



Review of Environmental Factors

Subsidence Monitoring Line

Airly Mine, Capertee

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I.0 Introduction

I.1 Background

Airly Mine is an underground coal mine located on the northern fringe of the western coal fields of New South Wales, approximately 40 kilometres northwest of Lithgow and approximately 4.5 kilometres northeast of the township Capertee. Airly Mine is operated by Centennial Airly Pty Ltd (Centennial Airly) a company wholly owned by Centennial Coal Company.

Centennial Airly proposes to install a subsidence monitoring line, herein referred to as the “Project Area”, approximately 300 metres long due east of the Airly Mine pit top area orientated on a north-south axis (refer **Figure 1**). The monitoring line will be within the Mugii Murum-ban State Conservation Area (SCA) and will enable surface monitoring for subsidence as required by conditions associated with Modification 5 for DA162/91. Initial and ongoing surveys of the line will occur before, during, and post mining for a period of up to 5 years.

This Review of Environmental Factors (REF) has been prepared to assess the potential environmental impact of establishing the subsidence monitoring line within the SCA and to assist Office of Environment and Heritage (OEH) in making their determination.

The activity is exempt development under *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) and no formal approval is required under the *Mining Act 1992*.

I.2 The Proposed Activity

The proposed activity is to clear vegetation for the establishment of a subsidence monitoring line 300 metres long and up to 2 meters wide. Vegetation clearing will be kept to a minimum and avoid mature trees where possible.

I.3 The Applicant

This REF has been prepared on behalf of Centennial Airly Pty Ltd (Centennial Airly) who manages and operates the Airly Mine.

I.4 Existing Environment

I.4.1 Location

The proposed activity is located within the Mugii Murum-ban SCA which is owned and managed by OEH. The Project Area is located approximately 3 km east of the Airly Mine pit top above panel 121. There is no infrastructure within the immediate vicinity of the proposed subsidence line apart from existing access tracks. Refer to **Figure 1** for the location of the Project Area and proposed subsidence monitoring line.

I.4.2 Topography and Hydrology

The Project Area is located on the western slopes of Mount Airly and is flanked by the Genowlan Mountains to the west. The Airly-Genowlan mesa is characterised by rocky gorges and precipitous slopes with large outcroppings of sandstone and basalt capping around elevated areas. Mount Airly reaches heights of 1044 AHD (Australian Height Datum) however the surrounding region commonly ranges from 600 AHD to 1000

AHD. The mesa holds commanding views of the surrounding region with the nearest significant peak, Baal Bone Point, lying approximately 11 kilometres to the south.

Between these two mesa's is a valley in which Gap Creek travels north into Genowlan Creek before flowing into the Capertee River approximately six kilometres to the north-west. The surrounding region consists of numerous ephemeral water sources due to the steep escarpments and gorges.

1.4.3 Geology and Soils

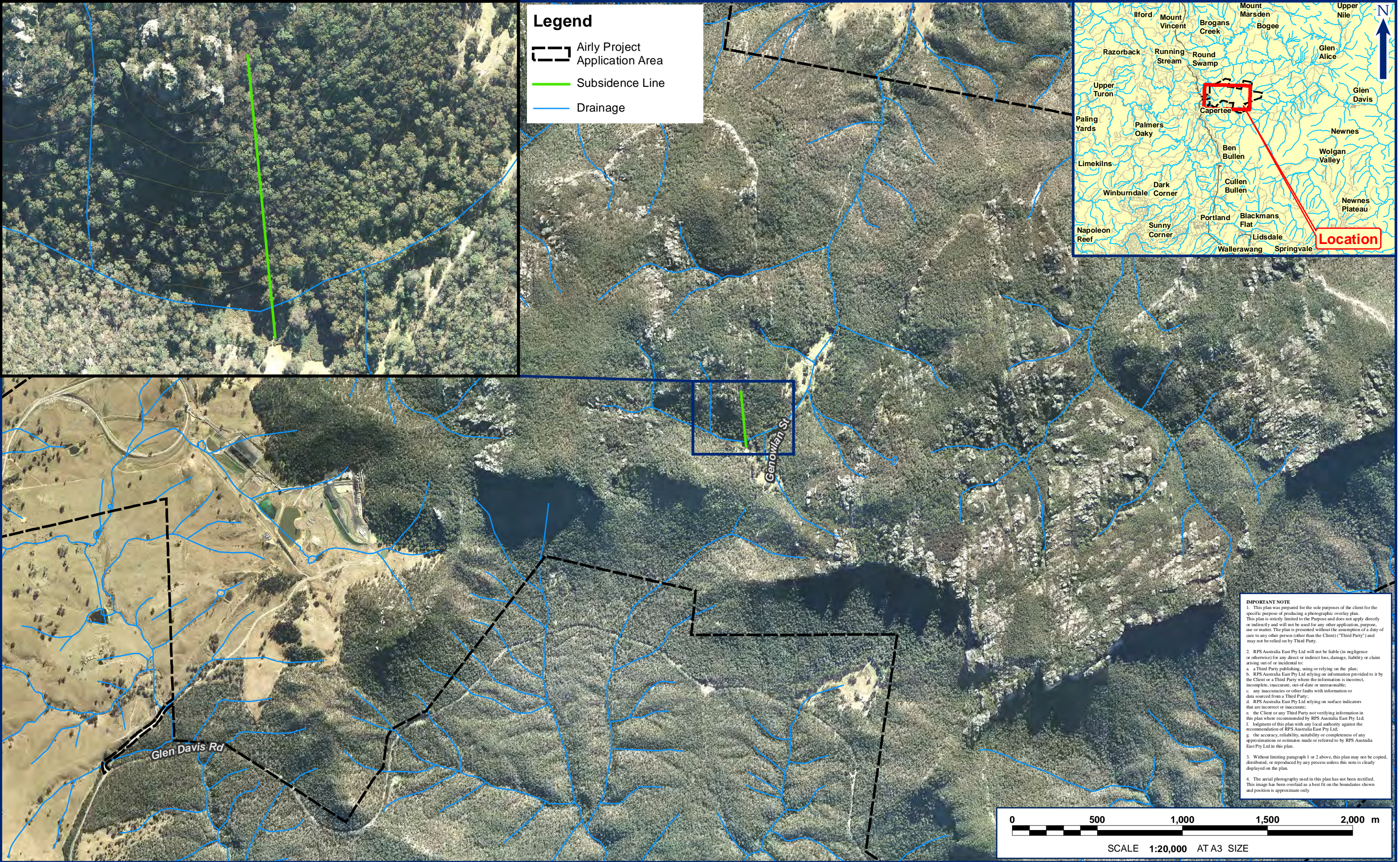
The Project Area is wholly situated on the Illawarra Coal Measures geological landscape. The Narrabeen group is characterised by sandstone, claystone, siltstone and Widden Brook Conglomerate and is part of the Clifton Subgroup. The Illawarra Coal Measures are characterised by shale, sandstone, conglomerate and chert with coal and torbanite seams.

The Project Area is situated over the Wollangambe and Warragamba soil landscapes. The Wollangambe soil landscape is characterised by single-grained, loamy sand topsoil that reaches an approximate depth of 30 centimetres on narrow crests and ridges, or 40 centimetres on sideslopes. This topsoil overlies 40 to 70 centimetres of either red clayey sand or bright yellowish clayey sand subsoil. In the Warragamba soil landscape, up to 50 centimetres of single-grained loamy sand topsoil overlies bedrock on crests and ridges. On side slopes, up to 35 centimetres of dark reddish brown clayey sand overlies brown pedal clay subsoil.

1.4.4 Flora and Fauna

The Project Area is situated within an area of Western Slopes Dry Sclerophyll Forest. It is characterised by ironbark eucalypts and cypress pines approximately 10 to 25 metres tall. Sclerophyll shrubs grow in prominence while grasses are relatively scarce, placing this class in the shrubby subformation of the dry sclerophyll forests. Indicative species of tree include tumbledown red gum, mugga, black cypress pine, white cypress pine, dirty gum, narrow-leaved ironbark and blue-leaved ironbark. Shrub species commonly present include several species of wattle, heath and myrtle, as well as hakea, grevillea and grass trees.

Typical animals found within the Project Area include kangaroos, wallabies, sugar gliders, possums, echidnas, a variety of lizards and snakes, birds, as well as rats and mice. Further detail on the flora and fauna within the Project Area will be discussed in **Section 4.2**.



2.0 Description of the Activity

Centennial Airly is proposing to carry out subsidence monitoring at the location within the existing lease (ML 1331) and across the surface above panel 121. The purpose of the activity is to provide monitoring pre, during and post-mining operations to allow the comparison between predicted and measured subsidence parameters.

Centennial Airly received approval for Modification 5 for extension of the current consent (DA162/91) to 31 October 2016. As part of the conditions of consent, Centennial Airly is required to prepare an extraction plan for any mining activities that are considered to cause subsidence (i.e. >20mm vertical movement at the surface). Accordingly, Centennial Airly are required to demonstrate that the first workings (including the splitting and quartering methods currently employed) have long term stability and that subsidence is within the limits of the predictions stated in the geotechnical assessment prepared for the modification.

The subsidence monitoring line will be located within a proposed 2 metre wide corridor with ground disturbance works limited to within this 2 metre wide area. The clearing of vegetation is required to achieve a line of site along the entire subsidence monitoring line. The line will be located immediately to the east of the Airly pit top car park and will be orientated north-south above panel 121. The installation of survey marks (stakes) driven into the ground at 10 metre intervals, driven at least 500 millimetres in to the ground, along the line will occur as part of the activity. Survey marks inserted along the line allow for the line to be adequately monitored by surveyors for the duration of the monitoring program. Survey stakes will be painted and capped to minimise the risk of injury to users of the Mugii Murum-ban SCA.

2.1 Subsidence Monitoring Line Design

The purpose of the subsidence monitoring line is to provide the following information:

- To provide subsidence, pillar stress and pillar dilation data for the quartering system,
- To demonstrate that the design principals are sound and that predicted subsidence matches measured data,
- To provide a calibration site to allow correlation of surface subsidence data with underground pillar monitoring with a view to ultimately carrying out underground monitoring only to demonstrate system performance. This will reduce the need for surface subsidence monitoring of this type of mining in the SCA to a minimum and therefore reduce impacts as far as possible moving forward.

The subsidence monitoring line will involve the following activities in the SCA:

- Clearing understory vegetation and unsafe limbs of tress for a distance of approximately 300 metres and for a distance of 1m either side of the line (2 metres total width). Note that wherever possible the line will be sited to avoid larger trees (i.e. be moved to go around them);
- Installation of star pickets at 10m intervals driven at least 500mm into the ground and painted and capped to minimise the risk of injury to users of the SCA,
- Initial and ongoing surveys of the line before during and post mining for a period of up to 5 years. It is not expected that resurveys post mining would be regular after 2 months post mining.

Once stability has been demonstrated the line will be decommissioned and removed. Due to the low impact nature of the monitoring line, it is envisaged that no remediation works will be required.

Figure 1 shows the location of the monitoring line, while **Table 1** provides the location details of the subsidence monitoring line.

Table 1 Location of Subsidence Monitoring line

Details	Coordinates (MGA Zone 56)
Start	E 223649 N 6333105
End	E 223675 N 6332838

2.2 Construction Activities

Ground works will be undertaken to prepare the proposed line, including minor clearing of grasses and low lying vegetation, small trees and logs that are within the path of the proposed subsidence monitoring line to allow direct measurement between survey marks.

The main equipment to be used to undertake the proposed activity includes:

- Chainsaw (where required);
- Brush hooks;
- Whipper snipper;
- Survey equipment – telescope, vertical rods;
- Star pickets and caps; and
- 4WD light vehicles (on existing access tracks).

It is expected to take approximately two to three days to clear the line and install survey marks.

2.3 Monitoring Activities

Subsidence monitoring will be undertaken along the subsidence monitoring line and will involve the following activities:

- Drive to the nearest existing available access point, and then proceed to the subsidence monitoring line on foot, carrying the necessary equipment.
- Measure changes in elevations between each survey mark using a non-intrusive surveying technique such as differential levelling. Differential levelling allows the surveyor to carry an elevation from a known reference point to other points by use of a precisely levelled telescope and graduated vertical rods;
- The monitoring of the survey marks will be undertaken by a team of two people, and will occur at a frequency dependent upon the requirements for subsidence development data in order to implement subsidence and mine operation plans.

2.4 Staff and Working Hours

Up to approximately 4 personnel will be required to undertake the installation of the subsidence monitoring line and up to 2 personnel to undertake subsidence monitoring.

2.5 Safety

To ensure the safety of workers, no remote work or use of portable combustion powered equipment will be undertaken during periods of extreme fire danger or during periods subject to a total fire ban. Workers will be suitably inducted with regard to evacuation procedures in the event of a bushfire and will have access to

communications suitable for use in remote areas. Staff will be required to sign in at the site control room at Airly Mine prior to entering the SCA and report in regularly over the duration of their works.

To ensure there is minimal risk to public safety, subsidence monitoring pegs will have minimal protrusion from the land surface and peg caps will be used to reduce the risk of injury. The proposed subsidence line is not located adjacent to roads or walking tracks, therefore public interaction is considered unlikely.

