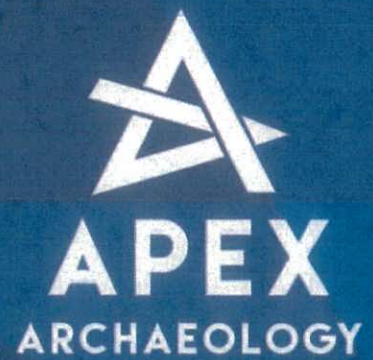


PROPOSED LAWSON CREEK ROAD BRIDGE, MUDGEES NSW

ABORIGINAL DUE DILIGENCE ASSESSMENT

Report to Mid-Western Regional Council

May 2021





EXECUTIVE SUMMARY

Apex Archaeology were engaged to assist Mid-Western Regional Council (MWRC) in the Aboriginal due diligence assessment of the proposed Lawsons Creek Road Bridge across Lawsons Creek, Mudgee, NSW.

This report has been produced in accordance with the DECCW 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (the Due Diligence Code of Practice), in order to assess the Aboriginal archaeological values of the study area.

The study area is located just north of Mudgee at the confluence of the Cudgegong River and Lawsons Creek. It is located within the MWRC Local Government Area (LGA).

A site visit was conducted on 14 May 2021. One previously recorded archaeological site is located within the study area (AHIMS Site 36-6-1010). No newly identified archaeological material was identified during the survey. Ground surface visibility (GSV) was low throughout the study area. GSV was rated at 10% overall.

Ground disturbance was low to moderate throughout the study area. Some evidence of historic clearance was noticeable as the fields either side Lawsons Creek were used for pasture/cattle grazing and possibly cropping at some stage over the last 200 years.

This area was previously considered to have potential for Aboriginal cultural material to be present and registered as AHIMS site 36-6-1010. However, upon further investigation under the Code of Practice in the form of limited test excavation (OzArk 2019) the nature and extent of the potential deposits were determined to be non-existent and the area deemed disturbed by past land use practices.

The following recommendations have been made:

- No further Aboriginal archaeological assessment is required prior to the commencement of upgrade works as described in this report.
- AHIMS site 36-6-1010 should be updated by process of an Aboriginal Site Impact Recording Form (ASIRF) in line with the findings of Ozark (2019) and removed from the AHIMS register.
- The results of this assessment fulfil the requirement for Due Diligence in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Code of Practice). Works may proceed with caution.
- The proposed works must be contained to the area assessed during this due diligence assessment, as shown on Figure 1. If the proposed location is amended, further archaeological assessment may be necessary to determine if the proposed works will impact any Aboriginal objects or archaeological deposits.



- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.



Apex Archaeology would like to acknowledge the Aboriginal people who are the traditional custodians of the land in which this project is located. Apex Archaeology would also like to pay respect to Elders both past and present.

DOCUMENT CONTROL

The following register documents the development and issue of the document entitled 'Lawsons Creek Road Bridge, Mudgee NSW – Aboriginal Due Diligence Assessment', prepared by Apex Archaeology in accordance with its quality management system.

Revision	Prepared by	Reviewed by	Comment	Issue Date
1 – Draft	Leigh Bate	Jenni Bate	Issue for client review	21 May 2021
2 - Final	Leigh Bate	Cassie Liney	Final issued to client	24 May 2021



