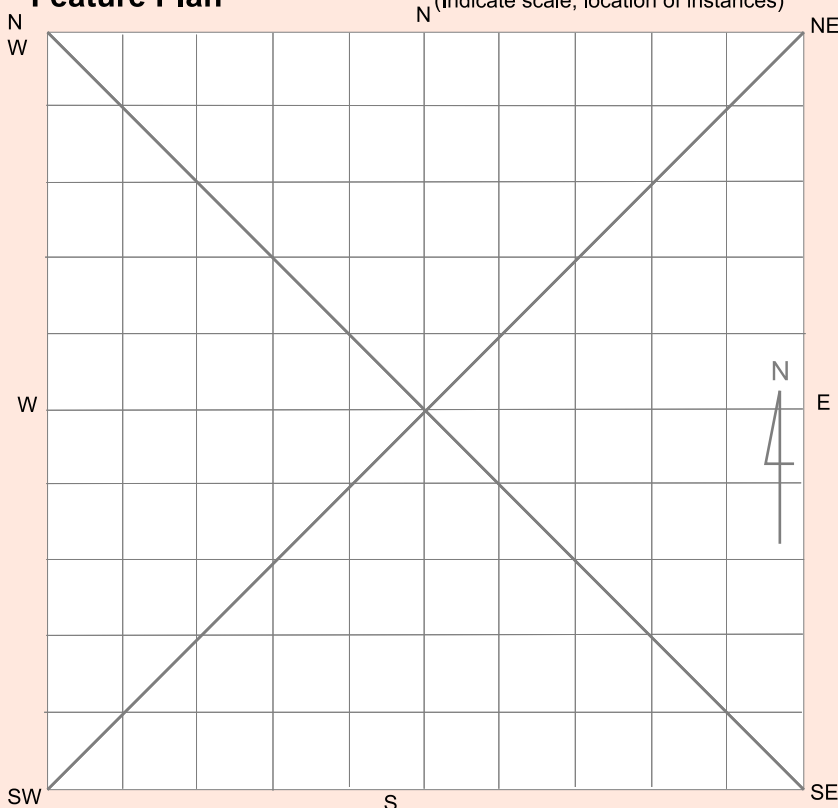
- ☐ Fire damage
- ☐ Surface water wash
- ☐ Graffiti
- ☐ Vehicle damage
- ☒ Erosion
- ☐ Stock damage

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Expert assessment
- ☐ Graffiti removal
- ☐ Meeting with land manager
- ☐ Revegetation
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan

(Indicate scale, location of instances)



Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

Site I.D. Site Name First recorded date Importance

Aboriginal Information

Recorded? No. of instances Recorded by **Feature Context
& Condition**

Easting

Northing

Pigment ☒Engraved ☐Super-impositioning ☐**Artwork Condition**☐ Very good☒ Good☐ Poor**General Condition**☒ Weathered☐ Vandalised☐ Surface water wash☐ Mineralisation☐ Graffiti☐ Fire damage☐ Insects/termites☐ Erosion☐ Stock☐ Unstable structure**Recommended Action**☐ Boardwalk☐ Cage/barrier/fencing☐ Closure to public☐ Continued inspection☐ Dripline☐ Expert assessment☐ Fire hazard removal☐ Graffiti removal☐ Insect/bird nest removal☐ Meeting with land manager☐ Rubbish removal☐ Signage☐ Erosion control☐ Track closure/re-routing☐ Additional recording**Feature Environment**(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source

metres

Distance to temporary water source

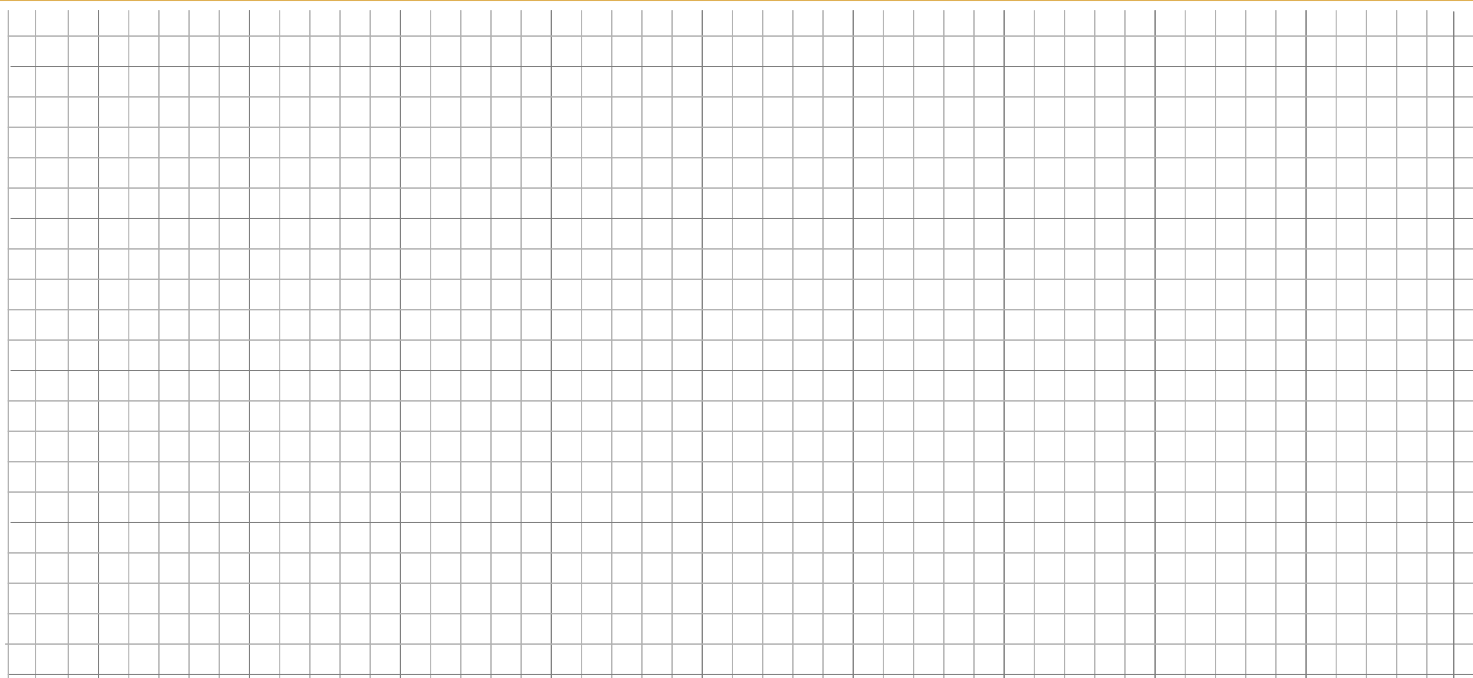
metres

Name of nearest permanent water source

Name of nearest temporary water

Art Sketch Plan

Sketch and number motif groups



NPWS FEATURE RECORDING TABLE - ART MOTIF

page 2

[illegible]

Motif			Application Technique	Main Colour	Art Location	Condition
Anthropomorphic	Female	Marine-Other				
Bird	Fish	Other	Abraded	Black	All over shelter surfaces	Faded
Bird Track	Foot	Pattern	Drawn	Mauve *	ceiling	Stained
Canoe	Hand	Quadruped	Other	N/A	Floor	Mineralisation Evident
Circle	Jellyfish	Reptile	Painted	Orange *	Mostly near largest sheltered space	V brant Colours
Contact material culture	Kangaroo	Rifle	Pecked	Other	Mostly on out of the way surfaces	Unweathered
Duck	Line	Shield	Pigment & Engraved	Red *	Other	Weathered
Eel	Lizard	Ship	Stencilled	White *	Wall	
Emu	Macropod	Snake	Form	Yellow *		
Emu track	Macropod Track	Spear	Fill			
European figure	Male	Wallaby	Line			
			Line+ Fill			
			Other			
			Pattern			

Comments:

The art motif is located in Shelter A of the RPS SV RS1 complex.

RPS SV RS1 Site Description

The site is a rockshelter complex which includes two rock overhangs (Shelter A and Shelter B) formed by the same large sandstone pagoda, situated on an upper slope near Sunnyside Ridge Road in the Newnes State Forest. Shelter A faces south east and measures L1600cm x W290cm x H160cm. It contains a grinding stone with one grinding groove, a broken piece of ochre and an art motif (a red hand stencil). Shelter B, which faces east, measures L600cm x W220cm x H180cm and no Aboriginal objects were observed at this location. Both the ceiling and rear wall of the shelter demonstrate evidence of weathering and exfoliation and there are black marks, which may be smoke stains, on the ceiling. Vegetation around the site is medium density woodland with a shrubby understorey.

During the visual inspection and recording of the site, members of the Aboriginal community determined that this may be a Women's Site.



Plate 1: RPS SV RS1, Shelter A with scale; looking west



Plate 2: RPS SV RS1, Shelter A; looking north west



Plate 3: RPS SV RS1 Shelter A; looking south



Plate 4: RPS SV RS1 Shelter A; detail of hand stencil



Plate 5: RPS SV RS1 Shelter A; grinding stone with grinding groove



Plate 6: RPS SV RS1 Shelter A; hardened ochre on the floor of Shelter A



Plate 7: RPS SV RS1 Shelter B; looking west



Plate 8: RPS SV RS1 Shelter B; looking south west



Plate 9: RPS SV RS1 Shelter B without scale; looking west



Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received

Date entered into system

Date catalogued

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For Further Information Contact:

☐ Nominated Trustee

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

☐ Knowledge Holder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name

Easting

Northing

AGD/GDA

Mapsheets

Zone

Location Method

Other Registration

Primary Recorder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Date recorded

Office Use Only

Client on system

Client on system

Client on system

Open Site

SE 1

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Open Site

Site Orientation

- ☐ N-S
- ☒ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Condition of Ceiling

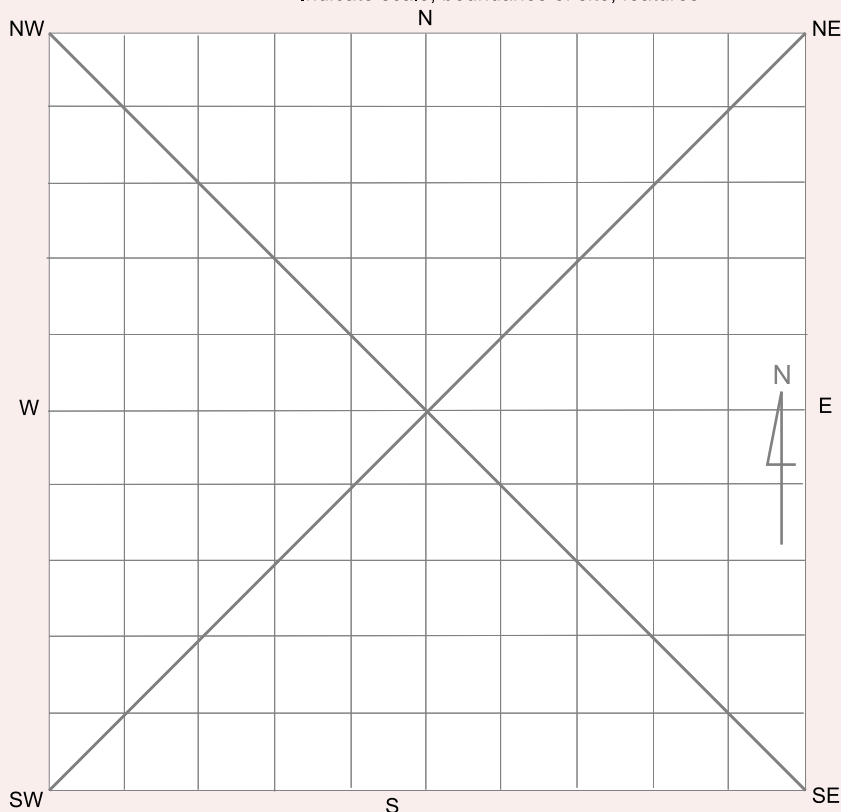
- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☐ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☒ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
- Average width of visible site
- Estimated area of visible site
- Length of assessed site area

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

RPS SV ST1 was located south of Kangaroo Creek and the landscape was characterised by a gently to moderately sloping ridgeline with steeply sloping gullies to the east and south. The scarred tree is a hollow peppermint tree which exhibits evidence of fire damage and was in poor condition. The scar was oval shaped and came to a point at both ends. The measurements were as follows: Length 110cm; Width 32cm; Depth 14cm; and Height Above Ground 60cm. No axe marks were identified.