2.6 Timing and Duration

The proposed activities are anticipated to commence in the third quarter of 2016 and will be ongoing for up to 5 years to meet the requirements for subsidence development data. Once this has been achieved, all monitoring equipment including star pickets and caps will be removed from the subsidence monitoring line and the vegetation within the site allowed to naturally regenerate.

2.7 Access Arrangements

Under the *Mining Act 1992* (Mining Act), access arrangements are to be agreed in writing between the title holder and each landholder. Access arrangements will be agreed with OEH prior to the commencement of the proposed activity.

2.8 Justification of the Activity

Underground mining at Airly Mine utilises bord and pillar methods as the primary form of extraction. This form of mining results in negligible surface subsidence and would not likely have any impact on surface features.

The objectives of the proposed activity are:

- Provide data to assist with the management of risks associated with conventional and non-conventional subsidence;
- Validate the conventional and non-conventional subsidence predictions;
- Assist in the analysis of the relationship between the predicted and resulting conventional and non-conventional subsidence effects and predicted and resulting impacts under the Extraction Plan and any ensuring environmental consequences; and
- Inform the contingency plan and adaptive management process.

The proposed activity is necessary to enable the effective management of subsidence risks and impacts associated with underground mining at Airly Mine.

3.0 Planning Context

The activity involves minor land clearing for subsidence monitoring and is exempt from assessment and approval under either Part 4 or Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Centennial Airly will undertake consultation with OEH due to the activity area being within an SCA.

This REF has been prepared to assess the potential impacts of the activity and employs a precautionary and conservative approach to prevent or minimise potential impacts to the surface environment.

The following section provides an overview of additional planning context.

3.1 Mining, Petroleum Production and Extractive Industries SEPP 2007

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (NSW) applies to the activity. In recognition of the importance to NSW of mining, petroleum production and extractive industries, the Mining SEPP aims to:

- Provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State
- Facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources
- Establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources

Clause 10 of the Mining SEPP lists development that is exempt from approval under the EP&A Act. Clause 10(1) applies to development that is on land that:

(a) is not within an environmentally sensitive area of State significance, or

(b) is within a state conservation area but is not land referred to in paragraphs (a)–(e) or (g)–(i) of the definition of environmentally sensitive area of State significance.

None of the land subject to the activity is land that is referred to in the above paragraphs and therefore the proposed activity meets this criterion for exempt development.

Clause 10(2) states:

Development for any of the following purposes is exempt development if it is of minimal environmental impact:

(a) the construction, maintenance and use of equipment for the monitoring of weather, noise, air, groundwater or subsidence

The proposed activity is for the undertaking of a subsidence monitoring line as part of a broader program of subsidence monitoring. The activity has been found to be of minimal environmental impact and therefore it meets this criterion and is exempt development under the provisions of the Mining SEPP.

3.2 Mining Act 1992

The objects of the *Mining Act 1992* (Mining Act) are:

- To recognise and foster the significant social and economic benefits to New South Wales that result from the efficient development of mineral resources, and
- To provide an integrated framework for the effective regulation of authorisations for prospecting and mining operations, and
- To provide a framework for compensation to landholders for loss or damage resulting from such operations, and
- To ensure an appropriate return to the State from mineral resources, and
- To require the payment of security to provide for the rehabilitation of mine sites, and
- To ensure effective rehabilitation of disturbed land and water, and
- To ensure mineral resources are identified and developed in ways that minimise impacts on the environment.'

Under the *Mining Act 1992* Section 73 – Rights under mining lease, Centennial Airly has the following rights:

1) The holder of a mining lease granted in respect of a mineral or minerals may, in accordance with the conditions of the lease:

(c) carry out on that land any mining purpose.

The activity and the broader subsidence monitoring program currently in place is consistent with the rights of Centennial Airly in accordance with this Act.

3.3 Environmental Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) identifies Matters of National Environmental Significance (MNES) and contains schedules of threatened species and Ecologically Endangered Communities (EECs) to which it affords protection. The EPBC Act requires the Commonwealth Minister for the Environment to approve actions which may have an impact on matters of national environmental significance. MNES include:

- World heritage areas
- National heritage places
- Wetlands of national importance
- Commonwealth listed threatened species
- Commonwealth listed migratory birds
- Commonwealth marine area
- Commonwealth land
- Water resources, in relation to coal seam gas and large coal mining development

MNES may be referred to the Department of Environment (DoE) by a proponent for consideration if any threatened species, EECs or water resources are potentially going to be impacted by the proposed activity. Impacts constituting a controlled action upon any MNES that have not been referred to DoE may be referred by a third party and may be subject to prosecution where the proposed action has not been previously assessed by DoE.

The proposed subsidence monitoring line is not expected to have any significant impact on any threatened species, EECs or MNES provided the recommendations set out in the Ecological Due Diligence Survey are adopted (refer **Appendix 1**). Therefore a referral under the provisions of the EPBC Act is not necessary for this activity.

3.4 Threatened Species Conservation Act 1995 and Fisheries Management Act 1994

The *Threatened Species Conservation 1995* (TSC Act) and *Fisheries Management Act 1994* (FM Act) are NSW environmental legislative instruments that contain schedules of species and EECs which are afforded threatened status and require consideration with regard to possible impacts as a consequence of a proposed action. Under the current legislative requirements of Section 5A of the EP&A Act each threatened species or EEC that may be affected by a proposed action is subject to the seven-part test of significance.

Three vegetation communities were confirmed to occupy the Project Area, of which, none are commensurate with any TSC Act or EPBC Act EECs.

The vegetation clearing required to establish the subsidence monitoring line is unlikely to significantly impact flora and fauna in the locality. The surrounding areas contain extensive contiguous suitable habitat and only minor vegetation clearing activities are proposed to occur.

3.5 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) aims to protect and reduce degradation of the environment. The POEO Act examines issues such as air quality, pollution, waste, water quality and noise. The Act also prescribes 'activities' in which an environment protection licence (EPL) must be issued by the Department of Environment, Climate Change and Water (DECCW) now OEH. These 'activities' include certain size industrial, mining and agricultural developments.

Clause 5 and Schedule 1 of the POEO Act pertain to works that are identified as 'scheduled activity'. The proposed monitoring subsidence line is not identified as a 'scheduled activity' and therefore the activity does not require an EPL to be issued by OEH.

3.6 National Parks and Wildlife Act 1974

3.6.1 Threatened Species

Part 8A of the *National Parks and Wildlife Act 1974* (NPW Act) regulates the undertaking of activities, which may impact on threatened species, populations and ecological communities listed under the TSC Act and their habitats. The NPW Act provides that a person must not harm any animal that is a threatened species, population or ecological community, pick any plant which is part of a threatened species, population or ecological community, damage any critical habitat or damage any habitat of a threatened species, population or ecological community without a licence being obtained under the NPW Act or TSC Act, or unless another exception applies.

3.6.2 Aboriginal Cultural Heritage

The NPW Act conserves places, objects and features of significance to Aboriginal people.

It is an offence under the NPW Act to:

- Harm or desecrate an object that the person knows is an Aboriginal object except in accordance with an Aboriginal Heritage Impact Permit (AHIP)

- Harm or desecrate Aboriginal objects and Aboriginal places except in accordance with an AHIP or where the person can show they exercised due diligence to reasonably determine that no Aboriginal object will be harmed.

An Aboriginal Desktop Due Diligence Assessment has been prepared for this REF in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (2010) ("Due Diligence Code") and the NSW Minerals Industry *Due Diligence Code of Practice for the Protection of Aboriginal Objects* (Minerals Council 2010) ("Minerals Due Diligence Code"). The Assessment, provided in **Appendix 2**, determined that the proposed activity will not impact on any known Aboriginal objects or places. Provided that the mitigation measures identified within the Assessment and in Section 4 of the REF are carried out, impacts to any unknown Aboriginal objects or places should be avoided. Therefore, an Aboriginal Heritage Impact Permit (AHIP) is not required for the proposed activity.

3.7 Native Vegetation Act 2003

The *Native Vegetation Act 2003* (NV Act) seeks to encourage revegetation and rehabilitation of land with appropriate native vegetation, provide incentives to landholders to manage native vegetation on their properties, and end broad scale clearing, unless it improves or maintains the environment.

The NV Act does not apply to any clearing authorised under the *Mining Act 1992*.

3.8 Heritage Act 1977

The main objective of the *Heritage Act 1997* is to conserve the environmental heritage of the State of NSW. "Environmental heritage" is defined to include places, buildings, works, artefacts, moveable objects, and precincts, of State or local heritage significance. Under the Act, it is an offence to disturb an item of heritage significance without the consent of the Heritage Council.

There are no items of environmental heritage within the vicinity of the subsidence monitoring line and the activity will therefore have no environmental heritage impact subject to the application of the mitigation measures outlined in **Section 4.3.3**.

4.0 Environmental Impacts and Management

4.1 Introduction

This section sets out the potential impacts and any appropriate mitigation measures associated with the activity. The key issues relate to ecology and aboriginal heritage. This assessment focuses on these two issues, however the following impacts were also considered in preparing the REF:

- Air;
- Chemical and hazardous substances management;
- Contaminated land;
- Groundwater;
- Land use;
- Local community;
- Natural resource use;
- Noise;
- Soils;
- Visual; and
- Waste minimisation and management.

The above issues have been addressed in Section 4.4 of this REF, whilst the specialist reports for Ecology and Cultural Heritage are provided in **Appendix 1** and **Appendix 2** respectively and summarised in Section 4.2 and Section 4.3 respectively.

4.2 Ecology

An Ecological Due Diligence Survey was prepared by RPS for the activity and is contained in **Appendix 1**.

The Ecological Due Diligence Survey included:

- Database searches, including the EPBC Act Protected Matters Search Tool, for threatened species, populations and ecological communities within a 5 kilometre radius of the site;
- Review of relevant photos and maps, including aerial photography and National Vegetation Information Systems mapping within the vicinity of the site;
- A review of previous ecological works conducted within the larger Airly Project Application Area (PAA) by RPS (2014) provide an indication of mapped vegetation communities along the proposed subsidence line, and any threatened species listed under the Commonwealth *Environmental Conservation and Biodiversity Conservation Act 1999* (EPBC Act) and/or NSW *Threatened Species Act 1995* (TSC Act) that may be potentially impacted upon by the activity; and
- A field survey by a qualified ecologist on 29 July 2016.

The proposed subsidence monitoring line was traversed on foot by a qualified RPS ecologist to determine ecological attributes of the area including targeted surveys for threatened flora species, ground-truthing of threatened ecological communities (if any) and location of fauna habitat features including hollow-bearing trees. A Trimble D-GPS unit was used to record feature locations within the Project Area.

4.2.1 Existing Environment

A review of ecological works conducted in the area by RPS (2014) identified *Eucalyptus cannonii* (Capertee Stringybark) immediately adjacent to the proposed subsidence line. This species is listed as vulnerable under the *NSW Threatened Species Conservation Act 1995* (TSC Act).

Vegetation mapping for the Airly PAA (refer **Figure 2**) displayed three ecological communities along the Project Area including:

- Map Unit (MU) 3 – Hillslope Talus Mountain Gum – Brown Stringybark – Grey Gum – Broad-leaved Hickory Moist Forest;
- MU 43 – Pagoda Rock Sparse Shrubland;
- MU 62 – Cleared and Severely Disturbed Lands.

Of these vegetation communities, none are commensurate with any TSC Act or EPBC Act listed Endangered Ecological Communities (EEC).

4.2.1.1 Flora Species

Vegetation communities along the Project Area were shown to be as described and mapped by RPS (2014). No vegetation communities commensurate with EECs were found to occur within the Project Area.

Seven individuals of the threatened plant *Eucalyptus cannonii* were identified along the subsidence monitoring line and within 10 m of the Project Area (refer to **Figure 3**).

4.2.1.2 Fauna Species

Opportunistic fauna surveys undertaken during the field survey event, detected a pair of Gang-Gang Cockatoos (*Callocephalon fimbriatum*) in vegetation within the Project Area. This species is listed as vulnerable under the TSC Act.

4.2.1.3 Habitat Features

Four hollow-bearing trees were detected within 10 m of the Project Area as shown in **Figure 3**.

The Project Area was found to contain an area of rocky pagodas which provides habitat for a range of fauna including the threatened Broad-headed Snake (*Hoplocephalus bungaroides*) and Brush-tailed Rock-wallaby (*Petrogale penicillata*).

The location of all threatened flora and fauna, and habitat features are displayed in **Figure 3**.