GLOSSARY OF TERMS

Aboriginal Object	An object relating to the Aboriginal habitation of NSW (as defined in the NPW Act), which may comprise a deposit, object or material evidence, including Aboriginal human remains.
AHIMS	Aboriginal Heritage Information Management System maintained by Heritage NSW, detailing known and registered Aboriginal archaeological sites within NSW
AHIP	Aboriginal Heritage Impact Permit
BP	Before Present, defined as before 1 January 1950.
Code of Practice	The DECCW September 2010 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i>
Consultation	Aboriginal community consultation in accordance with the DECCW April 2010 <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> . Consultation is not a required step in a due diligence assessment; however, it is strongly encouraged to consult with the relevant Local Aboriginal Land Council and to determine if there are any Aboriginal owners, registered native title claimants or holders, or any registered Indigenous Land Use Agreements in place for the subject land
DA	Development Application
DECCW	The Department of Environment, Climate Change and Water – now Heritage NSW
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
Due Diligence	Taking reasonable and practical steps to determine the potential for an activity to harm Aboriginal objects under the <i>National Parks and Wildlife Act 1974</i> and whether an application for an AHIP is required prior to commencement of any site works, and determining the steps to be taken to avoid harm
Due Diligence Code of Practice	The DECCW Sept 2010 <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i>
DPIE	Department of Planning, Industry and Environment (formerly OEH)
GIS	Geographical Information Systems
GSV	Ground Surface Visibility
Harm	To destroy, deface or damage an Aboriginal object; to move an object from land on which it is situated, or to cause or permit an object to be harmed
Heritage NSW	Heritage NSW in the Department of Premier and Cabinet, incorporating the former DPIE/OEH and Heritage Branch
LALC	Local Aboriginal Land Council
LGA	Local Government Agency
MWRC	Mid-Western Regional Council
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
OEH	The Office of Environment and Heritage of the NSW Department of Premier and Cabinet – now Heritage NSW
RAPs	Registered Aboriginal Parties



CONTENTS

1.0	Introduction.....	1
1.1	Study Area	1
1.2	Investigators and Contributors	1
1.3	Statutory Context	1
1.3.1	Commonwealth Native Title Act 1993.....	1
1.3.2	NSW National Parks and Wildlife Act 1974	3
1.4	NSW Due Diligence Code of Practice	4
2.0	The Due Diligence Code of Practice Process.....	6
2.1	Step 1: Will the activity disturb the ground surface?	6
2.2	Step 2a: AHIMS and Available Literature Search.....	6
2.2.1	AHIMS Results.....	6
2.2.2	Literature review.....	8
2.2.1	Synthesis.....	20
2.3	Step 2b: Landscape Features	21
2.3.1	Existing Environment.....	21
2.3.2	Ethnohistory	22
2.3.3	Raw Materials.....	23
2.3.4	Procurement.....	25
2.3.5	Manufacture.....	25
2.3.6	Predictive Model	26
2.4	Step 3: Avoid harm	28
2.5	Step 4: Visual Inspection	28
2.5.1	Survey Coverage.....	28
2.5.2	Results	28
2.5.3	Discussion	33
3.0	Conclusions and Recommendations	34
3.1	Conclusions	34
3.2	Recommendations.....	34
4.0	References	35
	Appendix A: AHIMS Basic Search Results	39



FIGURES

Figure 1: General location of the study area in its local context.....	2
Figure 2: Warrabinga-Wiradjuri #7, Tribunal No NC2018/002 Native Title Claim boundary....	3
Figure 3: AHIMS sites in relation to study area.....	7
Figure 4: The Strahler system (Source: Department of Planning and Environment 2016).....	22

PLATES

Plate 1: General view looking south east from Putta Bucca Road to the start of the proposed road.....	29
Plate 2: Looking south east along proposed new road alignment.....	29
Plate 3: Looking south east along proposed the new road alignment.....	30
Plate 4: Looking north west along proposed the new road alignment.	30
Plate 5: Looking north west along proposed the new road alignment.	31
Plate 6: Looking east along the proposed the new road alignment towards the new Lawsons Creek Bridge location.	31
Plate 7: Looking east along the proposed the new road alignment towards the new Lawsons Creek Bridge location.	32
Plate 8: Looking north west from the southern side of Lawsons Creek along the proposed new road alignment	32
Plate 9: Looking north west towards the new Lawsons Creek Bridge location along the proposed new road alignment.....	33



1.0 INTRODUCTION

Apex Archaeology were engaged to assist Mid-Western Regional Council (MWRC) in the Aboriginal due diligence assessment of the proposed Lawsons Creek Road Bridge across Lawsons Creek, Mudgee, NSW.