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title	Surname	First Name	Initials													
Organisation																
Address																
Phone number											Fax					

☒ A4 location map

☐ B/W photographs

☒ Colour photographs

☐ Slides

☒ Aerial photographs

☐ Site plans, drawings

☐ Recording tables

☐ Other

☐ Feature inserts-No.

[illegible]

Site I.D.

First recorded date

26/4/2012

No. of instances

1

Recorded by

David White

Site Name

RPS ST1

Importance

Cannot be presently determined

Aboriginal Information Recorded?

Feature description

No. of scars

1

No. of carved panels

Feature Condition

☐ Very good

☒ Good

☐ Poor

Condition

☒ Weathered

☐ Ringbarked

☒ Fire damage

☐ Vehicle damage

☒ Insects/termites

☒ Rot

☐ Limb fall

☐ Stock damage

Easting

2

3

5

0

0

4

Northing

6

3

0

2

0

0

2

Recommended Action

☐ Fencing

☐ Closure to public

☐ Continued inspection

☐ Expert assessment

☐ Fire hazard reduction

☐ Insect removal

☐ Meeting with land manager

☐ Rubbish removal

☐ Signage

☐ Tree health assessment

☐ Track closure/re-routing

☐ Additional recording

Feature environment (Complete when feature environment differs to site environment, use attributes from cover card, page 2)

Mountainous

Upper Slope

Medium Density

Recreational

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source

600

metres

Distance to temporary water source

300

metres

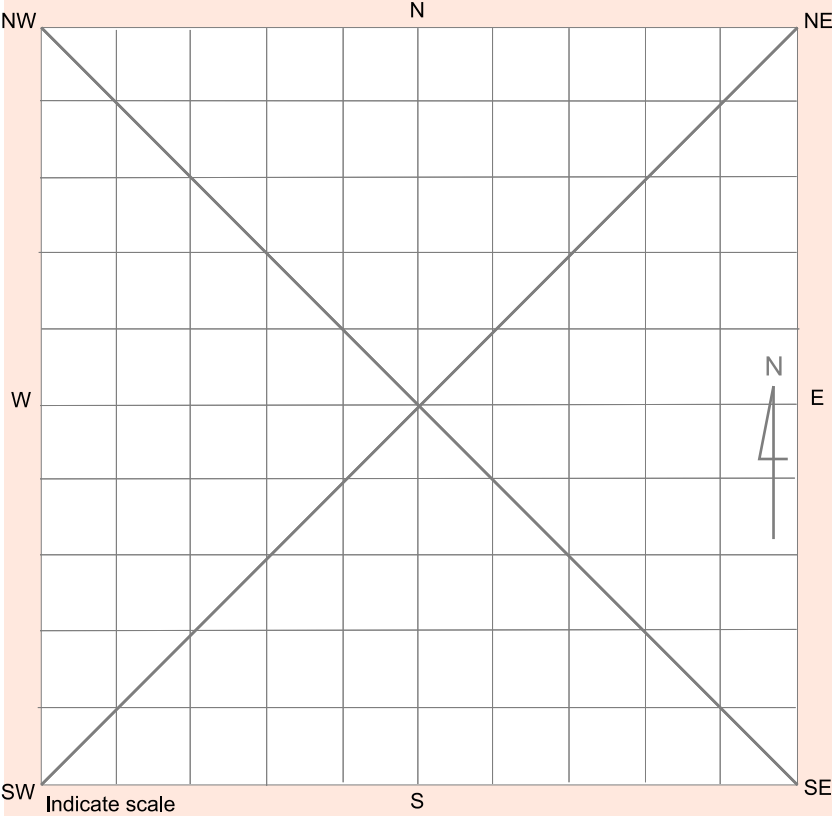
Name of nearest permanent water source

Kangaroo Creek

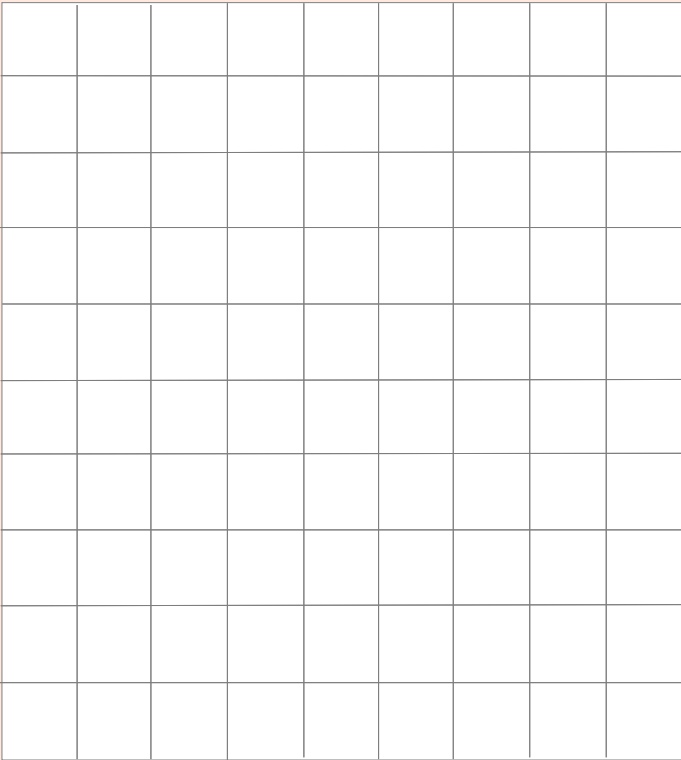
Name of nearest temporary water

Trib of Kangaroo Ck

Feature Location Plan



Scar/Carved Panel Drawing



NPWS FEATURE RECORDING TABLE - MODIFIED TREE

page 2

[illegible]

Type of Tree	Tree Species	L iving Status	Tree Status	Regrowth	Scar Shape	Carving Type	Axe Marks	Orientation
Carved Tree	Eucalypt	Dead	Standing	Yes	Oval	Linear	Metal	North East
Scarred Tree	Red Gum	Alive	Lying down	No	Rectangular	Geometric	Stone	East
Carved/Scarred Tree	Angotha	Dying	Partially felled		Square	Pictorial	Indeterminate	South East
			Subject to salinity		Round			South
			Not <i>in situ</i>		Other			South West

Comments:

RPS SV ST1 Plates



Plate 1: RPS SV ST1 showing length and height above ground



Plate 2: RPS SV ST1 showing width



Plate 3: RPS SV ST1 showing depth



Plate 4: RPS SV ST1 showing fire damage



Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Office Use Only

Site Number

Date received

Date entered into system

Date catalogued

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For Further Information Contact:

☐ Nominated Trustee

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

☐ Knowledge Holder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name

Easting

Northing

AGD/GDA

Mapsheet

Zone

Location Method

Other Registration

Primary Recorder

Title

Surname

First Name

Initials

Organisation

Address

Phone number

Fax

Date recorded

Office Use Only

Client on system

Client on system

Client on system

Open Site

SE 1

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
☐ Wind erosion
☐ Water erosion
☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
☐ Sandstone platform
☐ Silica gloss
☐ Tessellated
☐ Weathered
☐ Other platform

Condition of Ceiling

- ☐ Boulder
☐ Sandstone platform
☐ Silica gloss
☐ Tessellated
☐ Weathered
☐ Other platform

Shelter Aspect

- ☐ North
☐ North East
☐ East
☐ South East
☐ South
☐ South West
☐ West
☐ North West

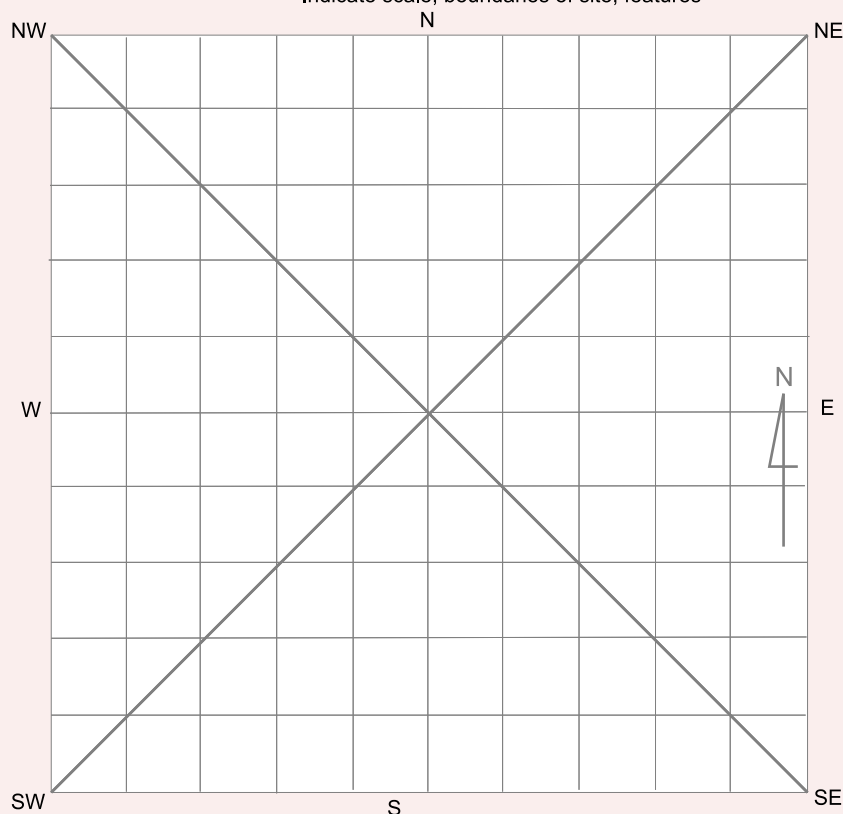
Open Site

Site Orientation

- ☒ N-S
☐ NE-SW
☐ E-W
☐ SE-NW
☐ N/A

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
☐ 2. Aboriginal Resource & Gathering
☐ 3. Art
☐ 4. Artefact
☐ 5. Burial
☐ 6. Ceremonial Ring
☐ 7. Conflict
☐ 8. Earth Mound
☐ 9. Fish Trap
☐ 10. Grinding Groove
☐ 11. Habitation Structure
☐ 12. Hearth
☐ 13. Non Human Bone & Organic Material
☐ 14. Ochre quarry
☐ 15. Potential Archaeological Deposit
☐ 16. Stone Quarry
☐ 17. Shell
☐ 18. Stone Arrangement
☒ 19. Modified Tree
☐ 20. Water Hole

Site Plan Indicate scale, boundaries of site, features

Site Dimensions

Closed Site Dimensions (m)

- Internal length
 Internal width
 Shelter height
 Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
 Average width of visible site
 Estimated area of visible site
 Length of assessed site area

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Site Cultural & Scientific Analysis and Preliminary Management Recommendations

RPS SV ST was located south of Kangaroo Creek and the landscape was characterised by a gently to moderately sloping ridgeline with steeply sloping gullies to the east and south. The scarred tree is an ironbark tree and appears to be in good condition. The scar was oval shaped and came to a point at both ends. The measurements were as follows: Length 130cm; Width 30cm; Depth 16cm; and Height Above Ground 280cm. No axe marks were identified.