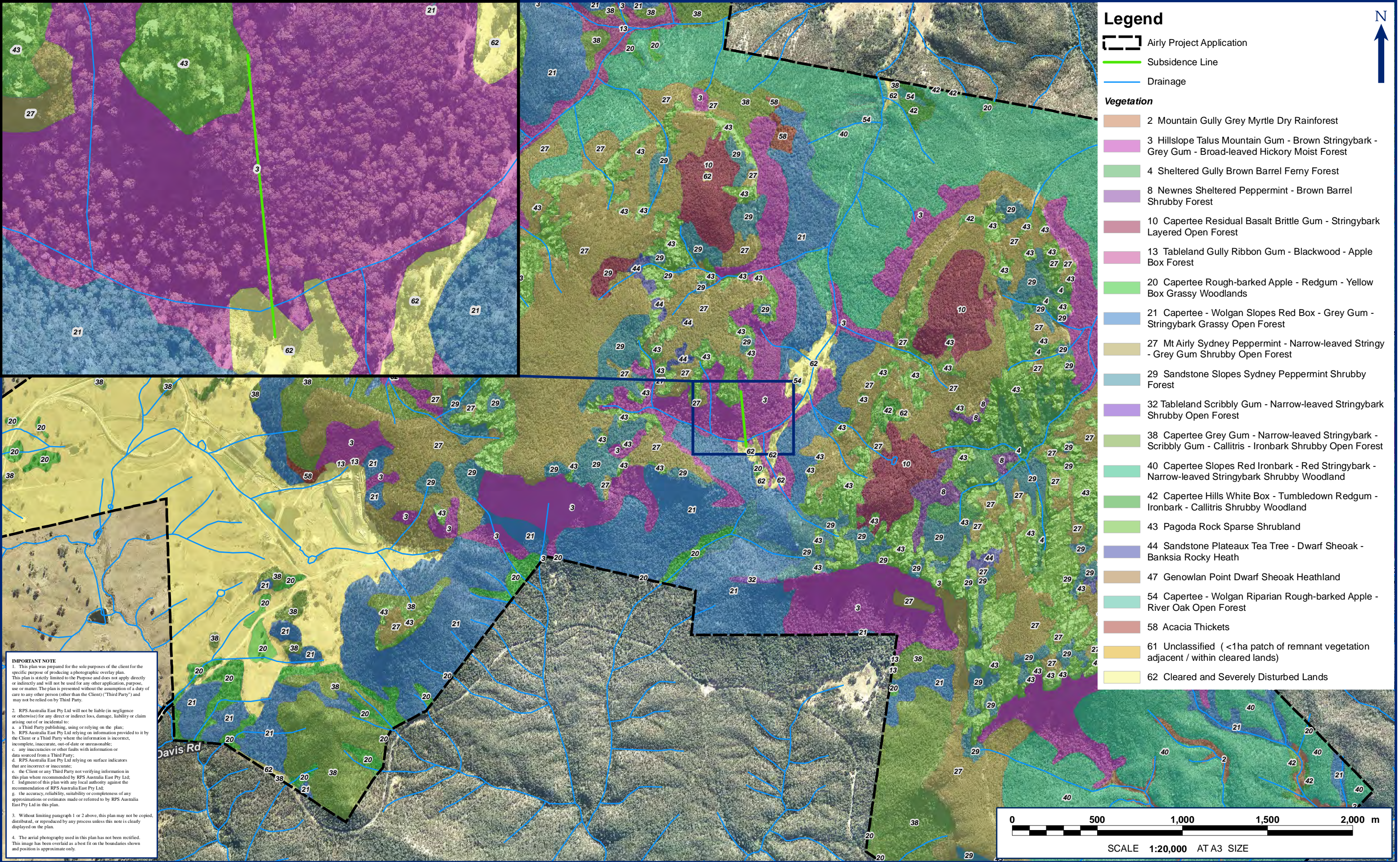


FIGURE 2 : VEGETATION COMMUNITIES

LOCATION : AIRLY, NSW

DATUM:GDA 1994

DATE : 5/08/2016

VERSION (PLAN BY): A A3 (Natalie.Wood)

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: ECOLOGY

PATH: J:\JOBS\Centennial\All Jobs\132971 Airly Subsidence Line\10 - Drafting\Arcgis Map Documents\Ecol\132971 Figure 3 - Veg 20160805.mxd

CLIENT: CENTENNIAL AIRLY
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FIGURE 3: THREATENED FLORA, FAUNA AND HABITAT

LOCATION : AIRLY, NSW

DATUM:GDA 1994

DATE : 8/08/2016

VERSION (PLAN BY): AA3 (Natalie.Wood)

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: ECOLOGY

PATH: J:\JOBS\Centennial\All Jobs\132971 Airly Subsidence Line\10 - Drafting\Arcgis Map Documents\Ecol\132971 Figure 2 - ThF_F 20160805.mxd

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4.2.2 Potential Impacts

Two hollow-bearing trees and an area supporting rocky pagodas were discovered within a 10m buffer of the Project Area. Rock pagodas are susceptible to impacts created by subsidence that could ultimately result in cracking of rock, fissures or rock fall. RPS (2014) has assessed the predicted subsidence modelling for Airly, with no significant impacts considered to occur. Minor vegetation clearing proposed to occur within the Project Area will remove potential foraging habitat for local fauna. Subsequently, no significant impacts on fauna habitat are expected, due to the relatively minor actions of the proposed works.

The vegetation clearing required to establish the subsidence monitoring line is unlikely to significantly impact flora and fauna in the locality. The surrounding areas contain extensive contiguous suitable habitat and only minor vegetation clearing activities are proposed to occur.

4.2.3 Mitigation Measures

The following mitigation measures have been outlined to limit potential impacts of the proposed activities on threatened flora and fauna and surrounding habitat:

- Access to the subsidence line during installation and ongoing monitoring works should be restricted to established tracks where possible;
- No *Eucalyptus cannonii* are to be removed and should be clearly flagged and avoided;
- Any felled trees and branches are to be retained within the immediate vicinity of the created monitoring line where possible to provide potential habitat for ground-dwelling fauna into the future;
- Hollow bearing trees will be avoided where possible. If hollow bearing trees are removed, nest boxes should be installed in surrounding habitat to compensate for the loss of hollows; and
- Disturbance to potential fauna habitat should be avoided, whilst removal of ground and shrub species during clearing works should be minimised wherever possible

4.3 Cultural heritage

An Aboriginal Desktop Due Diligence Assessment has been completed by RPS for the proposed subsidence monitoring line and is attached as **Appendix 2**. The Assessment was prepared in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (2010) ("Due Diligence Code") and the NSW Minerals Industry *Due Diligence Code of Practice for the Protection of Aboriginal Objects* (Minerals Council 2010) ("Minerals Due Diligence Code"). The following provides a summary of the description of the existing environment, potential impacts and mitigation measures that will be implemented.

4.3.1 Existing environment

A review of previous archaeological and heritage reports has been undertaken, including the relevant searches of the Aboriginal Heritage Information Management System (AHIMS) and Heritage register, to inform this due diligence assessment. Details of this review are provided below.

4.3.1.1 AHIMS Search

A search was undertaken of the Aboriginal Heritage Information Management System (AHIMS) on 27 July 2016. Details of the search area are provided in **Table 2**.

Table 2 AHIMS Search Parameters

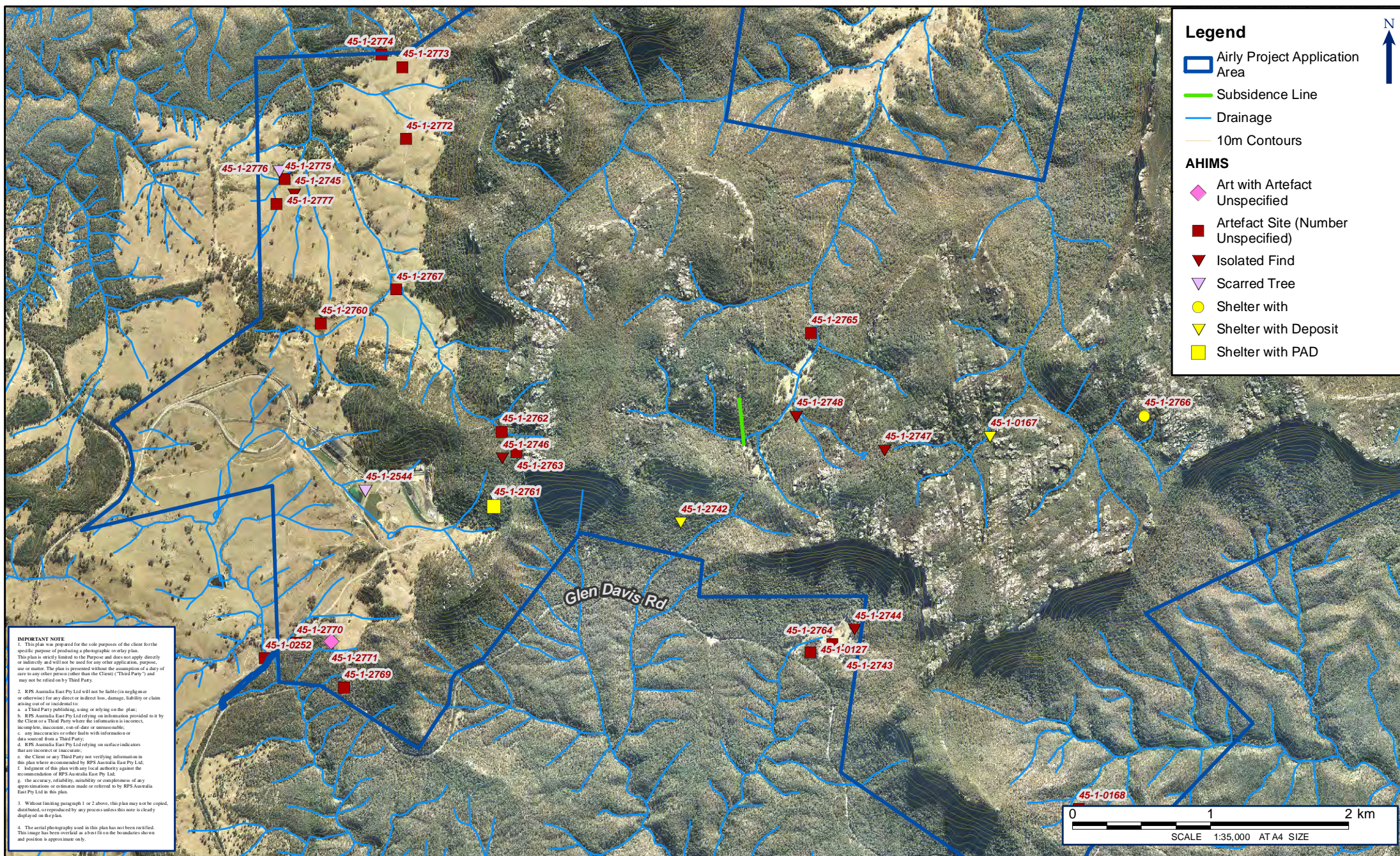
GDA zone	Coordinates	
	Easting	Northing
56	220148 to 227469	6329861 to 6338038

The search revealed 29 previously recorded Aboriginal sites within these coordinates, however no Aboriginal objects or places were present in the Project Area.

Although the area is heavily vegetated there are few scarred trees amongst the registered AHIMS sites. This is likely due to land clearing practices which have occurred over the previous 150 years. There are substantial sandstone overhangs and escarpments which offer the opportunity for shelter, these make up approximately 13.8% of the registered sites. Due to the availability of the sandstone escarpments it is considered likely that more exist in the area. Refer to **Figure 4** for AHIMS results in relation to the proposed subsidence monitoring line.

4.3.1.2 Historic Heritage

The northern half of the Project Area extends into the Airly, Torbane and Genowlan oil shale site which is listed on the Lithgow LEP (A144). This site contains extensive buildings associated with oil shale mining from 1893 until closing in 1918 (RPS 2013). No built structures lie within the Project Area, the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted. Refer to **Figure 5** for the location of historic heritage items in relation to the proposed subsidence monitoring line.