This report has been produced in accordance with the DECCW 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (the Due Diligence Code of Practice), in order to assess the Aboriginal archaeological values of the study area.

1.1 STUDY AREA

The study area is located just north of Mudgee at the confluence of the Cudgegong River and Lawsons Creek. It is located within the MWRC Local Government Area (LGA).

1.2 INVESTIGATORS AND CONTRIBUTORS

This report has been prepared by Leigh Bate, Director and Archaeologist with Apex Archaeology, and reviewed by Jenni Bate, Director and Archaeologist with Apex Archaeology. Both have over 14 years of consulting experience within NSW.

Name	Role	Qualifications
Leigh Bate	Project Manager, Primary Report Author, GIS, Field inspection	B.Archaeology; Grad. Dip. Arch; Dip. GIS
Jenni Bate	Review	B.Archaeology; Grad. Dip. CHM

1.3 STATUTORY CONTEXT

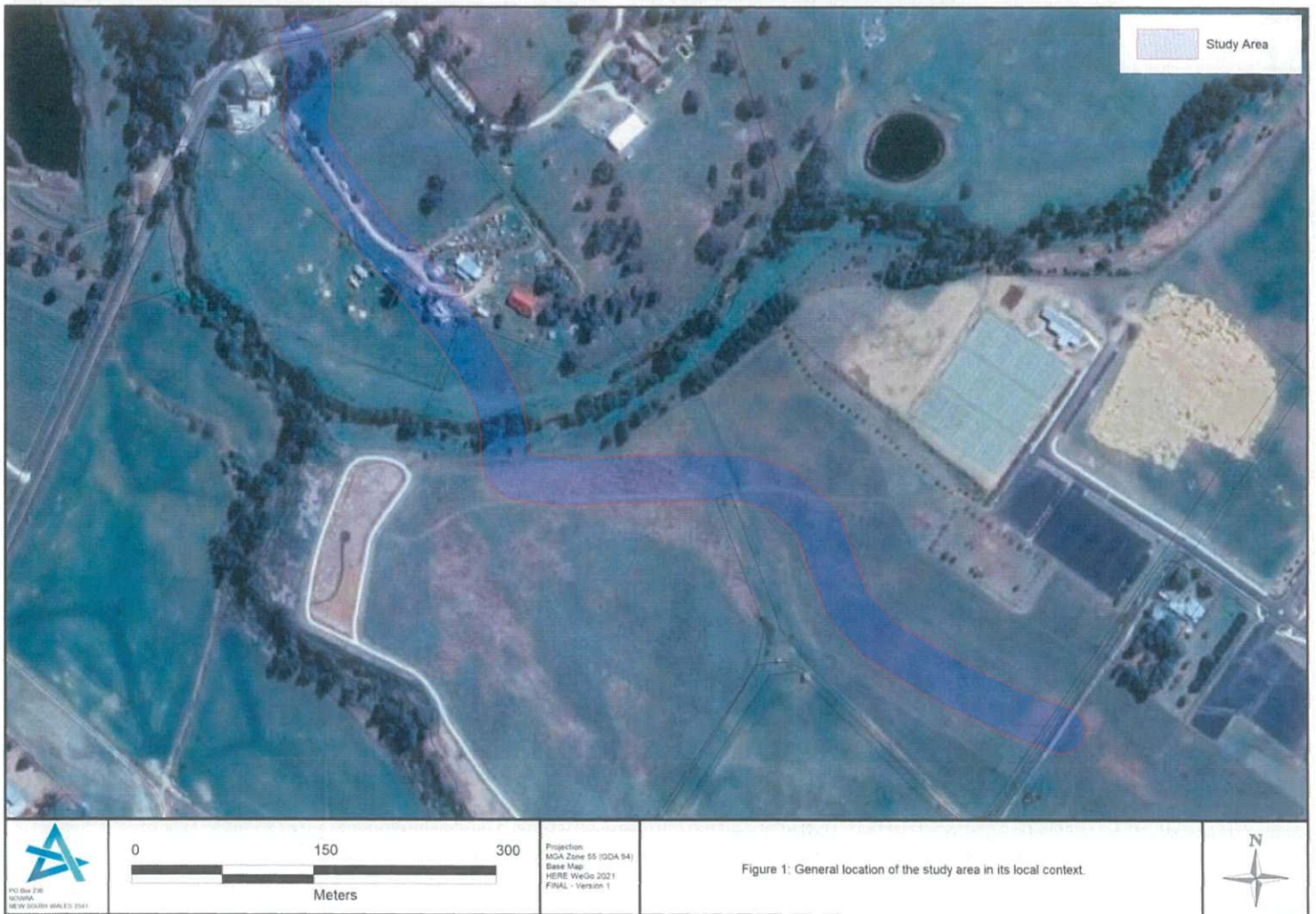
Heritage in Australia, including both Aboriginal and non-Aboriginal heritage, is protected and managed under several different Acts. The following section presents a summary of relevant Acts which provide protection to cultural heritage within NSW.