[illegible]

☒ A4 location map
☐ B/W photographs
☒ Colour photographs
☐ Slides
☒ Aerial photographs
☐ Site plans, drawings
☐ Recording tables
☐ Other
☐ Feature inserts-No.

This image shows a blank sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Site I.D.

First recorded date

26/4/2012

No. of instances

1

Recorded by

David White

Site Name

RPS SV ST2

Importance

Cannot be presently determined

Aboriginal Information Recorded?

Feature description

No. of scars

1

No. of carved panels

Feature Condition

Very good

✓

Good

Poor

Condition

Weathered

Ringbarked

Fire damage

Vehicle damage

✓

Insects/termites

Rot

✓

Limb fall

Stock damage

Easting

234965

Northing

6301890

Recommended Action

Fencing

Closure to public

Continued inspection

Expert assessment

Fire hazard reduction

Insect removal

Meeting with land manager

Rubbish removal

Signage

Tree health assessment

Track closure/re-routing

Additional recording

Feature environment (Complete when feature environment differs to site environment, use attributes from cover card, page 2)

Mountainous

Upper Slope

Medium Density

Recreational

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source

700

metres

Distance to temporary water source

300

metres

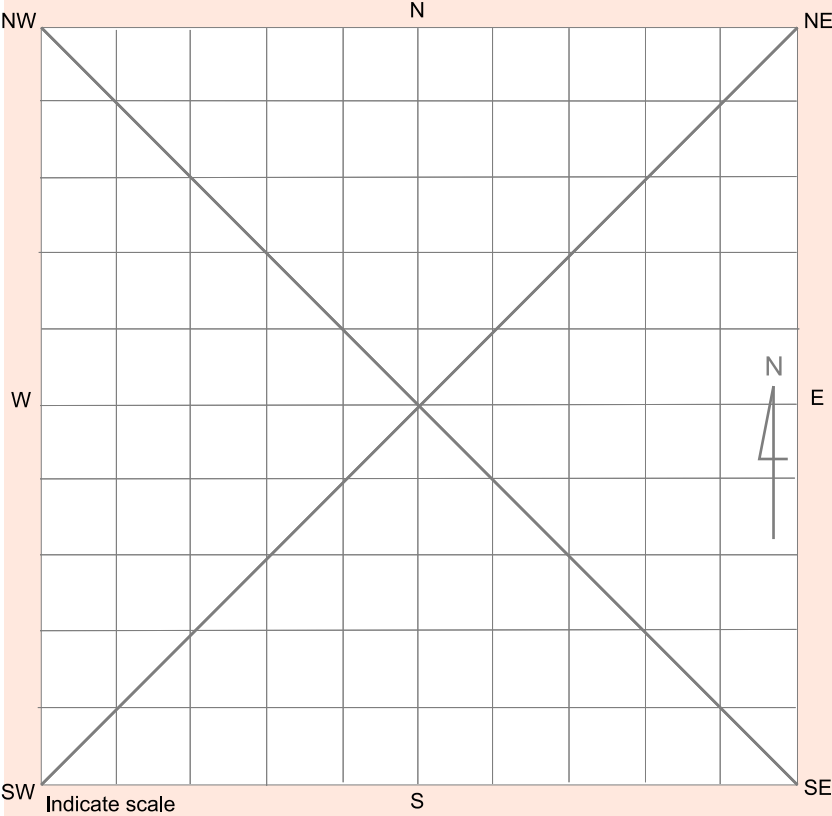
Name of nearest permanent water source

Kangaroo Creek

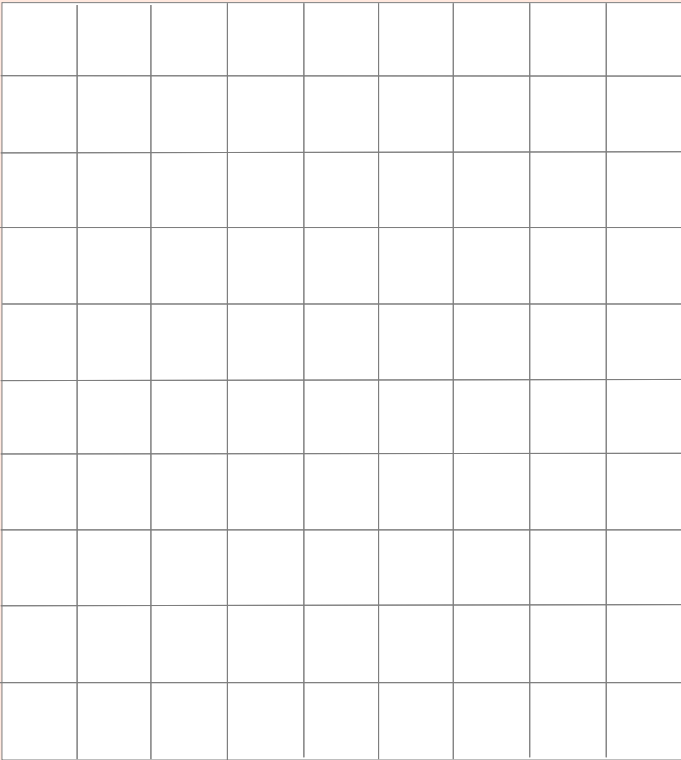
Name of nearest temporary water

Trib of Kangaroo Ck

Feature Location Plan



Scar/Carved Panel Drawing



Attach additional drawings

NPWS FEATURE RECORDING TABLE - MODIFIED TREE

page 2

[illegible]

Type of Tree	Tree Species	L iving Status	Tree Status	Regrowth	Scar Shape	Carving Type	Axe Marks	Orientation
Carved Tree	Eucalypt	Dead	Standing	Yes	Oval	Linear	Metal	North East
Scarred Tree	Red Gum	Alive	Lying down	No	Rectangular	Geometric	Stone	East
Carved/Scarred Tree	Angotha	Dying	Partially felled		Square	Pictorial	Indeterminate	South East
			Subject to salinity		Round			South
			Not <i>in situ</i>		Other			South West

Comments:

RPS SV ST1 Plates



Plate 1: RPS SV ST2 showing length of scar



Plate 2: RPS SV ST2 showing height above ground



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: Gundungarra 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:

Mingamon - AC.

Name of Representative:

Elwin Woffenden, Helen Riley

Signed:

E. Woffenden, 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 Windyview Co Ltd.

Name of Representative: Robyn Williams for Lynn Syme

Signed: Robyn F Williams Date: 7/12/14



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: 7/12/2011



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: 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	✓
A.P. -	Angus Place – Mine Extension Project	Lithgow \ Lidsdale \ Newnes Plateau	✓
Deci. -	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 Ngumbaa-y-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



Attention:

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

Tony Seibel-Barnes/CentennialCoal

To Robert Clegg <rclegg55@gmail.com>

cc

01/12/11 04:04 PM

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

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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 apologise 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**



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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)
 - o Neubeck
- Identified previously surveyed areas and known archaeological sites
- Ran through proposed methodology
 - o NC-OS1, NC-OS2 – Suggested Test Excavation
 - o NC-OS3, NC-OS4, NC-IFI
 - o Important to re-locate and reassess sites (given passed timeframe since last survey ~ 7 years)
 - o Disturbed versus undisturbed areas - Areas of total disturbance will not require reinspection. Erosion & bike tracks may lead to new finds.
 - o 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):
 - o Springvale Colliery Bores 7&8
 - o Springvale Colliery Extension of Mining
 - o Angus Place Extension of Mining
 - o Airly Coal Consent Renewal
 - o Lidsdale Siding Upgrade
 - o Coal Services Upgrade
 - o Clarence
- Mentioned high priority projects and proposed dates (12/12/2011 – 14/12/2011)
 - o Springvale Colliery Bores 7&8
 - o Lidsdale Siding Upgrade
 - o Coal Services Upgrade
- Provided overview of field work OH&S risks
 - o Remote \ rugged areas (4WD will be used to gain access to general areas)
 - o Climate – can change rapidly
 - o Food \ water \ first aid – requirements to carry items and be prepared
 - o 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 with the community (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
 - o Springvale Colliery Bores 7&8
 - o Lidsdale Siding Upgrade
 - o 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.....

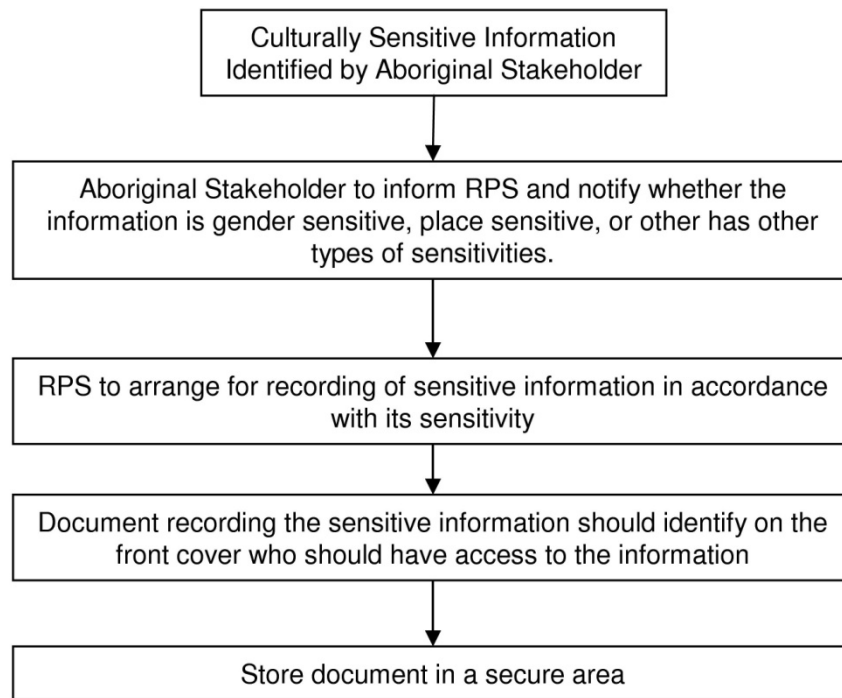
Signature.....