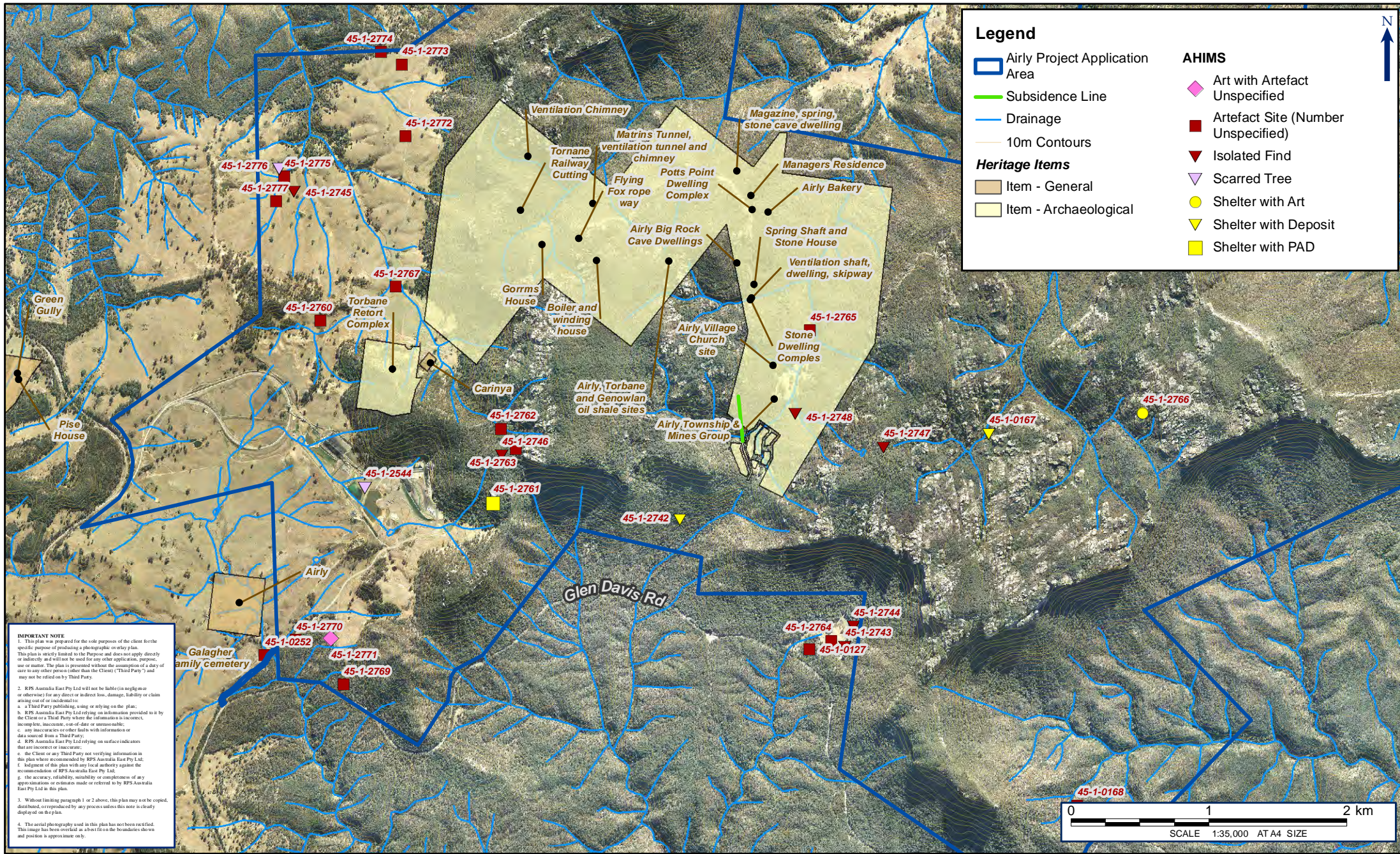


FIGURE 5: HERITAGE ITEMS

LOCATION : AIRLY, NSW

DATUM: GDA 1994

PROJECTION: GDA 1994 MGA Zone 56

DATE : 2/08/2016

PURPOSE: HERITAGE

VERSION (PLAN BY):

A A4 (amy.obrien)

CLIENT: CENTENNIAL AIRLY

JOB REF: PR132971

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4.3.2 Impact Assessment

The results of the AHIMS search and the visual inspection indicate that there are no identified Aboriginal objects in the Project Area. As there are no identified Aboriginal objects in the Project Area it is assessed that there is no identified risk of harm to Aboriginal objects and an AHIP is not required for the proposed activity.

No built structures associated with the Airly, Torbane, and Genowlan oil shale sites lay within the Project Area and the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted.

4.3.3 Mitigation Measures

No Aboriginal objects or places have been identified within the Project Area and therefore an Aboriginal Heritage Impact Permit (AHIP) is not required for the proposed activity.

The following mitigation measures will be implemented throughout the clearing and monitoring phases of the proposed activity in the event an Aboriginal or non-Aboriginal heritage object is discovered.

- All relevant Centennial staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, which may be implemented as a heritage induction;
- This due diligence assessment must be kept by Centennial so that it can be presented, if needed, as a defence from prosecution under Section 86(2) of the *National Parks and Wildlife Act 1974*;
- If unrecorded Aboriginal object/s are identified in the Project Area during works, then all works in the immediate area must cease and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014);
- In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014); and
- If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The Heritage Branch, Office of Environment & Heritage (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

4.4 Other Potential Impacts

Table 3 outlines additional potential impacts that have been considered and assessed as part of this assessment.

Table 3 Assessment of Other Potential Impacts

Impact	Cause and environmental safeguard
Air	Installation of the subsidence monitoring line may generate dust due to the clearing of understorey however this would be temporary and minor in nature. There will be no impact on air quality as a result of the operation of the monitoring line.
Chemical and hazardous substances management	The subsidence monitoring line will not use any chemicals or hazardous substances.
Contaminated land	The activity will not result in any contamination and will not result in the disturbance of contaminated land. A detailed contamination investigation is not required.
Groundwater	There will be no impacts on groundwater associated with the initial clearing or the subsequent monitoring.
Land use	The activity will have no impacts on land use in the vicinity of the site. The monitoring

Impact	Cause and environmental safeguard
	program is temporary and will be removed following collection of necessary data.
Local community	There will be no impacts to the community as a result of the activity.
Natural resource use	The activity will not have any adverse impacts on soil or other resources. The infrastructure is temporary in nature and will be removed once sufficient data is collected.
Noise	The activity will result in some temporary noise impacts during minor clearing works. The monitoring program will not result in any noise or vibration during operation.
Soils	The proposed infrastructure is to be secured to the forest floor and will not have impacts on soils. In order to avoid any potential erosion of the forest floor during installation, as much vegetation will be retained as possible, including ground covers.
Visual	The activity area is remote, heavily vegetated and not easily accessible. The monitoring will be removed following the collection of necessary data.
Waste minimisation and management	Operation of the monitoring equipment will not generate waste and will therefore not require the disposal of any waste products. Any waste generated during installation or removal of the monitoring equipment will be removed from site and reused where possible.

5.0 Conclusions

This REF has been prepared to assess the potential impacts of the installation of a subsidence monitoring line as part of a proposed subsidence monitoring and reporting program to satisfy conditions associated with Modification 5 of DA162/91 for Airly Mine. The purpose of the monitoring is to measure the effects of subsidence pre, during and post-mining of the specified future underground mining activities.

A Flora and Fauna Due Diligence Assessment and Aboriginal Heritage Due Diligence Assessment were undertaken to assess the potential impacts of the activity and to ensure the location of monitoring infrastructure will have a negligible environmental impact.

The proposed monitoring is temporary and will be removed following collection of the necessary information. As the disturbance will be minimal it is proposed to let the site naturally regenerate following the removal of all monitoring equipment. This REF has concluded that the activity will have negligible impacts on the environment provided the subsidence monitoring line is implemented using mitigation measures outlined in this REF. The activity is not expected to have an impact on species or ecological communities listed under the TSC Act or EPBC Act, or any other MNES.

No approvals under Part 4 of the EP&A Act are required for this activity as the establishment of the subsidence monitoring line constitutes exempt development under clause 10 of the *Mining SEPP 2007*, however an assessment under Part 5 of the EP&A Act is required to determine the level of impact from the proposed activity.

6.0 Abbreviations

Abbreviation	Meaning
AHIMS	Aboriginal Heritage Information Management Systems
AHIP	Aboriginal Heritage Impact Permit
AIS	Agricultural Impact Statement
BoM	Bureau of Meteorology
DoE	Department of Environment
DPI - Water	Department of Primary Industries - Water
EA	Environmental Assessment
EEC	Ecologically Endangered Communities
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EMP	Environmental Management Plan
IBC	Intermediate bulk container
ICNG	Interim Construction Noise Guidelines (DECC 2009)
LEP	Local Environmental Plan
LGA	Local government area
KTP	Key threatening processes
ML	Mining lease
OEH	NSW Office of Environment and Heritage
MNES	Matters of National Environmental Significance
MSDS	Materials Safety Data Sheets
NP&W Act	<i>National Parks & Wildlife Act 1974</i>
NPWS	NSW National Parks and Wildlife Services
SAL	Strategic agricultural land
SCA	State Conservation Area
SEPP	State Environmental Planning Policy
SHR	State Heritage Register
SIS	Species Impact Statement
SSD	State Significant Development
TSC Act	<i>Threatened Species Conservation Act 1995</i>
WMA	<i>Water Management Act 2000</i>

Appendix I

Ecological Due Diligence Assessment



Newcastle Office

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

Our Ref: 132971:LE
Date: 15 August 2016

Attn: Sam Price
Centennial Airly Pty Ltd
319 Glen Davis Road
Capertee NSW 2846

Via: Email

Dear Sam,

RE: DUE DILIGENCE SURVEY FOR PROPOSED SUBSIDENCE MONITORING LINE AT AIRLY MINE

RPS Australia East (RPS) was commissioned by Centennial Airly to undertake a due diligence ecological assessment for a subsidence line at Airly in the Lithgow Local Government Area (LGA). The area subject to the proposed activity is approximately 300 m in length, and will be hereafter referred to as the 'Project Area' (**Figure 1**).

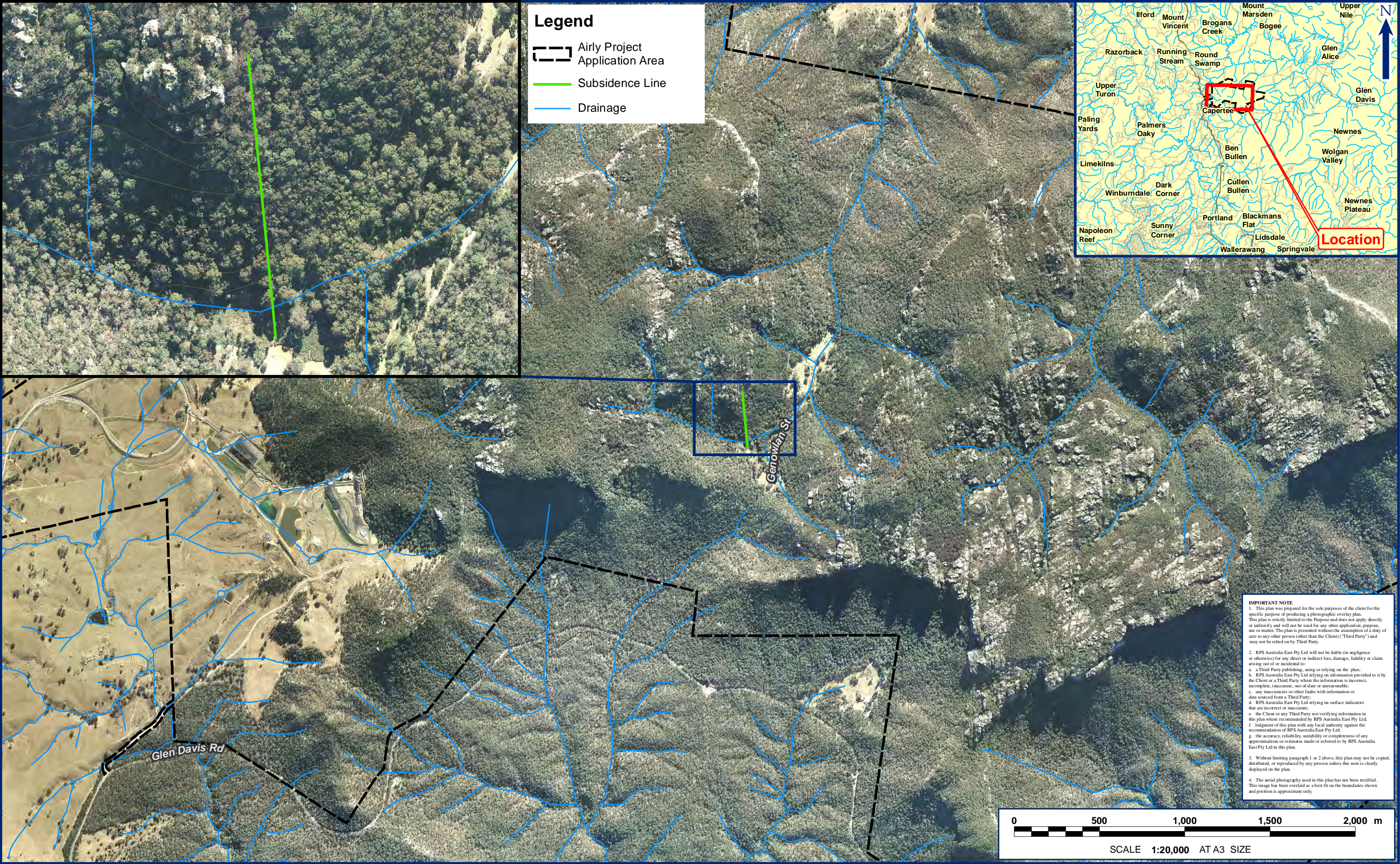
The proposed activity will include clearing of understorey vegetation and removal of unsafe tree limbs along the proposed subsidence line with a 10m buffer on either side. It is expected that the vegetation removal will be undertaken using hand tools and will be minimal to ensure a clear surveyor's sight line only.

The clearing activities include the removal of trees only where necessary to maintain a clear sight line. Hollow bearing trees and larger mature trees will be given priority for retention, with clearing impacts limited to smaller trees wherever possible. Only sufficient scrub and undergrowth will be removed to allow a clear line of sight between the pickets. The clearing is proposed to be 2 metres wide to allow a steel band measurement between the tops of the star pickets. The undergrowth clearing is done by hand and to a minimal width to provide 'on foot' access and surveying. Monitoring of the Project Area will continue until subsidence movements have ceased and the area has been deemed stable over the long term.