1.3.1 COMMONWEALTH NATIVE TITLE ACT 1993

The *Native Title Act 1993*, as amended, provides protection and recognition for native title. Native title recognises the traditional rights of Aboriginal and Torres Strait Islanders to land and waters.

The National Native Title Tribunal (NNTT) was established to mediate native title claims made under this Act. Three registers are maintained by the NNTT, as follows:

- National Native Title Register
- Register of Native Title Claims
- Register of Indigenous Land Use Agreements.
- A search of the registers identified a current claim by the Warrabinga-Wiradjuri. The claim is currently active and has been accepted for registration; however, at this point in time the claim has not been determined.



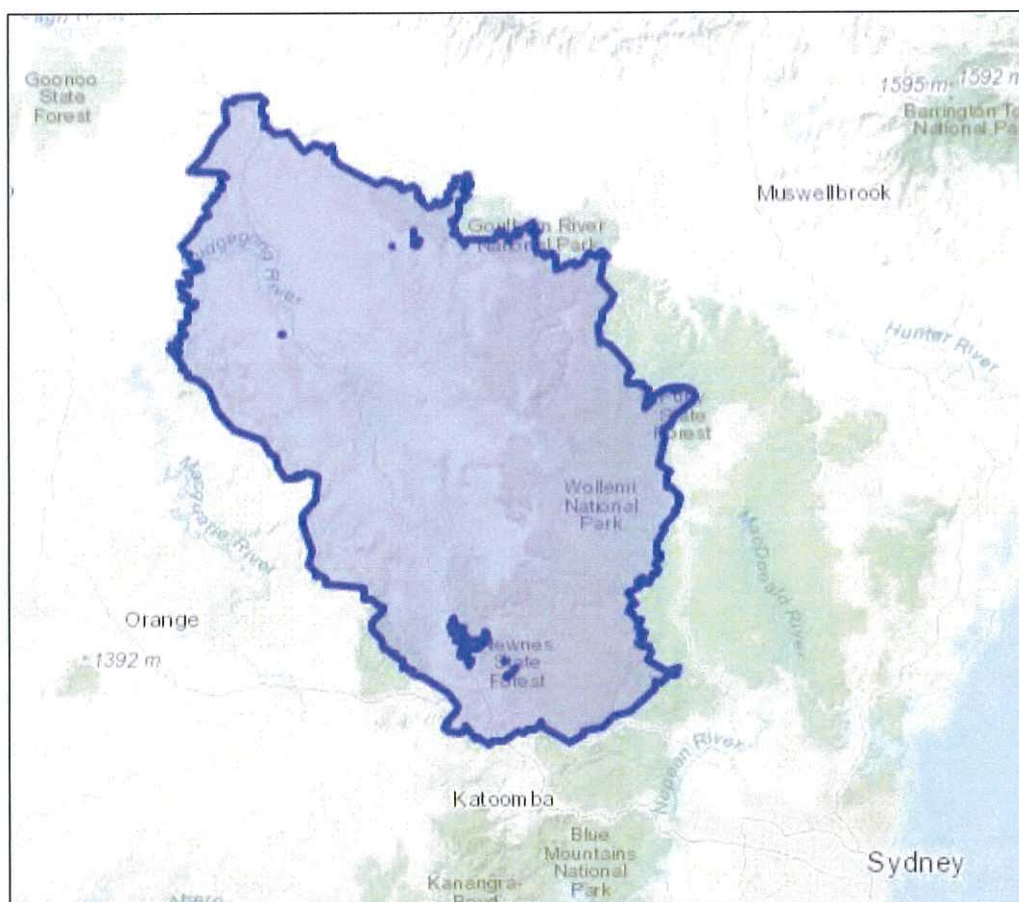


Figure 2: Warrabinga-Wiradjuri #7, Tribunal No NC2018/002 Native Title Claim boundary

For the purposes of this due diligence assessment consultation with the Aboriginal community is not required.

1.3.2 NSW NATIONAL PARKS AND WILDLIFE ACT 1974

Protection for Aboriginal heritage in NSW is provided primarily under the *National Parks and Wildlife Act 1974* (NPW Act). Although cultural heritage is protected by other Acts, the NPW Act is the relevant Act for undertaking due diligence assessments. Protection for Aboriginal sites, places and objects is overseen by Heritage NSW, of the Department of Premier and Cabinet.

Changes to the NPW Act with the adoption of the *NPW Amendment (Aboriginal Objects and Places) Regulation 2010* in October 2010 led to the introduction of new offences regarding causing harm to Aboriginal objects or declared Aboriginal places. These new offences include destruction, defacement or movement of an Aboriginal object or place. Other changes to the NPW Act include:

- Increased penalties for offences relating to Aboriginal heritage for individuals and companies who do not comply with the legislation;



- Introduction of the strict liability offences, meaning companies or individuals cannot claim 'no knowledge' if harm is caused to Aboriginal objects or places; and
- Changes to the permitting process for AHIPs – preliminary archaeological excavations can be undertaken without the need for an AHIP, providing the excavations follow the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