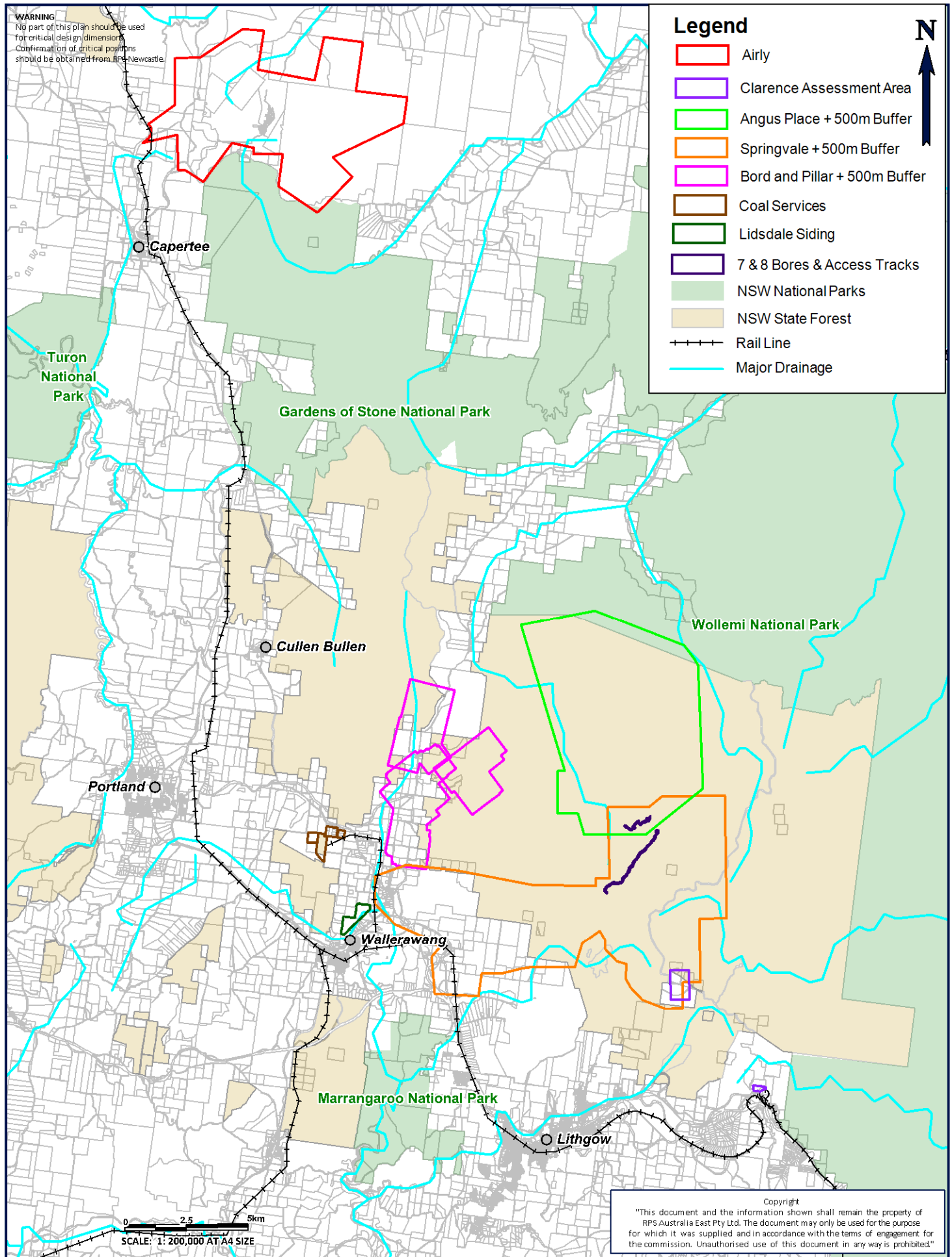
Date.....

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:\1085\Centennial\A4 Job\
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

**Newcastle Office**

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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: 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

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Lidsdale Siding – Upgrade Project

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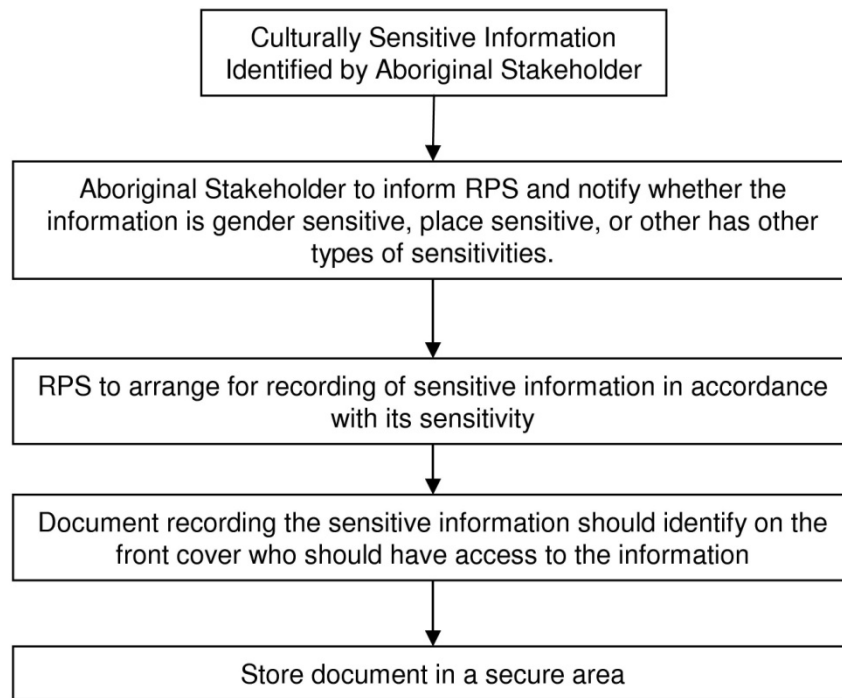
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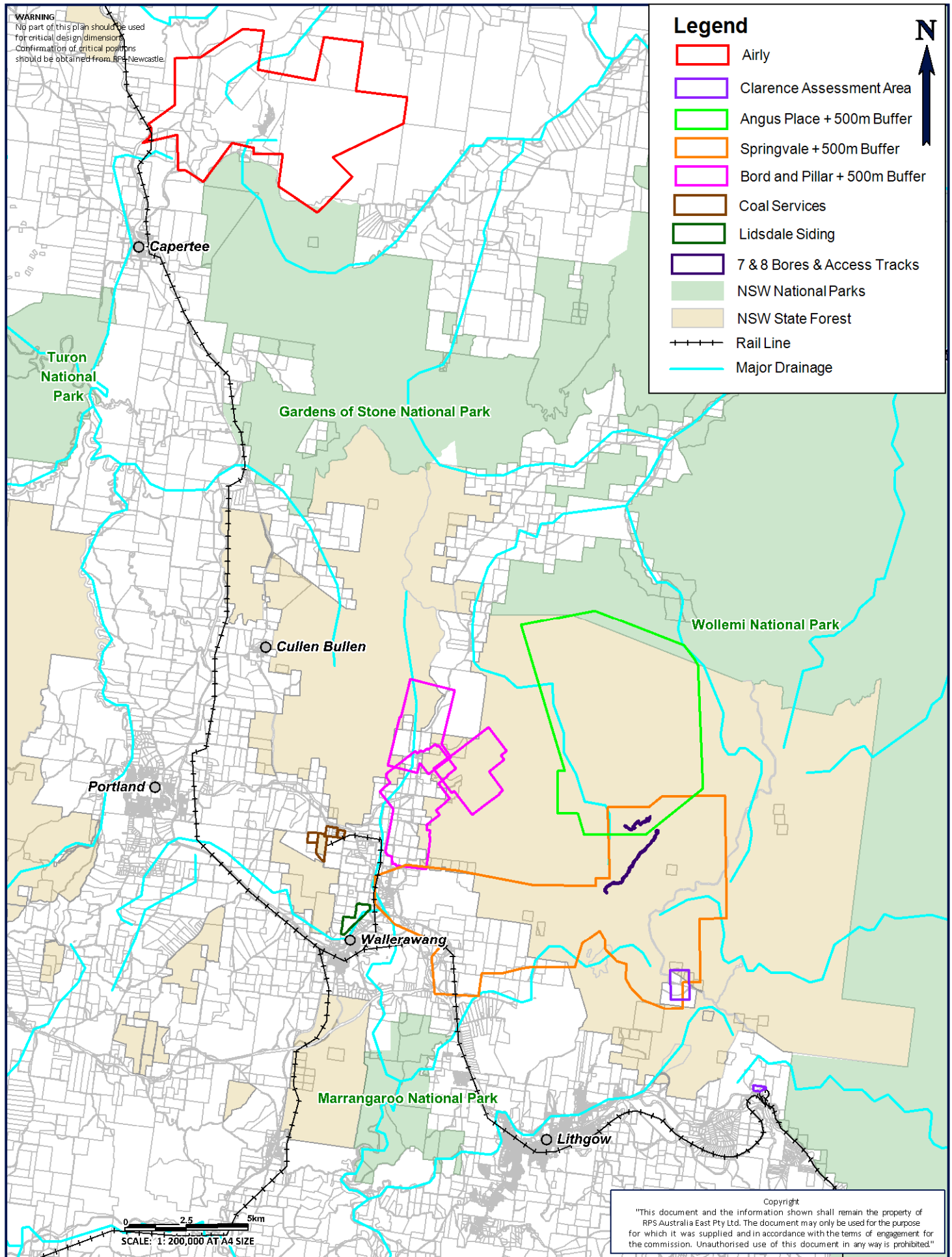
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TITLE: INDICATIVE ASSESSMENT
AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE:

LAYOUT REF: J:\1085\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY): 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 Wendy Lewis
Warrabing Native Title Claimants Aboriginal Corporation
525 Pheasants Nest Road
Pheasants Nest NSW 2574

Dear Wendy

RE: METHODOLOGY FOR ARCHAEOLOGICAL INVESTIGATION FOR CENTENNIAL COAL WESTERN PROJECTS

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Yours sincerely
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Darrell Rigby
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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.