Legislation

This due diligence assumes that relevant approvals under the *Environmental Protection and Assessment Act 1979* (EP&A Act 1979) exist for clearance works and any associated activities required for monitoring equipment installation.

Consideration has been afforded to the requirements of the proposal in relation to the *Native Vegetation Act 2003* (NV Act 2003). Exclusions apply to any clearing on land described or referred to in Part 1 of Schedule 1 (*land reserved under the National Parks and Wildlife Act 1974*); therefore the NV Act 2003 does not apply to the proposed clearing works.



TITLE : **FIGURE 1 : SITE LOCATION**

LOCATION : **AIRLY, NSW**

DATUM:GDA 1994

DATE : **5/08/2016**

VERSION (PLAN BY): **AA3 (Natalie.Wood)**

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: **ECOLOGY**

PATH: J:\JOBS\Centennial\All Jobs\132971 Airly Subsidence Line\10 - Drafting\Arcgis Map Documents\Ecol\132971 Figure 1 - Location 20160805.mxd

CLIENT: **CENTENNIAL COAL**
JOB REF: **PR132971**

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Methodology

A review of previous ecological works conducted within the larger Airly Project Application Area (PAA) by RPS (2014) was conducted to provide an indication of mapped vegetation communities within the Project Area, and any threatened species listed under the Commonwealth *Environmental Conservation and Biodiversity Conservation Act 1999* (EPBC Act) and/or NSW *Threatened Species Act 1995* (TSC Act) that may be potentially impacted upon by the proposed activities.

A field survey was conducted by RPS ecologist Joe May, along with Graduate Cultural Heritage Consultant Ben Slack on the 29th of July 2016. The proposed subsidence line, including a 10 m buffer around the line, was traversed on foot to determine ecological attributes of the area including targeted surveys for threatened flora species, ground-truthing of threatened ecological communities (if any) and location of fauna habitat features including hollow-bearing trees. Opportunistic sightings of fauna were also documented. A Trimble D-GPS unit was used to record feature locations within the Project Area.

Results

Desktop

A review of ecological works conducted in the area by RPS (2014) identified *Eucalyptus cannonii* (Capertee Stringybark) immediately adjacent to the proposed subsidence line. This species is listed as vulnerable under the *NSW Threatened Species Conservation Act 1995* (TSC Act).

Vegetation mapping for the Airly PAA displayed three ecological communities along the Project Area including:

- Map Unit (MU) 3 – Hillslope Talus Mountain Gum – Brown Stringybark – Grey Gum – Broad-leaved Hickory Moist Forest;
- MU 43 – Pagoda Rock Sparse Shrubland;
- MU 62 – Cleared and Severely Disturbed Lands.

Of these vegetation communities, none are commensurate with any TSC Act or EPBC Act listed Endangered Ecological Communities (EEC).

Field Survey

Fauna

Opportunistic fauna surveys undertaken during the field survey event, detected a pair of Gang-Gang Cockatoos (*Callocephalon fimbriatum*) in vegetation within the Project Area. This species is listed as vulnerable under the TSC Act.

Habitat Features

Four hollow-bearing trees were detected within 10 m of the Project Area as shown in **Figure 2**.

The Project Area was found to contain an area of rocky pagodas which provides habitat for a range of fauna including the threatened Broad-headed Snake (*Hoplocephalus bungaroides*) and Brush-tailed Rock-wallaby (*Petrogale penicillata*).

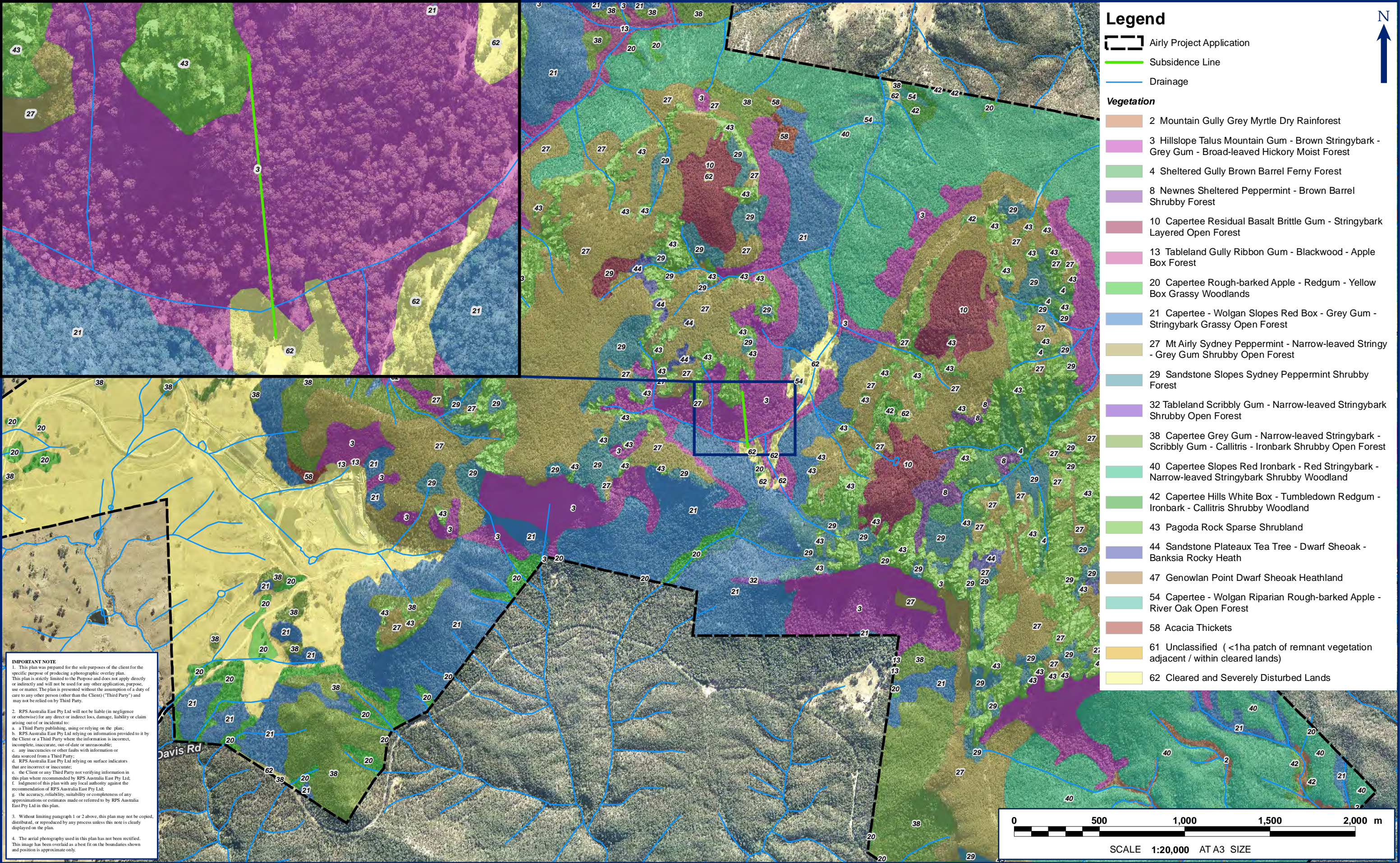
The location of all threatened flora and fauna, and habitat features are displayed in **Figure 2**.

Vegetation

Vegetation communities along the Project Area were shown to be as described and mapped by RPS (2014). No vegetation communities commensurate with EECs were identified as occurring within the Project Area (refer to **Figure 3**).

Seven individuals of the threatened plant *Eucalyptus cannonii* were identified along the subsidence monitoring line and within 10 m of the Project Area (refer to **Figure 2**).





TITLE : **FIGURE 2 : THREATENED FLORA & FAUNA**

LOCATION : **AIRLY, NSW**

DATUM:GDA 1994

DATE : **5/08/2016**

VERSION (PLAN BY): **AA3 (Natalie.Wood)**

PROJECTION: GDA 1994 MGA Zone 56

PURPOSE: **ECOLOGY**

PATH: J:\JOBS\Centennial\All Jobs\132971 Airly Subsidence Line\10 - Drafting\Arcgis Map Documents\Ecol\132971 Figure 3 - Veg 20160805.mxd

CLIENT: **CENTENNIAL COAL**

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Conclusion

Three vegetation communities were confirmed to occupy the Project Area, of which, none are commensurate with any TSC Act or EPBC Act EECs.

Seven individuals of the threatened plant *Eucalyptus cannonii* were identified along the subsidence monitoring line and within 10 m of the Project Area.

Two hollow-bearing trees and an area supporting rocky pagodas were discovered within a 10m buffer of the Project Area. Rock pagodas are susceptible to impacts created by subsidence that could ultimately result in cracking of rock, fissures or rock fall. RPS (2014) has assessed the predicted subsidence modelling for Airly, with no significant impacts considered to occur. Minor vegetation clearing proposed to occur within the Project Area will remove potential foraging habitat for local fauna.

Based on recommendations outlined below, the vegetation clearing required to establish the subsidence monitoring line is unlikely to significantly impact flora and fauna in the locality. The surrounding areas contain extensive contiguous suitable habitat and only minor vegetation clearing activities are proposed to occur.

Recommendations

The following recommendations have been outlined to limit potential impacts of the proposed activities on threatened flora and fauna and surrounding habitat:

- Access to the subsidence line during installation and ongoing monitoring works should be restricted to established tracks where possible;
- No *Eucalyptus cannonii* are to be removed and should be clearly flagged and avoided;
- It is recommended that any felled trees and branches be retained within the immediate vicinity of the created monitoring line where possible to provide potential habitat for ground-dwelling fauna into the future;
- Hollow bearing trees should be avoided where possible. If hollow bearing trees are removed, nest boxes should be installed in surrounding habitat to compensate for the loss of hollows; and
- Disturbance to potential fauna habitat should be avoided, whilst removal of ground and shrub species during clearing works should be minimised wherever possible.

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

Yours sincerely
RPS



Lauren Eather
Ecologist

References

DEC (2006) *Vegetation of the Western Blue Mountains*. Unpublished report funded by the Hawkesbury-Nepean Catchment Management Authority. Department of Environment and Conservation NSW, Hurstville.

RPS (2014) *Airly Mine Extension Project - Flora and Fauna Assessment Report*. RPS Australia.

Appendix 2

Heritage Due Diligence Assessment



Heritage Due Diligence Assessment

Airly Subsidence Line

Visual Inspection Date: 29th July 2016

Prepared by:

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Document Status

Version	Purpose of Document	Orig	Review	Review Date	Approval for Issue	Date Issued
Draft v1	Client Review	BS	CYL	2.8.2016	CYL	2.8.2016
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Executive Summary

RPS has been engaged by Centennial Coal to prepare a Heritage Due Diligence Assessment for a subsidence line at Airly in the Lithgow Local Government Area (LGA).

This assessment has been undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects* (DECCW 2010) and the *NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects* (Minerals Council 2010) which requires reasonable and practicable steps be taken to: identify whether or not Aboriginal objects are, or are likely to be, present in an area; determine whether or not their activities are likely to harm Aboriginal objects (if present); and determine if an Aboriginal Heritage Impact Permit is required (DECCW 2010:2, Minerals Council 2010:5).

A visual inspection of the Project Area was conducted on Friday the 29th of July 2016 and undertaken by RPS Graduate Cultural Heritage Consultant Ben Slack together with RPS Ecologist Joe May. The visual inspection was conducted on foot (pedestrian).

The entire Project Area is located on a spur associated with a large sandstone outcrop which runs in a north-south direction. Approximately 75 metres to the east of the Project Area a steep gully runs in a north-west south-east axis and contains a small, steady stream of water. There are few mature trees within the Project Area; these were inspected for cultural scarring however no such evidence was identified. The mid to upper slope contained large sandstone outcrops which had the potential to be used as shelters. These were inspected for evidence of occupation however none were identified. A heavy layer of leaf litter meant there was little surface exposure and therefore no stone artefacts could be identified.

The northern half of the Project Area extends into the Airly, Torbane and Genowlan oil shale site which is listed on the Lithgow LEP (A144). This site contains extensive buildings associated with oil shale mining from 1893 until closing in 1918. No built structures lie within the Project Area, the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted.

No Aboriginal objects or places have been identified within the Project Area and therefore an Aboriginal Heritage Impact Permit (AHIP) is not required for the proposed activity.

The following recommendations are made in relation to the proposed activity:

Recommendation 1

All relevant Centennial staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, which may be implemented as a heritage induction.

Recommendation 2

This due diligence assessment must be kept by Centennial so that it can be presented, if needed, as a defence from prosecution under Section 86(2) of the *National Parks and Wildlife Act 1974*.

Recommendation 3

If unrecorded Aboriginal object/s are identified in the Project Area during works, then all works in the immediate area must cease and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014).

Recommendation 4

In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014).