A strict liability offence was introduced, meaning a person who destroys, defaces or moves an Aboriginal object without an Aboriginal Heritage Impact Permit (AHIP) is guilty of an offence, whether they knew it was an Aboriginal object or not. Exercising due diligence (as described in Section 1.4) provides a defence against the strict liability offence.

1.4 NSW DUE DILIGENCE CODE OF PRACTICE

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Code of Practice) was introduced in September 2010. It outlines a method to undertake 'reasonable and practical' steps to determine whether a proposed activity has the potential to harm Aboriginal objects within the subject area, and thereby determine whether an application for an Aboriginal Heritage Impact Permit (AHIP) is required. When due diligence has been correctly exercised, it provides a defence against prosecution under the NPW Act under the strict liability clause if Aboriginal objects are unknowingly harmed without an AHIP.

The Code of Practice provides the 'reasonable and practicable' steps to be followed when determining the potential impact of a proposed activity on Aboriginal objects. Due diligence has been defined by OEH as "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).

These steps include:

- Identification of whether Aboriginal objects are, or are likely to be, present within the subject area, through completing a search of the Aboriginal Heritage Information Management System (AHIMS);
- Determine whether the proposed activity is likely to cause harm to any Aboriginal objects; and
- Determine the requirement for an AHIP.

Should the conclusion of a due diligence assessment be that an AHIP is required, further assessment must be undertaken, with reference to the following guidelines:

- DECCW, April 2010, *Aboriginal cultural heritage consultation requirements for proponents 2010. Part 6 National Parks and Wildlife Act 1974*;
- DECCW, Sept 2010, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*;



- OEH, April 2011, *Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW*; and
- OEH, May 2011, *Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants*.