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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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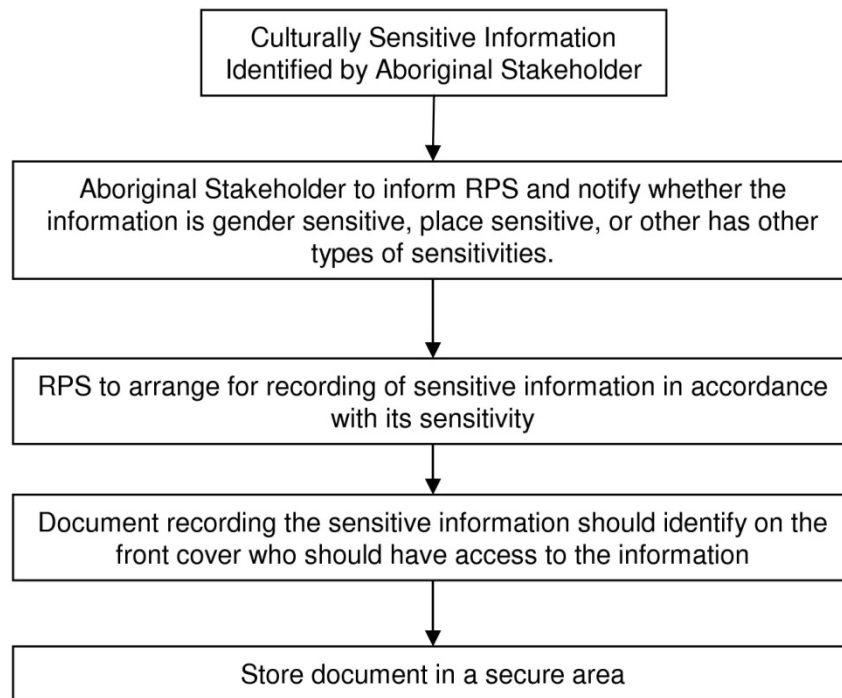
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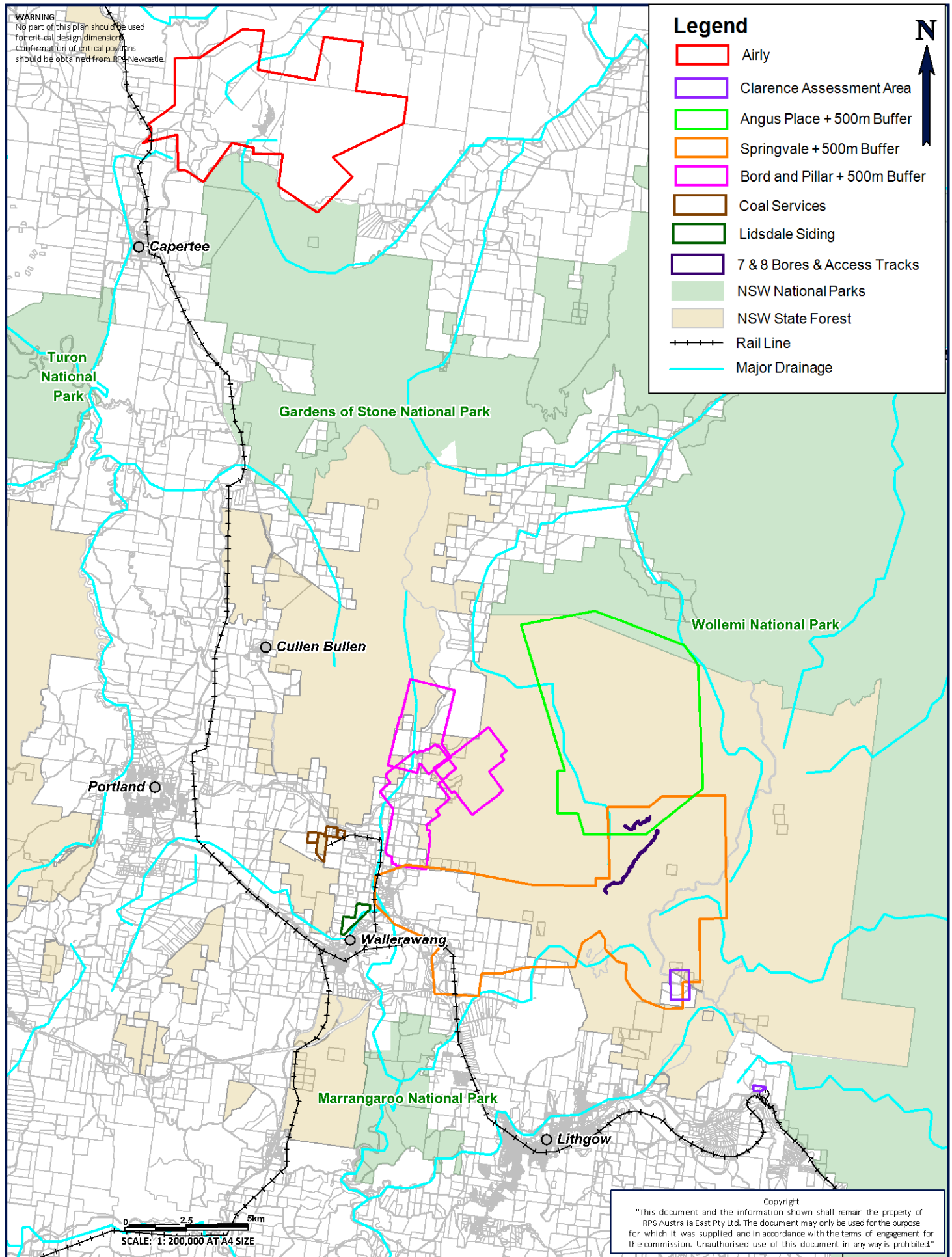
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Our Ref: 110599:DR
Date: 23 November 2011

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

Dear Eddy

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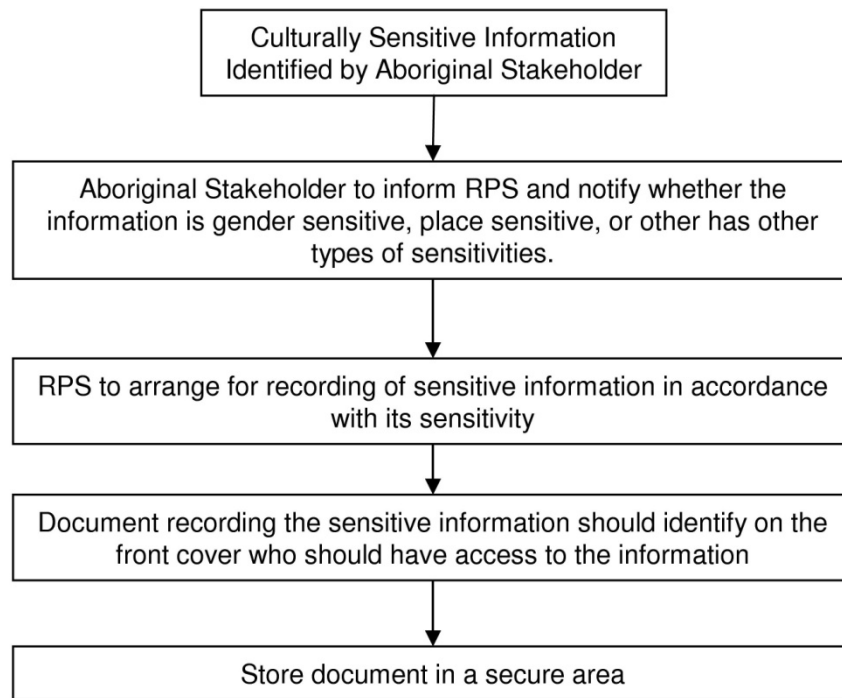
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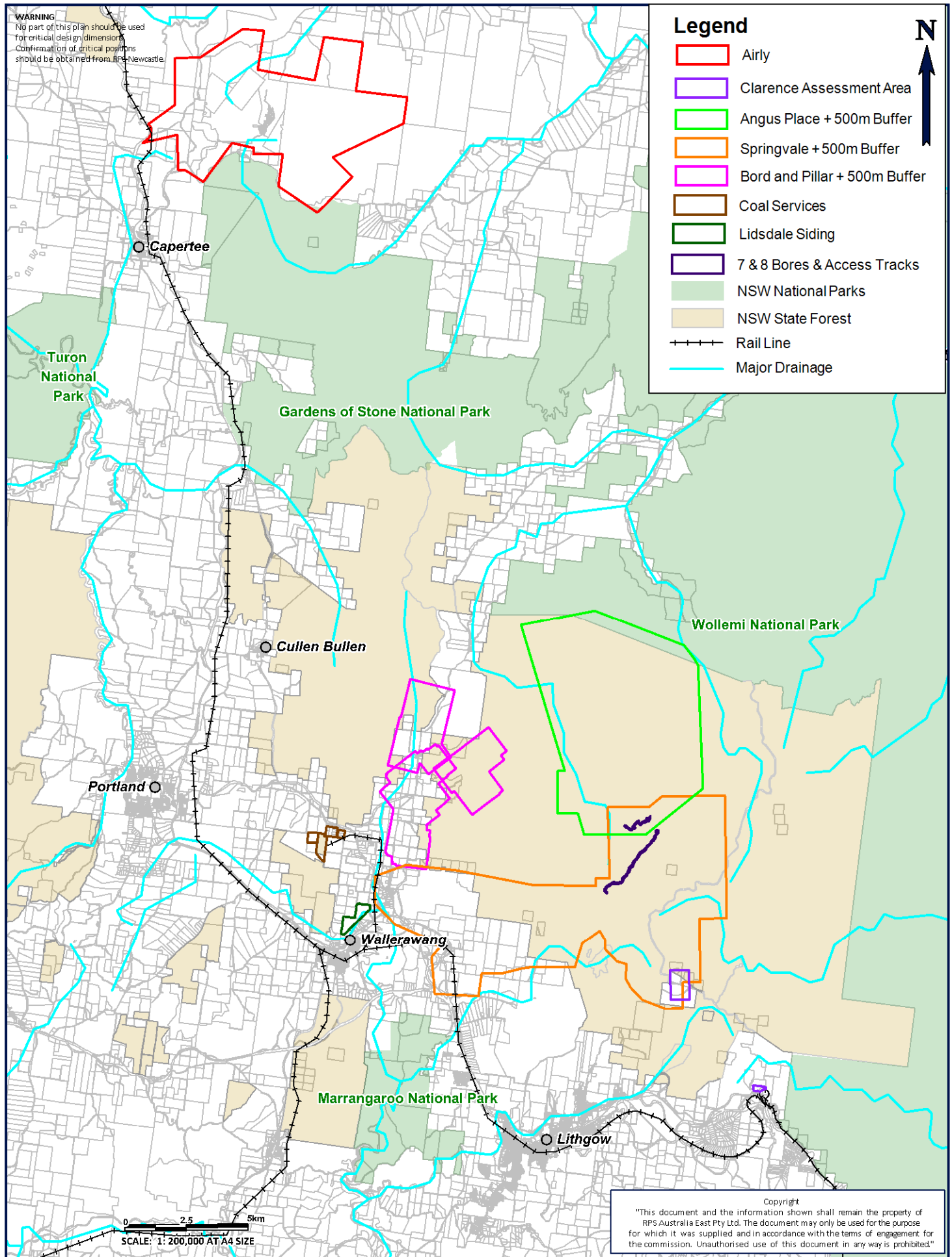
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Our Ref: 110599:DR
Date: 23 November 2011

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

Dear Helen

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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.