Recommendation 5

If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The Heritage Branch, Office of Environment & Heritage (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

Terms, Definitions, and Abbreviations

Abbreviation/ Term	Meaning
Aboriginal Object	“any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains” (DECCW 2010:18).
Aboriginal Place	“a place declared under s.84 of the NPW Act that, in the opinion of the Minister, is or was of special significance to Aboriginal culture” (DECCW 2010:18). Aboriginal places have been gazetted by the minister.
Aboriginal Culturally Modified Tree	“means a tree that, before or concurrent with (or both) the occupation of the area in which the tree is located by persons of non-Aboriginal extraction, has been scarred, carved or modified by an Aboriginal person by: (a) the deliberate removal, by traditional methods, of bark or wood from the tree, or (b) the deliberate modification, by traditional methods, of the wood of the tree” NPW Regulation 80B (3). Culturally Modified trees are sometimes referred to as scarred trees
Activity	A project, development, or work (this term is used in its ordinary meaning and is not restricted to an activity as defined by Part 5 EP&A Act 1979).
Activity Area	Activity Area is the area subject to the proposed activity
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
DECCW	Department of Environment, Climate Change and Water (is now the Office of Environment and Heritage – OEH)
Disturbed Land	“Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable.” (DECCW 2010:18).
Due Diligence	“taking reasonable and practical steps to determine whether a person’s actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm” (DECCW 2010:18)
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
GDA	Geodetic Datum Australia
Harm	“destroy, deface, damage an object, move an object from the land on which it is situated, cause or permit an object to be harmed.” (DECCW 2010:18)
LGA	Local Government Area
NPWS	National Parks and Wildlife Service
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NPW Regulation	<i>National Parks and Wildlife Regulation 2009 (NSW)</i>
OEH	Office of Environment and Heritage (formerly DECCW)
PAD	Potential Archaeological Deposit
Project Area	Project Area is the area subject to the desktop study in this report

1.0 Introduction

RPS has been engaged by Centennial Coal (the proponent) to prepare a Heritage Due Diligence Assessment. The purpose of a due diligence assessment is to demonstrate that reasonable and practicable measures were taken to prevent harm to an Aboriginal object or place and has been undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (2010) ("Due Diligence Code") and the *NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects* (Minerals Council 2010) ("Minerals Due Diligence Code").

This report has outlined the relevant environmental and archaeological context, landforms, landscape features, disturbances, legislative context and the nature of the proposed activity. This information has been considered in formulating the recommendations. This due diligence assessment has been prepared as an input to the review of environmental factors (REF).

1.1 The Project Area

This due diligence assessment has been prepared for the area subject to the proposed activity and herein is referred to as the "Project Area." The Project Area is located at Mount Airly in the Lithgow LGA. The Project Area is approximately 300 metres in length (Figure 1).

1.2 The Proposed Activity

The proposed activity is to clear vegetation for a subsidence monitoring line with a 10 metre wide buffer on either side. Ground disturbance works will include clearing of vegetation and therefore a due diligence assessment is required under the Due Diligence Code/s (DECCW 2010:11-12, Minerals Council 2010:17).

1.3 Authorship and Acknowledgements

This report was prepared by RPS Graduate Cultural Heritage Consultant Ben Slack. The report was reviewed by Cheng Yen Loo (RPS Senior Cultural Heritage Consultant).

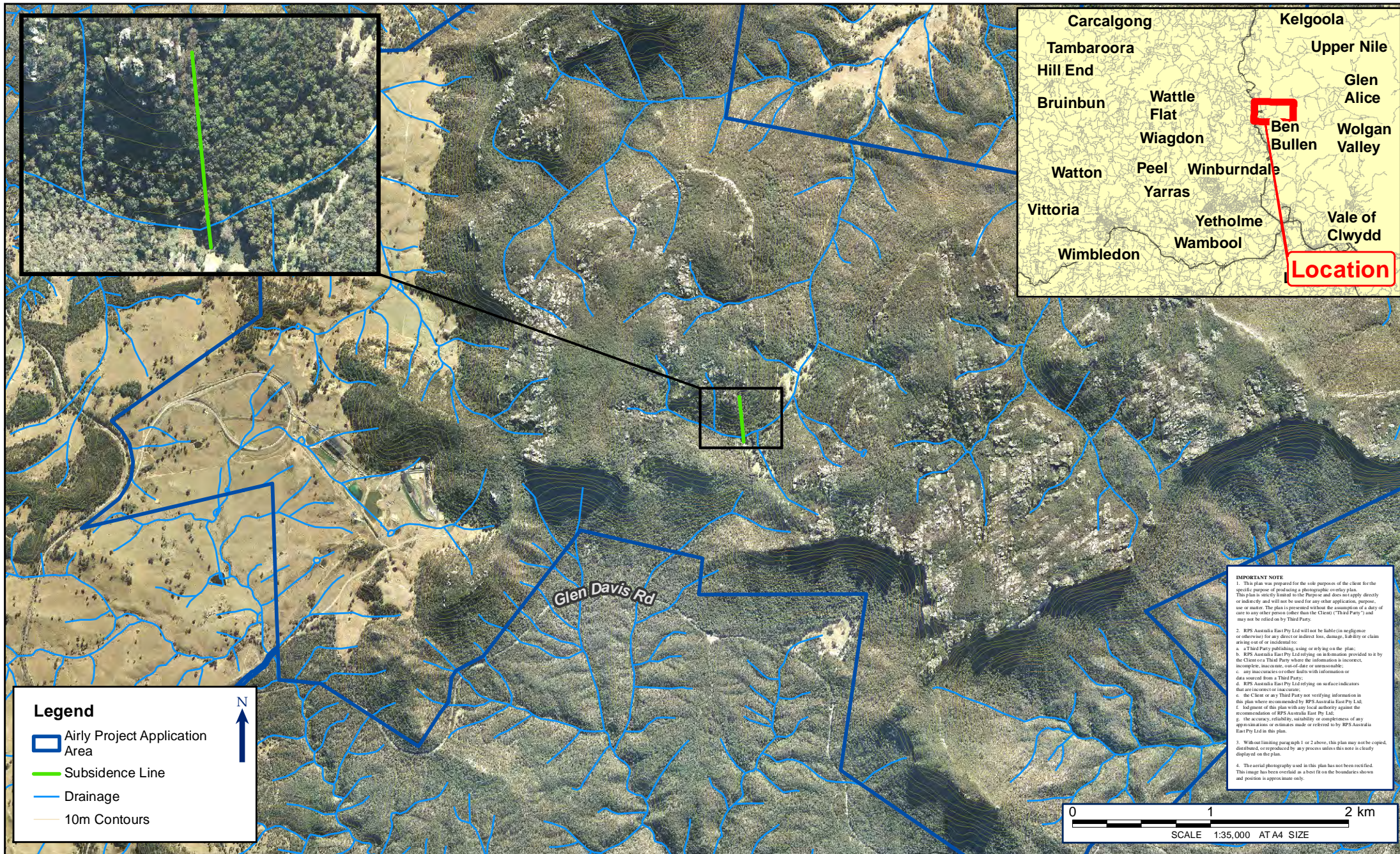


FIGURE 1: PROJECT AREA

LOCATION : AIRLY, NSW

DATUM: GDA 1994

PROJECTION: GDA 1994 MGA Zone 56

DATE : 2/08/2016

PURPOSE: HERITAGE

VERSION (PLAN BY):

A44 (amy.obrien)

CLIENT: .

JOB REF: PR132971

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2.0 Legislative Context

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 recommends that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

Although there are a number of Acts protecting and managing cultural heritage in New South Wales (see Appendix 1); the primary ones which apply to this report include:

- *National Parks & Wildlife Act 1974*
- *National Parks & Wildlife Regulation 2009*

In brief, the *National Parks & Wildlife Act 1974* protects Aboriginal heritage (places, sites and objects) within NSW; the National Parks and Wildlife Regulation 2009 provides a framework for undertaking activities and exercising due diligence.

2.1 *National Parks & Wildlife Act 1974*

The *National Parks & Wildlife Act 1974* (NPW Act) protects Aboriginal heritage (places, sites and objects) within NSW. Protection of Aboriginal heritage is outlined in s86 of the Act, as follows:

- "A person must not harm or desecrate an object that the person knows is an Aboriginal object" s86(1),
- "A person must not harm an Aboriginal object" s86(2)
- "A person must not harm or desecrate an Aboriginal place" s86(4).

Penalties apply for harming an Aboriginal object or place. The penalty for knowingly harming an Aboriginal object (s86[1]) and/or an Aboriginal place (s86[4]) is up to \$550,000 for an individual and/or imprisonment for 2 years; and in the case of a corporation the penalty is up to \$1.1 million. The penalty for a strict liability offence (s86[2]) is up to \$110,000 for an individual and \$220,000 for a corporation.

Harm under the NPW Act is defined as any act that: destroys defaces or damages the object; moves the object from the land on which it has been situated; and/or causes or permits the object to be harmed. However, it is a defence from prosecution if the proponent can demonstrate 1) that harm was authorised under an Aboriginal Heritage Impact Permit (AHIP) (and the permit was properly followed); or 2) that the proponent exercised due diligence in respect to Aboriginal heritage. The '**due diligence**' defence (s87(2)), states that if a person or company has exercised due diligence to ascertain that no Aboriginal object was likely to be harmed as a result of the activities proposed for the Project Area (subject area of the proposed activity), then liability from prosecution under the NPW Act will be removed or mitigated if it later transpires that an Aboriginal object was harmed.

Notification of Aboriginal Objects

Under section 89A of the NPW Act Aboriginal objects (and sites) must be reported to the Director-General (now Chief Executive) of OEH within a reasonable time (unless it has previously been recorded and submitted to AHIMS). Penalties of \$11,000.00 for an individual and \$22,000.00 for a corporation may apply for each object not reported.

2.2 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 2009 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); amongst other regulatory processes.

2.3 Due Diligence and Codes of Practice

The aim of a due diligence assessment is to:

- assist in avoiding unintended harm to Aboriginal objects;
- provide certainty to land managers and developers about appropriate measures for them to take;
- encourages a precautionary approach;
- provides a defence against prosecution if the process is followed; and
- results in more effective conservation outcomes for Aboriginal cultural heritage.

One of the benefits of the due diligence provisions are that they provide a simplified process of investigating the Aboriginal archaeological context of an area to determine if an Aboriginal Heritage Impact Permit (AHIP) is required.

Under the s80A *National Parks & Wildlife Regulation 2009* ("NPW Regulation") a number of due diligence codes are recognised.

This report has been written to meet the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (2010) ("Due Diligence Code") and the NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (Minerals Council 2010) ("Minerals Due Diligence Code").

2.3.1 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010)

This publication sets out a minimum benchmark for acceptable due diligence investigations to be followed. The purpose of the code is set out reasonable and practical steps in order to:

- (1) identify whether or not Aboriginal objects (and places) are, or are likely to be, present in an area
- (2) determine whether or not their activities are likely to harm Aboriginal objects (if present)
- (3) determine whether an AHIP application is required. (DECCW 2010:2)

Investigations under the code include the following:

- A search of the Aboriginal Heritage Information Management System (AHIMS) database to identify if there are previously recorded Aboriginal objects or places in the Project area,
- Identification of landscape features including, land within 200m of water, dune systems, ridgetops, headlands, land immediately above or below cliff faces and/or rockshelters/caves,
- Desktop assessment including a review of previous archaeological and heritage studies and any other relevant material,
- Visual inspection of the project area to identify if there are Aboriginal objects present, and
- Assessment as to whether an AHIP is required.

This report has complied with the requirements of the code listed above. Other requirements under the code are outlined below.

Aboriginal consultation is not required for an investigation under the due diligence code (DECCW 2010:3). However, if the due diligence investigation shows that the activities proposed for the area are likely to harm objects or likely objects within the landscape, then an Aboriginal Heritage Impact Permit will be required with full consultation.

A record of the due diligence procedure followed must be kept to ensure it can be used as a defence from prosecution (DECCW 2010:15).

Following a due diligence assessment (where an AHIP application was not required), an activity must proceed with caution. If any Aboriginal objects are identified during the activity, then works should cease in that area and OEH notified (DECCW 2010:13). The due diligence defence does not authorise continuing harm.

2.3.2 NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (Minerals Council 2010)

The fundamental requirements of this the Minerals Due Diligence Code are the same as the Due Diligence Code (DECCW 2010). Although the requirements are the same the Minerals Due Diligence Code also suggests that Aboriginal consultation be considered (although not a formal requirement) (Minerals Council 2010:7) and that “company personnel should be trained in cultural heritage in case Aboriginal objects are discovered during field activities” (Minerals Council 2010:11). The Minerals Due Diligence Code also provides examples of common activities which are undertaken in relation to mining and how they can be managed in accordance with the due diligence codes and the relevant legislation (Minerals Council 2010:20-22).

2.4 Aboriginal Community Consultation

Aboriginal community consultation is not a formal requirement of the due diligence process (DECCW 2010:3, Minerals Council 2010:7) therefore the proponent is not obliged to undertake Aboriginal community consultation.

Aboriginal community consultation was not undertaken for this due diligence assessment.

3.0 Environmental Context

The purpose of reviewing the relevant environmental information is to assist in identifying whether Aboriginal objects or places are present within the Project Area. The environmental context forms part of the desktop assessment required under the Due Diligence Code/s (DECCW 2010:12-13; Minerals Council 2010:17-18).

3.1 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 study area. The nature of stone exploitation by Aboriginal people depends on the characteristics of the source, for example whether it outcrops on the surface (a primary source), or whether it occurs as gravels (a secondary source) (Doelman et al. 2008).

The dominant geological groups found in the area are the Permian Illawarra Coal Measures and the Triassic Narrabeen Group. These groups comprise red, green and grey shale, siltstone, conglomerate, claystone and quartz-lithic and quartz sandstones (King 1993). Sandstone outcrops sometimes provided suitable locations for habitation in the form of rockshelters and sandstone sheets were also often used for sharpening hatchets; this process results in depressions in the sandstone identified as 'grinding grooves' (Attenbrow 2004). Below the outcropping Permian and Triassic formations the geology gradually gives way to Devonian shale, siltstone, quartzite, tuff and limestone.

The Project Area consists of the Wollangambe and Warragamba soil landscapes. The Wollangambe soil landscape is characterised by single-grained, loamy sand topsoil that reaches an approximate depth of 30 centimetres on narrow crests and ridges, or 40 centimetres on sideslopes. This topsoil overlies 40 to 70 centimetres of either a red clayey sand or bright yellowish clayey sand subsoil. In the Warragamba soil landscape, up to 50 centimetres of single-grained loamy sand topsoil overlies bedrock on crests and ridges. On sideslopes, up to 35 centimetres of dark reddish brown clayey sand overlies brown pedal clay subsoil (King 1993). As Aboriginal artefacts are unlikely to be present in clay subsoils, potential archaeological deposits, if present, are likely to be limited to the upper 30 to 50 centimetres.

3.2 Topography and Hydrology

The Project Area is located on the western slopes of Mount Airly and is flanked by the Genowlan Mountains to the west. The Airly-Genowlan mesa is characterised by rocky gorges and precipitous slopes with large outcroppings of sandstone and basalt capping around elevated areas. Mount Airly reaches heights of 1044 AHD (Australian Height Datum) however the surrounding region commonly ranges from 600 AHD to 1000 AHD. The mesa holds commanding views of the surrounding region with the nearest significant peak, Baal Bone Point, lying approximately 11 kilometres to the south.

Between these two mesa's is a valley in which Gap Creek travels north into Genowlan Creek before flowing into the Capertee River approximately six kilometres to the north-west. The surrounding region consists of numerous ephemeral water sources due to the steep escarpments and gorges.

3.3 Flora and Fauna

The purpose of this section is to provide an indication of the types of flora and fauna resources which were likely to have been available to Aboriginal people in the past. It is based on broad scale vegetation mapping for NSW (Keith 2006) and does not replace more detailed studies undertaken for the Project Area.

The Study Areas are situated within an area of Western Slopes Dry Sclerophyll Forest. It is characterised by ironbark eucalypts and cypress pines approximately 10 to 25 metres tall. Sclerophyll shrubs grow in prominence while grasses are relatively scarce, placing this class in the shrubby subformation of the dry sclerophyll forests. Indicative species of tree include tumbledown red gum, mugga, black cypress pine, white cypress pine, dirty gum, narrow-leaved ironbark and blue-leaved ironbark. Shrub species commonly present include several species of wattle, heath and myrtle, as well as hakea, grevillea and grass trees (Keith 2006). This vegetation community provides habitats for a variety of animals and would have also provided potential food and raw material sources for Aboriginal people. Grass trees, for example, were used by Aboriginal people to manufacture spears and resin, and also as a food source (Nash 2004).

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

3.4 Synthesis of Environmental Context

Background research indicates that the local environment was suitable for Aboriginal occupation; however a lack of a permanent water source close to the Project Area indicated the area was likely only used temporarily for hunting or gathering before moving to more reliable water sources. Temporary sources of water could have been sourced from the tributaries that run near the Project Area during high rainfall and flooding events and the numerous sandstone outcroppings in the area would have provided temporary shelter. The vegetation would have provided an abundance of animals and edible plants for past Aboriginal people.

4.0 Heritage Context

The purpose of reviewing the relevant heritage information is to assist in identifying whether Aboriginal objects or places are present within the Project Area. The heritage context forms part of the desktop assessment required under the Due Diligence Code/s (DECCW 2010:12-13; Minerals Council 2010:17-18).

4.1 Aboriginal Heritage Information Management System (AHIMS)

A search was undertaken of the Aboriginal Heritage Information Management System (AHIMS). The coordinates searched for the Project Area were GDA Zone 56, Eastings 220148 to 227469 and Northings 6329861 to 6338038 and revealed 29 previously recorded Aboriginal sites within these coordinates (0 and **Error! Reference source not found.**).

The search revealed that no Aboriginal objects or places were present in the Project Area. Summary of AHIMS sites within the searched coordinates can be found in Table 1.

Table 1 Registered AHIMS sites within the search coordinates

Sites	Frequency	Percent
Artefact Site (Number Unspecified)	16	55.17%
Isolated Find	6	20.69%
Scarred Tree	2	6.9%
Shelter with Deposit	2	6.9%
Shelter with Art	1	3.45%
Shelter with PAD	1	3.45%
Art with Artefact Unspecified	1	3.45%
Total	29	100%

Source: AHIMS database, accessed 27th July 2016.

Although the area is heavily vegetated there are few scarred trees amongst the registered AHIMS sites. This is likely due to land clearing practices which have occurred over the previous 150 years. There are substantial sandstone overhangs and escarpments which offer the opportunity for shelter, these make up approximately 13.8% of the registered sites. Due to the availability of the sandstone escarpments it is considered likely that more exist in the area.

4.2 Historic Heritage

The northern half of the Project Area extends into the Airly, Torbane and Genowlan oil shale site which is listed on the Lithgow LEP (A144). This site contains extensive buildings associated with oil shale mining from 1893 until closing in 1918 (RPS 2013). No built structures lie within the Project Area, the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted.

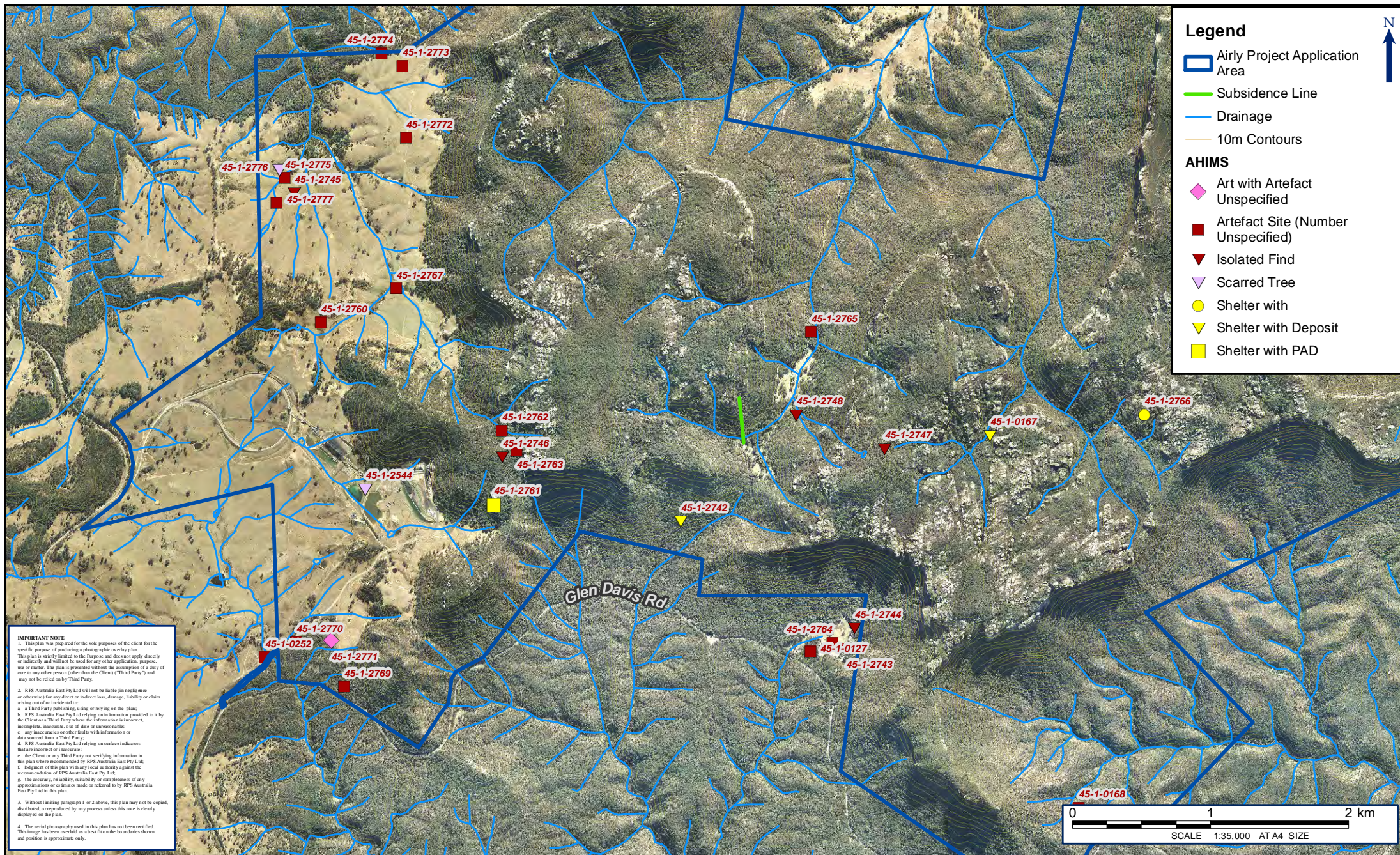


FIGURE 2: AHIMS

LOCATION : AIRLY, NSW

DATUM: GDA 1994

PROJECTION: GDA 1994 MGA Zone 56

DATE : 1/08/2016

PURPOSE: HERITAGE

VERSION (PLAN BY):

A A4 (amy.obrien)

CLIENT :

JOB REF: PR132971

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4.3 Archaeological and Heritage Literature Review

A review of previous archaeological and heritage reports has been undertaken to inform this due diligence assessment.

Brayshaw McDonald Pty Ltd. 1991. Additional Archaeological Survey for Aboriginal Sites, Airly Authorisation (A232) Near Capertee NSW.

In 1991 Brayshaw McDonald Consultant Archaeologists conducted an Aboriginal archaeological survey in the Airly Authorisation Area (A232), 5km east of Capertee. The survey was conducted over two days and covered Mount Airly to the west and the Genowlan Mountains in the east and was assisted by John Bugg of the Windradyne Local Aboriginal Land Council. Two shelters were identified within the Genowlan Mountains, neither containing art but both contained artefacts with PAD's. An artefact scatter and an isolated find were also identified during the survey, both of these sites were identified on the eastern side of the Genowlan Mountains and consisted largely of quartz artefacts (Brayshaw 1991).

It was considered that both shelters were likely related to brief hunting trips up the mountain; however it was noted that this was impossible to determine without further subsurface testing. The presence of ochre deposits within one shelter allows for the possibility of ritual associated with the shelter.

Mills, Robyn. 1998. An Archaeological Survey of the Proposed Realignment of the Access Road to Airly Mine.

In 1998 Robyn Mills conducted an Aboriginal archaeological survey for the proposed road realignment at Airly Mine. The proposed access road was approximately 1.3km road and connected the mine complex site to Glen Davis Road. The survey was conducted in December 1997 and was assisted by Bathurst Local Aboriginal Land Council representative Richard Peters. Two sites were identified during the survey. One artefact scatter was located on a raised bank adjacent to Airly Creek and consisted of seven stone artefacts. It was considered likely that further surface artefacts may have existed in the surrounding area; however due to poor surface visibility none were identified. The second site consisted of a scarred tree located in an open paddock. The tree had died however the scar was in good condition and due to the amount of regrowth it was considered to be an old scar. The identified artefact scatter lay within the proposed development and a recommendation was made for an application for a Consent to Destroy Permit.

RPS. 2013. Aboriginal Archaeological Due Diligence Report for Five Proposed Borehole Locations, Airly Mine, NSW.

In 2013 RPS was engaged by Centennial Coal Airly Pty Ltd to prepare an Aboriginal Archaeological Due Diligence Assessment for five proposed borehole locations at the Airly Coal Mine. The five proposed exploration boreholes required drilling with an approximate impact area of 30m², all five sites were located on the Genowlan Mountains to the east of Airly Mountain.

A visual inspection was conducted over two days in August 2012. All borehole locations were located in a partially disturbed landscape consisting of vehicle tracks. Where possible all ground surfaces were inspected for artefacts, it was noted that suitable raw materials existed within the study area, however no stone tools were identified. Mature trees were inspected for evidence of cultural scarring however none were identified. As there were no sites identified within the proposed boreholes it was assessed that there is no identified risk of harm to Aboriginal objects.