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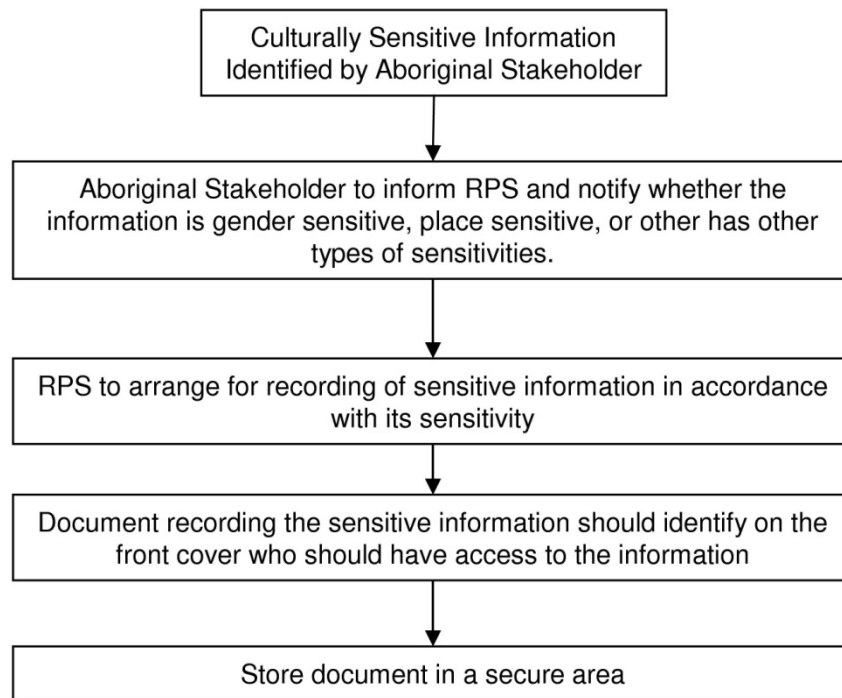
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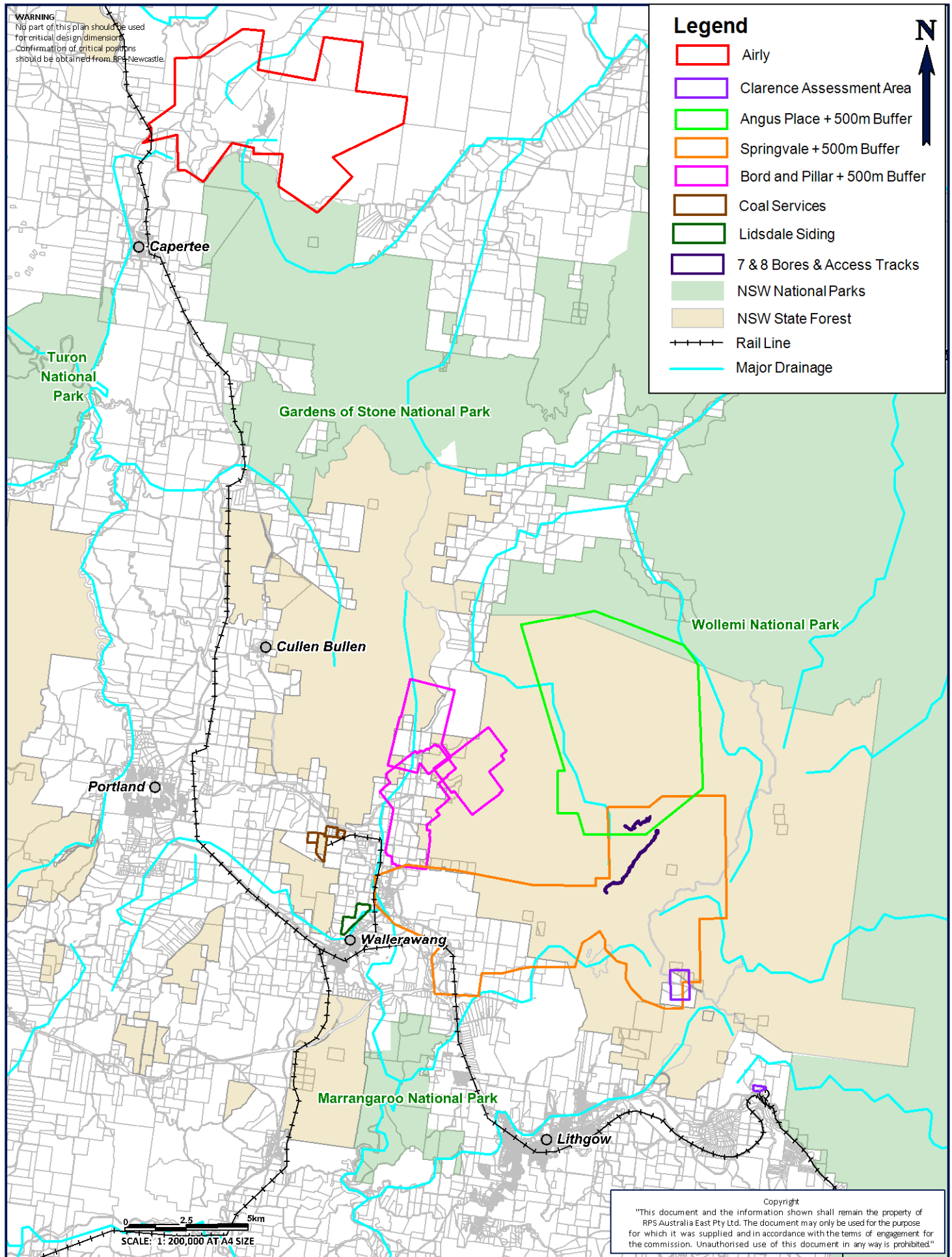
Date.....

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:\1085\Centennial\A4 Job\
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

**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: 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

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.

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Yours sincerely
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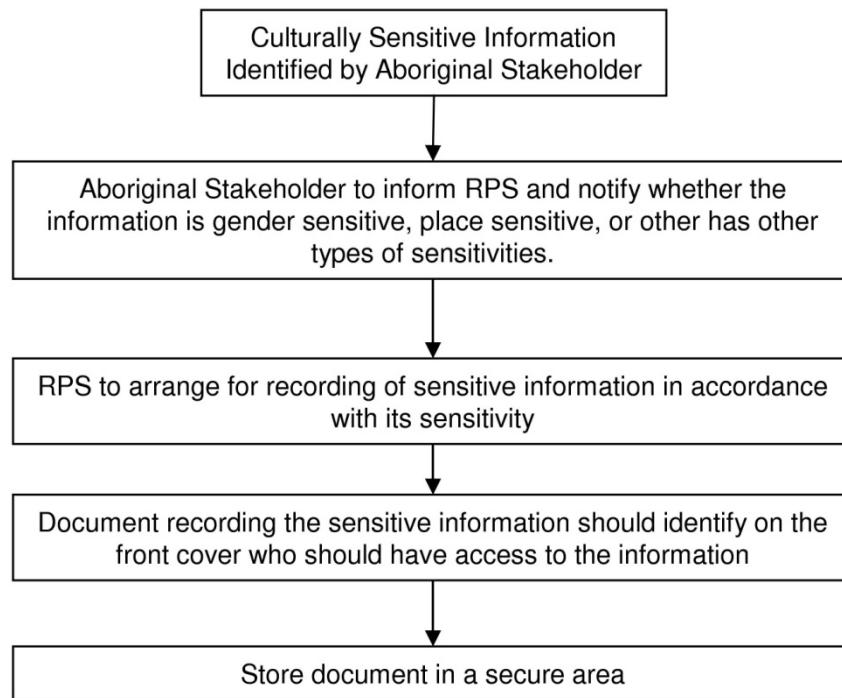
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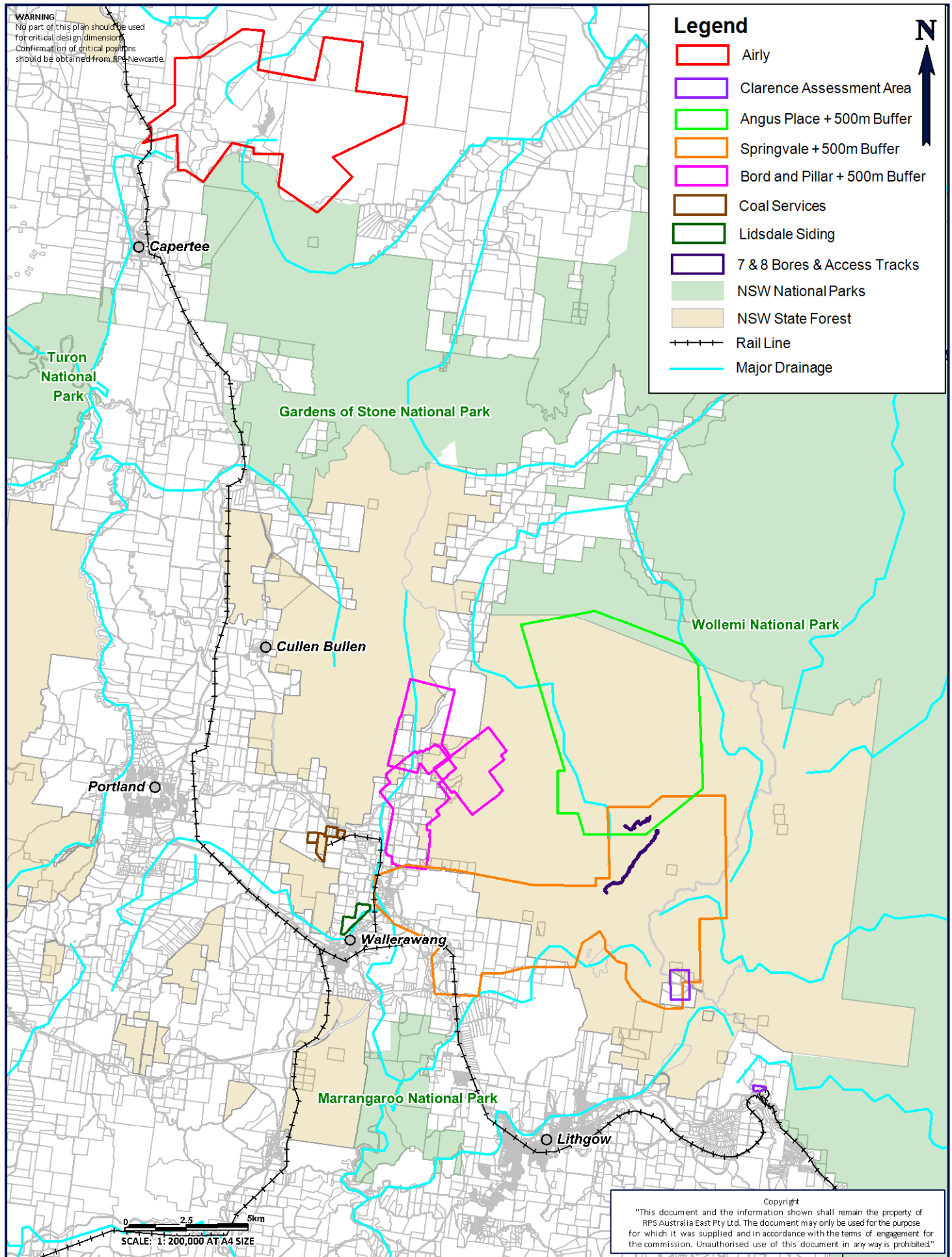
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AREAS

LOCATION: LITHGOW AREA

DATUM: (GDA 94)
PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE:

LAYOUT REF: J:\1085\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY): A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

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Our Ref: 110599:DR
Date: 23 November 2011

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

Dear Lyn

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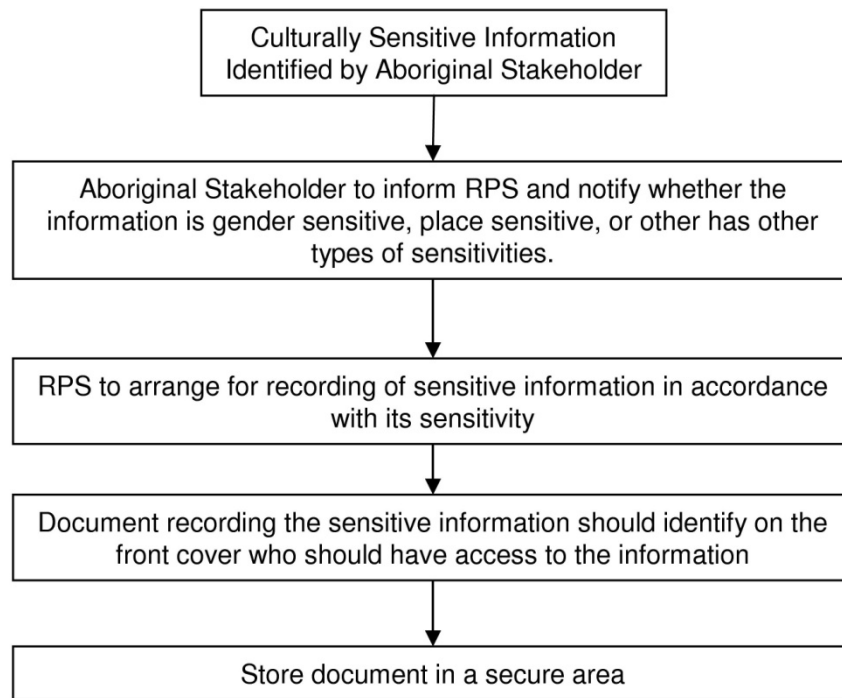
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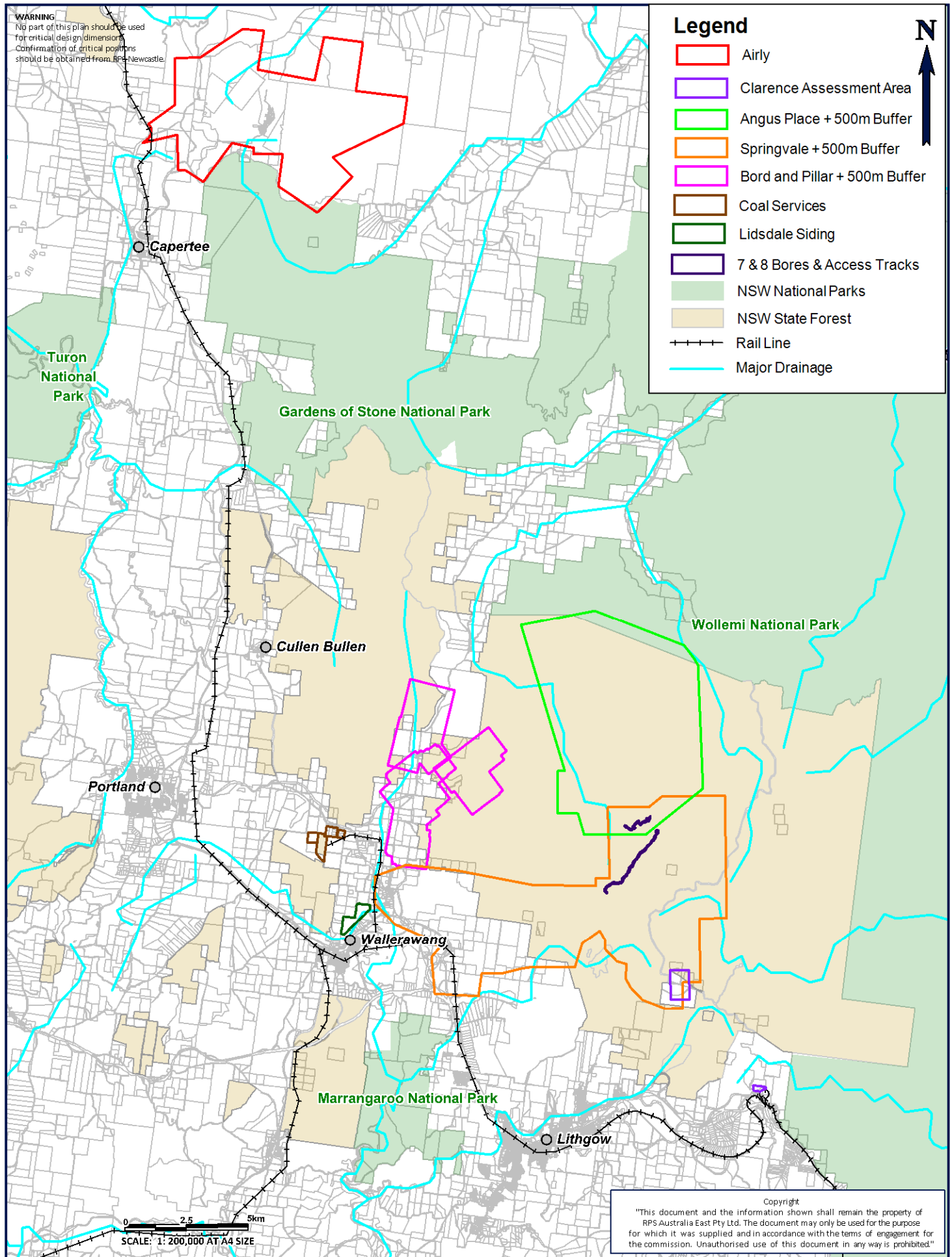
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Please send this document within 28 days signed back to **Philippa Sokol** or **Darrell Rigby** via:

- 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:\1085\Centennial\A4 Job\
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

**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 Philip Teitzel
Teitzel & Partners
PO Box 1151
Manly NSW 1655

Dear Philip

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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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

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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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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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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.

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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.

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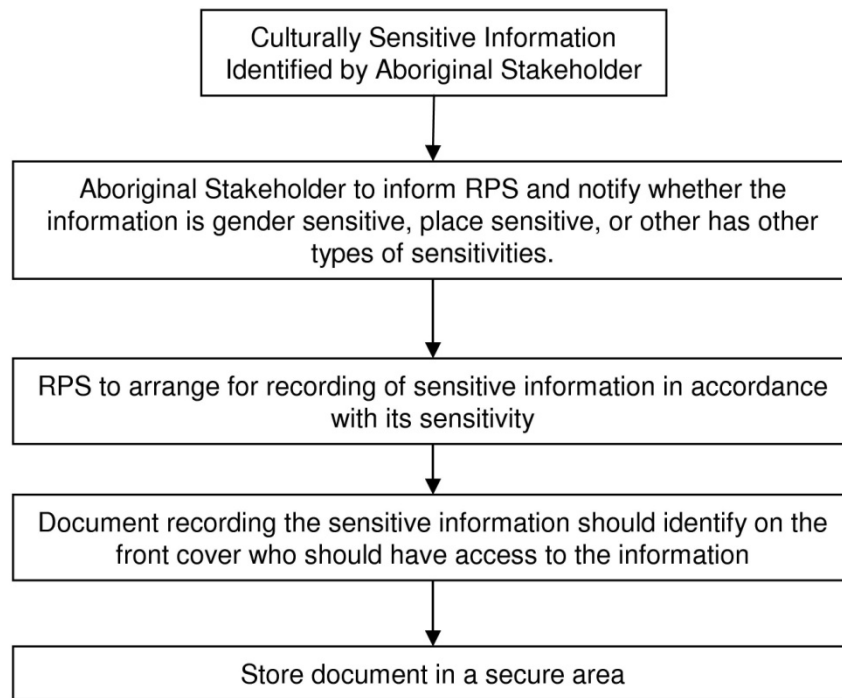
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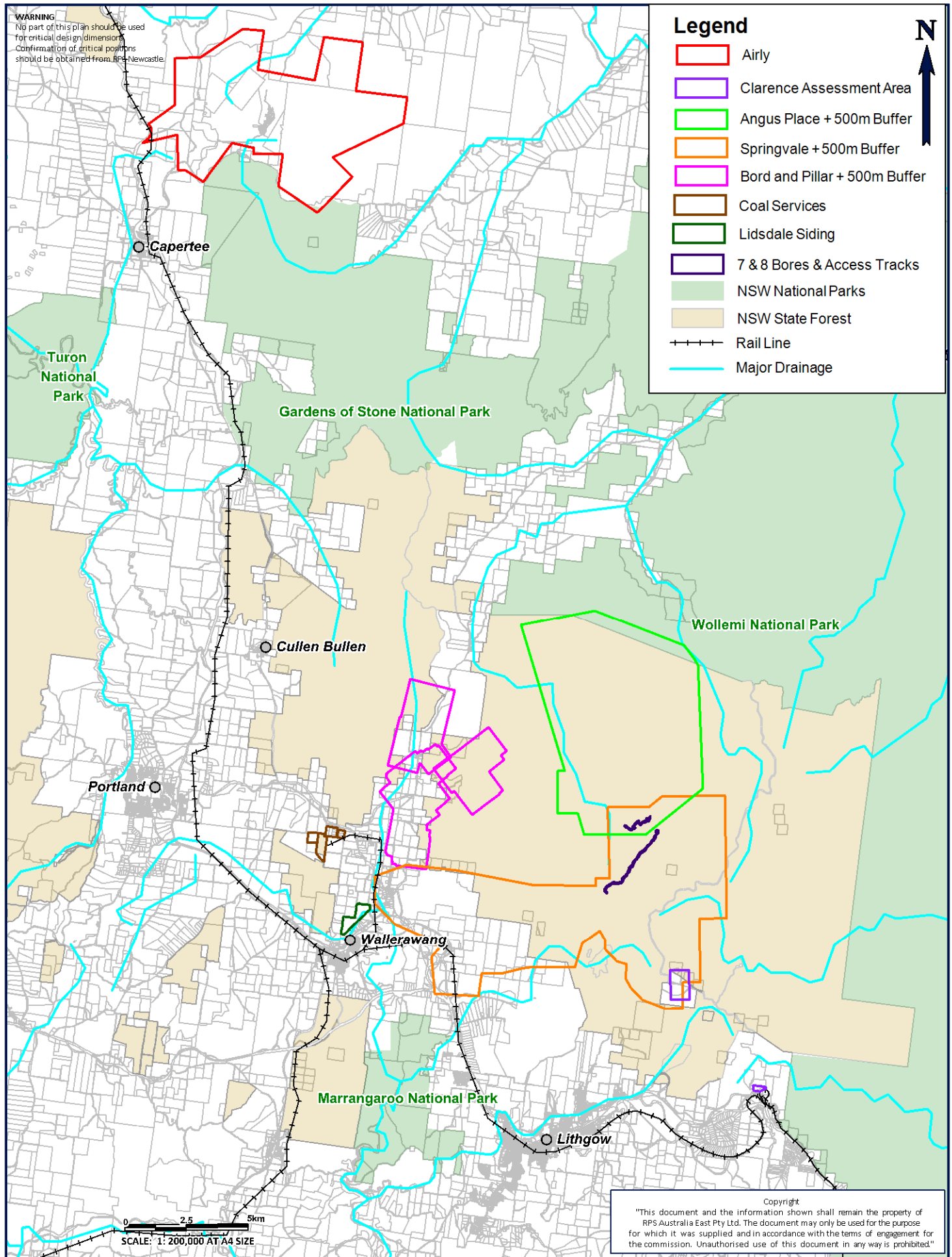
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AREAS

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PROJECTION: MGA ZONE 56

DATE: 23/11/2011
PURPOSE:

LAYOUT REF: J:\1085\Centennial\All Jobs\104424 Lithgow\10- Drafting
VERSION (PLAN BY): A4 (NW)

CLIENT: CENTENNIAL COAL
JOB REF: 110599

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Our Ref: 110599:DR
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Attn: Ms Sharon Williams
Mooka Traditional Owners
PO Box 70
Cowra NSW 2794