4.4 Synthesis of Heritage Context

A review of the AHIMS data and previous archaeological work in the area suggest that the area was used by past Aboriginal people, the substantial sandstone cliff faces would have offered the possibility of shelters and the surrounding area contains the raw materials for the production of stone tools. The extensive history of mining in the area has created a high level of disturbance including vegetation clearing which is reflected in the few scarred trees identified.

5.0 Visual Inspection and Field Results

A visual inspection of the Project Area was undertaken to identify whether Aboriginal objects are present on the ground surface or are likely to be present below the ground surface. In accordance with the Due Diligence Code/s a qualified archaeologist undertook the visual inspection (DECCW 2010:12-13, Minerals Council 2010:17-18).

5.1 Visual Inspection

The visual inspection of the Project Area was conducted Friday the 29th of July and undertaken by RPS Graduate Cultural Heritage Consultant Ben Slack together with RPS Ecologist Joe May. The visual inspection was conducted on foot (pedestrian).

The Project Area consisted of the valley floor which comprised of ferns and low lying shrubs which extended north along a steep to very steep south facing slope (**Plates 1, 2 & 3**). Much of the vegetation from the mid to upper slope consisted of young trees with few large mature trees. Ground surface visibility (GSV) was approximately 40%; however a thick layer of leaf litter and shrubs meant ground surface exposure (GSE) was very low (<5%) (**Plate 4**). Where soils were exposed they consisted of a dark brown, friable sandy loam.

Approximately 100 metres into the Project Area large sandstone outcropping were observed (**Plate 5**). These continued throughout the remainder of the area until reaching the base of the cliff face (**Plate 6**). The entire Project Area is located on a spur associated with a large sandstone outcrop which runs in a north - south direction. Approximately 75 metres to the east of the Project Area a steep gully runs in a north-west to south-east axis and contained a small, steady stream of water (**Plate 7**). A buffer of ten metres either side of the subsidence line was given.

5.2 Visual Inspection Field Results and Summary

No sites were identified during the survey. Where possible ground surface exposures were inspected for stone artefacts; however due to the low GSE; none were identified. Few mature trees existed within the Project Area and these tended to be located on the lower slope (**Plate 8**). These were inspected for evidence of cultural scarring however none were identified. The mid to upper sloped sandstone outcrops were inspected for rockshelters and art, but no evidence of occupation existed within their boundaries (**Plates 9 & 10**).

No evidence for built structures associated with the oil shale mining was identified during the survey. The built structures are located north of the Project Area at the southern extremity of the curtilage for the locally listed heritage area.

6.0 Impact Assessment

The purpose of a due diligence assessment is to identify whether Aboriginal objects are present, or likely to be present, in the Project Area; to determine whether proposed activities are likely to harm Aboriginal objects (if present) and to determine whether an Aboriginal Heritage Impact Permit (AHIP) is required.

The proposed activity is to clear vegetation for a subsidence monitoring line with a 10 metre wide buffer on either side. Ground disturbance works will include clearing of vegetation and therefore a due diligence assessment is required under the Due Diligence Code/s (DECCW 2010:11-12, Minerals Council 2010:17).

The results of the AHIMS search and the visual inspection indicate that there are no identified Aboriginal objects in the Project Area. As there are no identified Aboriginal objects in the Project Area it is assessed that there is no identified risk of harm to Aboriginal objects and an AHIP is not required for the proposed activity.

No built structures associated with the Airly, Torbane and Genowlan oil shale sites lie within the Project Area and the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted.

7.0 Conclusions and Recommendations

This report has considered the available environmental and archaeological information for the Project Area, the land condition, as well as, the nature of the proposed activities. A visual inspection was conducted Friday the 29th of July and undertaken by RPS Graduate Cultural Heritage Consultant Ben Slack together with RPS Ecologist Joe May. The visual inspection was conducted on foot (pedestrian).

The Project Area is located on a spur associated with a large sandstone outcrop which runs in a north south direction. Approximately 75 metres to the east of the Project Area a steep gully runs in a north-westerly south- easterly axis and contains a small, steady stream of water. Few mature trees were observed within the Project Area; which were inspected for cultural scarring however no such evidence was identified. The mid to upper slope contained large sandstone outcrops which had the potential to be utilised as shelters. These were inspected for evidence of occupation however none were identified. A heavy layer of leaf litter meant there was little surface exposure and therefore no stone artefacts could be identified.

The northern half of the Project Area extends into the Airly, Torbane and Genowlan oil shale site which is listed on the Lithgow LEP (A144). This site contains extensive buildings associated with oil shale mining from 1893 until closing in 1918. No built structures lie within the Project Area, the nearest structure is located approximately 300 metres to the east and therefore unlikely to be directly impacted.

No Aboriginal objects or places have been identified within the Project Area and therefore an Aboriginal Heritage Impact Permit (AHIP) is not required for the proposed activity.

The following recommendations are made in relation to the proposed activity:

Recommendation 1

All relevant Centennial staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, which may be implemented as a heritage induction.

Recommendation 2

This due diligence assessment must be kept by Centennial so that it can be presented, if needed, as a defence from prosecution under Section 86(2) of the *National Parks and Wildlife Act 1974*.

Recommendation 3

If unrecorded Aboriginal object/s are identified in the Project Area during works, then all works in the immediate area must cease and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014).

Recommendation 4

In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area cordoned off. The area is to be managed in accordance with the procedures outlined in Centennials Western Holdings ACHMP (RPS 2014).

Recommendation 5

If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The Heritage Branch, Office of Environment & Heritage (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

8.0 References

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9.0 Plates



Plate 1 Beginning of the Project Area, view north



Plate 2 View from the base of the south facing slope



Plate 3 Ferns and leaf litter



Plate 4 Leaf litter



Plate 5 Sandstone outcrops



Plate 6 Base of sandstone escarpment at the north end of the Project Area



Plate 7 View east towards small stream



Plate 8 Mature tree located on the lower slopes



Plate 9 Small sandstone overhang



Plate 10 Small sandstone overhang

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 & Torres Strait Islander Heritage Protection Act 1984 (ATSIHIP Act)

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).

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 the summary below.

National Parks and Wildlife Act 1974 (NPW Act)

The NPW Act provides statutory protection for all Aboriginal heritage, places and objects (not being a handicraft made for sale), with penalties levied for breaches of the Act. This legislation is overseen by the Office of Environment and Heritage (OEH), and specifically the Chief Executive (formerly the Director-General) of OEH. Part 6 of this Act is the relevant part concerned with Aboriginal objects and places, with Section 86 and Section 90 being the most pertinent. In 2010, this Act was substantially amended, particularly with respect to Aboriginal cultural heritage requirements. Relevant sections include:

Section 86

This section now lists four major offences:

- (1) A person must not harm an object that the person knows is an Aboriginal object;
- (2) A person must not harm an Aboriginal object;
- (3) For the purposes of s86, "circumstances of aggravation" include:
 - (a) The offence being committed during the course of a commercial activity; or
 - (b) That the offence was the second or subsequent offence committed by the person;
- (4) A person must not harm or desecrate an Aboriginal place.

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

Section 87

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

Section 87A & 87B

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

Section 89A

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

Section 90

This section authorises the Director-General (now Chief Executive) 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, OEH have issued three new policy documents clarifying OEH's requirements with regards to Aboriginal archaeological investigations: *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* and *Code of Practice for Archaeological Investigations in NSW*. The Consultation Requirements formalise the consultation with Aboriginal community groups into four main stages, and includes details regarding the parties required to be consulted, advertisements inviting Aboriginal community groups to participate in the consultation process, requirements regarding the provision of methodologies, draft and final reports to the Aboriginal stakeholders and timetables for the four stages. The Due Diligence Code of Practice sets out the minimum requirements for investigation, with particular regard as to whether an AHIP is required. The Code of Practice for Archaeological Investigation sets out the minimum requirements for archaeological investigation of Aboriginal sites.

Aboriginal Heritage Impact Permits (AHIP)

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

Aboriginal Cultural Heritage Consultation Requirements for Proponents

In 2010, the Aboriginal Cultural Heritage Consultation Requirements for Proponents (ACHCRs) were issued by OEH (12 April 2010). These consultation requirements replace the previously issued Interim Community Consultation Requirements (ICCR) for Applicants (Dec 2004). These guidelines apply to all AHIP applications prepared after 12th April 2010; for projects commenced prior to 12th April 2010, transitional

arrangements have been stipulated in a supporting document, Questions and Answers 2: Transitional Arrangements.

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

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

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

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

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

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*, 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

AHIMS

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 132971-1 BS

Client Service ID : 236067

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2544	Carinya (C-ST-1);Hillcroft;	AGD	56	220840	6332250	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Mrs.Robynne Mills					Permits		
45-1-2742	RPS AY 023	GDA	56	223226	6332207	Open site	Valid	Artefact : 1, Habitation Structure : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2743	RPS AY 024	GDA	56	224424	6331288	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2744	RPS AY 025	GDA	56	224485	6331436	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2745	RPS AY 019	GDA	56	220430	6334585	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2746	RPS AY 020	GDA	56	221936	6332676	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2747	RPS AY 021	GDA	56	224701	6332733	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2748	RPS AY 022	GDA	56	224061	6332976	Open site	Valid	Artefact : 1		
	Contact	Recorders	RPS - Echuca					Permits		
45-1-2760	RPS-AY-001	GDA	56	220621	6333652	Open site	Valid	Artefact : -		
	Contact	Recorders	RPS Australia East Pty Ltd -Hamilton,Mr.David White					Permits		
45-1-2761	RPS-AY-002	GDA	56	221871	6332330	Open site	Valid	Habitation Structure : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	RPS Australia East Pty Ltd -Hamilton,Ms.Cheng-Yen Loo					Permits		
45-1-2762	RPS-AY-003	GDA	56	221930	6332867	Open site	Valid	Artefact : -		
	Contact	Recorders	RPS Australia East Pty Ltd -Hamilton,Mr.David White					Permits		
45-1-2763	RPS-AY-004	GDA	56	222036	6332723	Open site	Valid	Artefact : -		
	Contact	Recorders	RPS Australia East Pty Ltd -Hamilton,Mr.David White					Permits		
45-1-2764	RPS-AY-005	GDA	56	224324	6331334	Open site	Valid	Artefact : -		
	Contact	Recorders	Ms.Tessa Boer-Mah,RPS Australia East Pty Ltd -Hamilton					Permits		
45-1-2765	RPS-AY-006	GDA	56	224170	6333583	Open site	Valid	Artefact : -		
	Contact	Recorders	RPS Australia East Pty Ltd -Hamilton,Mr.David White					Permits		

Report generated by AHIMS Web Service on 27/07/2016 for Ben Slack for the following area at Datum :GDA, Zone : 56, Eastings : 220148 - 227469, Northings : 6329861 - 6338038 with a Buffer of 0 meters. Additional Info : Due Diligence. Number of Aboriginal sites and Aboriginal objects found is 29

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 132971-1 BS

Client Service ID : 236067

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2766	RPS-AY-007	GDA	56	226583	6332980	Open site	Valid	Art (Pigment or Engraved) : -, Habitation Structure : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.Tessa Boer-Mah							
45-1-2767	RPS-AY-008	GDA	56	221169	6333899	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2769	RPS-AY-010	GDA	56	220789	6331017	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2770	RPS-AY-011	GDA	56	220443	6331341	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2771	RPS-AY-12	GDA	56	220695	6331352	Open site	Valid	Art (Pigment or Engraved) : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2772	RPS-AY-013	GDA	56	221240	6334987	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2773	RPS-AY-014	GDA	56	221211	6335509	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2774	RPS-AY-015	GDA	56	221061	6335600	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2775	RPS-AY-016	GDA	56	220360	6334698	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2776	RPS-AY-017	GDA	56	220322	6334755	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-2777	RPS-AY-018	GDA	56	220300	6334516	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Philippa Sokol							
45-1-0167	Genowlan Creek 1	AGD	56	225360	6332640	Closed site	Valid	Artefact : -	Shelter with Deposit	2193
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Mary Dallas Consulting Archaeologists,John Bugg							
45-1-0168	Dog Trap Creek;	AGD	56	226000	6329950	Open site	Valid	Artefact : -	Open Camp Site	2193
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Mary Dallas Consulting Archaeologists,John Bugg							
45-1-0127	Airly Mountain	AGD	56	224060	6331080	Open site	Valid	Artefact : -	Open Camp Site	1947
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Mary Dallas Consulting Archaeologists							
45-1-0252	AC-OC-1;"Airly";	AGD	56	220110	6331040	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Robynne Mills							

Report generated by AHIMS Web Service on 27/07/2016 for Ben Slack for the following area at Datum :GDA, Zone : 56, Eastings : 220148 - 227469, Northings : 6329861 - 6338038 with a Buffer of 0 meters. Additional Info : Due Diligence. Number of Aboriginal sites and Aboriginal objects found is 29

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<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
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Report generated by AHIMS Web Service on 27/07/2016 for Ben Slack for the following area at Datum :GDA, Zone : 56, Eastings : 220148 - 227469, Northings : 6329861 - 6338038 with a Buffer of 0 meters. Additional Info : Due Dlligence. Number of Aboriginal sites and Aboriginal objects found is 29

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