Dear Sharon

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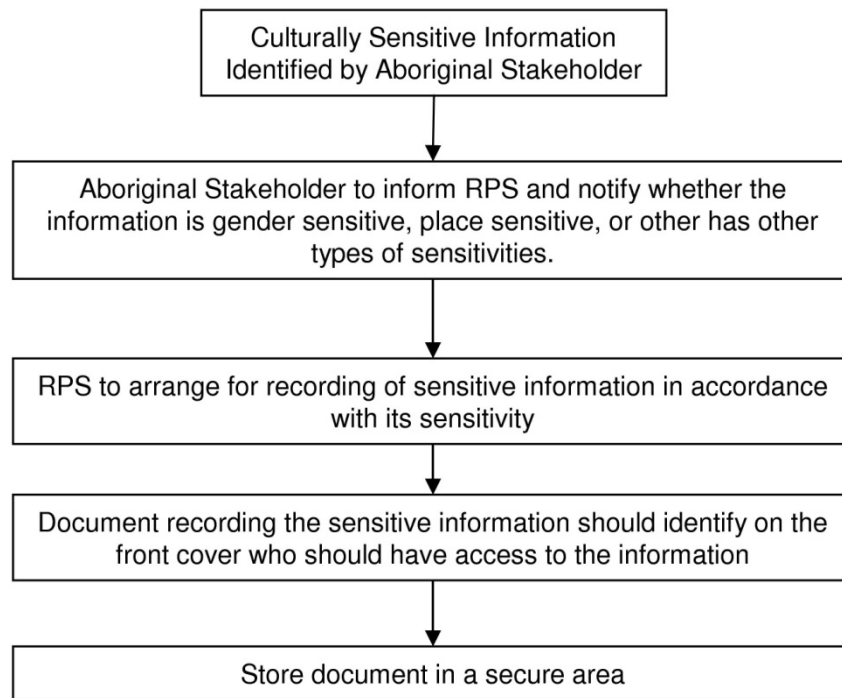
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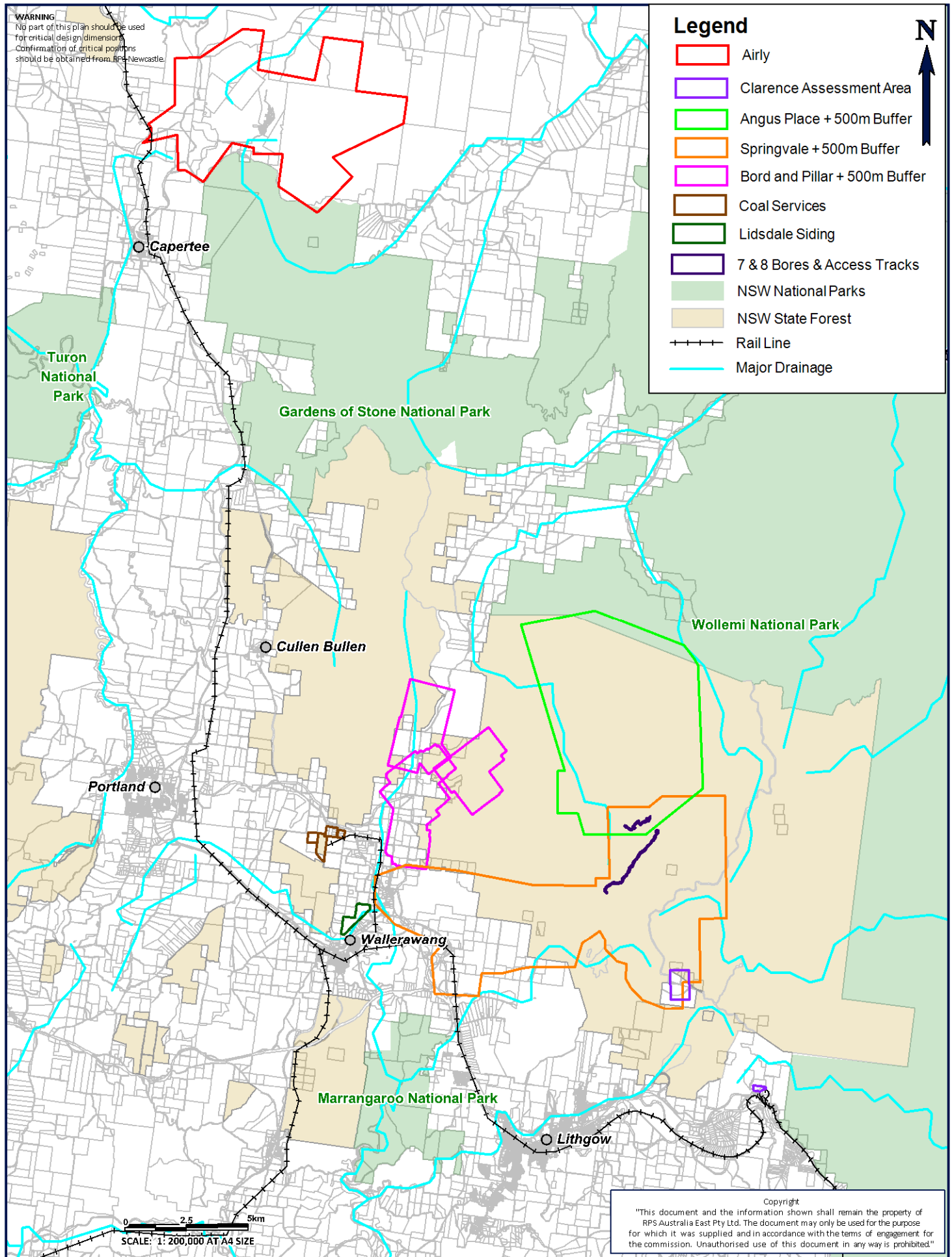
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AREAS

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

LAYOUT REF: J:\1085\Centennial\A4 Job\
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:** 111287-1**Date:** 23 January 2012

Attn: Toni-Lee Scott
 Bathurst Local Aboriginal Land Council
 PO Box 1500
 Bathurst NSW 2795

Dear Toni-Lee

RE: INVITE FOR SITE VISIT FOR THE SPRINGVALE EXTENSION PROJECT

RPS intends to undertake an archaeological field survey for the Springvale Extension Project which is a subsidiary of Centennial Coal (Western Holdings).

The Springvale Extension Project field survey is proposed to continue for a duration of six (6) weeks (although it could extend beyond this) and will be conducted from the Tuesday to Friday of each week. The following weeks and dates for the field survey are outlined in Table 1 below.

Table 1: Schedule of Field Survey Work

Week	Tuesday	Wednesday	Thursday	Friday
1	31/01/2012	01/02/2012	02/02/2012	03/02/2012
2	07/02/2012	08/02/2012	09/02/2012	10/02/2012
3	14/02/2012	15/02/2012	16/02/2012	17/02/2012
4	21/02/2012	22/02/2012	23/02/2012	24/02/2012
5	28/02/2012	29/02/2012	01/03/2012	02/03/2012
6	06/03/2012	07/03/2012	08/03/2012	09/03/2012

RPS Requirements from Bathurst Local Aboriginal Land Council

- 1) Site officer telephone number.
- 2) Emergency contact numbers.
- 3) Site officer must bring their own PPE gear including the following:
 - Hard hats;
 - High Visibility Clothing;
 - Steel Capped Boots(suitable for hiking);
 - Safety glasses;
 - Long sleeved shirts and trouser pants;
 - Sunscreen; and
 - Soft hats
- 4) Provide your own food and drink provisions
- 5) Provision of Safe work method statements, current and valid **Public Liability** and **Workers Compensation** certificates to RPS at least 1 week before the commencement of field work. (Note: If you do not have valid insurances your site officer WILL NOT be permitted to attend the field survey).

In accordance with the letter "Methodology for Archaeological Investigation for Centennial Coal Western Projects" sent to you on Wednesday 23rd November 2011, RPS invites Aboriginal stakeholders to provide culturally appropriate information verbally or in writing with regards to this project. This may include any places of cultural value which may, or may not contain archaeological material.

It is important that RPS is aware of your attendance for the field survey. Could you please inform RPS by **Friday 27th January 2012** if you will or will not be attending the field survey commencing next week.

We trust this information is sufficient for your purposes; however, should you require any further details or clarification, please do not hesitate to contact Philippa Sokol and/or Darrell Rigby (4940 4200).

Yours sincerely
RPS

Philippa Sokol
Archaeologist

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T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au**Our Ref:** 111287-1**Date:** 23 January 2012

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

Dear Sharon

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RPS Requirements from Gundungurra Tribal Council Aboriginal Corporation

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 - Hard hats;
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We trust this information is sufficient for your purposes; however, should you require any further details or clarification, please do not hesitate to contact Philippa Sokol and/or Darrell Rigby (4940 4200).

Yours sincerely
RPS

Philippa Sokol
Archaeologist

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:** 111287-1**Date:** 23 January 2012

Attn: Elwin Wolfenden
 Mingaan Aboriginal Corporation
 38 Tweed Rd
 Lithgow NSW 2790

Dear Elwin

RE: INVITE FOR SITE VISIT FOR THE SPRINGVALE EXTENSION PROJECT

RPS intends to undertake an archaeological field survey for the Springvale Extension Project which is a subsidiary of Centennial Coal (Western Holdings).

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T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au**Our Ref:** 111287-1**Date:** 23 January 2012

Attn: Lyn Syme
 North East Wiradjuri Company
 112-114 Main St,
 Ulan NSW 2850

Dear Lyn

RE: INVITE FOR SITE VISIT FOR THE SPRINGVALE EXTENSION PROJECT

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T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au**Our Ref:** 111287-1**Date:** 23 January 2012

Attn: Wendy Lewis
 Warrabinga Native Title Claimants
 Aboriginal Corporation
 525 Pheasants Nest Road
 Pheasants Nest NSW 2780

Dear Wendy

RE: INVITE FOR SITE VISIT FOR THE SPRINGVALE EXTENSION PROJECT

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Attn: Helen Riley
 Wiray-dyuraa Ngumbaay-dyil & Wiray-dyuraa Maying-gu
 38 Tweed Road
 Lithgow NSW 2790

Dear Helen

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Yours sincerely
RPS

Philippa Sokol
Archaeologist

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 |

 Please consider the environment before printing this email.

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



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

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: 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,



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>

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Newcastle Office

Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292
PO Box 428, Hamilton, NSW Australia 2303

Our Ref: PR111287
Date: 7 June 2013

Attn: Toni-Lee Scott
Bathurst Local Aboriginal Land Council
PO Box 1500
Bathurst NSW 2795

Via: Mail

Dear Toni-Lee

**RE: CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE SPRINGVALE COLLIERY
MINE 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 Wednesday 10th July 2013 via mail, fax or email to the below details:

Philippa Sokol
PO Box 428
Hamilton NSW 2303
Phone: (02) 4940 4200
Fax: (02) 4961 6794
Email: philippa.sokol@rpsgroup.com.au

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Yours sincerely
RPS

Philippa Sokol
Cultural Heritage Consultant



Newcastle Office

Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292
PO Box 428, Hamilton, NSW Australia 2303

Our Ref: PR111287
Date: 7 June 2013

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

Via: Mail

Dear Neville

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Cultural Heritage Consultant



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Our Ref: PR111287
Date: 7 June 2013

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

Via: Mail

Dear Sharon

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Our Ref: PR111287
Date: 7 June 2013

Attn: Elwin Wolfenden
Mingaan Aboriginal Corporation
38 Tweed Rd
Lithgow NSW 2790

Via: Mail

Dear Elwin

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Attn: Lyn Syme
North East Wiradjuri Company
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Via: Mail

Dear Lyn

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Attn: Helen Riley
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38 Tweed Road
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Via: Mail

Dear Helen

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