2.0 THE DUE DILIGENCE CODE OF PRACTICE PROCESS

The Due Diligence Code of Practice provides a specific framework to guide the assessment of Aboriginal cultural heritage. The following section presents the results of this process.

2.1 STEP 1: WILL THE ACTIVITY DISTURB THE GROUND SURFACE?

The proposed works will disturb the ground surface. It is proposed to construct a new road and bridge across Lawsons Creek. Approximately 850m of road and the Bridge will be constructed between Putta Bucca Road upgrade and widen an approximate 850m section of Queenspinch Road to the north of Lawsons Creek and Running south across the creek to Pitts Lane.

Earthworks would include excavation, clearing, grubbing, stripping and moving topsoil along the side of the road in windrows within the road easement, excavation of soil, and backfilling, as well as laying of new road base material within the upgraded section. All proposed works would have an impact to some extent on the ground surface.

2.2 STEP 2A: AHIMS AND AVAILABLE LITERATURE SEARCH

Heritage NSW is required to maintain a register of Aboriginal sites recorded during archaeological assessments and other activities within NSW. This is known as the Aboriginal Heritage Information Management System (AHIMS). This register provides information about site types, their geographical location, and their current status. It is the requirement for the recorder of a newly identified site to register this site with Heritage NSW to be placed onto the AHIMS register. It is a requirement of the Code of Practice to undertake a search of this register as part of undertaking a due diligence assessment.

Heritage NSW also maintains a register of archaeological reports relating to archaeological investigations throughout NSW. These reports are a valuable source of information regarding investigations previously completed and their findings, and can inform the assessment process regarding the potential for Aboriginal cultural material and archaeological potential within a study area.


2.2.1 AHIMS RESULTS

A basic search of the study area using the Lot and DP with a 200m buffer was undertaken. One Aboriginal site is located within the study area, and one is in close proximity of the study area (Figure 3). A copy of the basic search is attached in Appendix A.

Site ID	Site Name	Context	Recorders
36-6-1010	LC/Cr PAD	Open Site	Apex Archaeology
36-6-0726	MSTP-ST1 (Mudgee)	Open site	Mr. David Maynard, Doctor. Jodie Benton

These sites are listed as open site type contexts comprising one scarred tree and a Potential Archaeological Deposit (PAD).



 <p>PO Box 236 ROCKWELL NEW SOUTH WALES 2541</p>	<p>0 150 300</p>  <p>Meters</p>	<p>Projection: MGA Zone 55 (GDA 94) Base Map: HERE WeGo 2021 FINAL - Version 1</p>	<p>Figure 3: AHIMS sites in relation to study area</p>	
--	--	--	--	---



2.2.2 LITERATURE REVIEW

A review of previous archaeological work within the wider region of the study area was undertaken as there were no AHIMS results for the immediate study area. A number of reports were identified from the AHIMS database and previous assessment undertaken by Apex Archaeology in the region and are detailed below.

MOORE 1970

The Australian Museum completed detailed surveys and excavations of specific sites within the Hunter River Valley between 1965 and 1967, from the source of the Hunter River to Singleton, and the headwaters of the Goulburn River at the watershed of the Great Dividing Range to the junction of the Goulburn with the Hunter near Denman. A number of rock shelters and open sites were excavated within the Hunter River region, with a wide range of results. One rock shelter (BOB/1) near Bobadeen, was excavated in 1967, with a large assemblage of 16,609 artefacts recovered and a carbon-14 date obtained from Spit 7 at approximately 25-30 inches (approximately 63-76cm) depth of 7750±120 BP. Subsequent additional dating (Moore 1981) estimated occupation of the shelter to commence around 6,000 years BP.

HAGLUND 1985

Haglund undertook a historic study of the area administered at the time by the Mudgee Shire Council. The report outlines and evaluates the sources of information available to describe the environment and Aboriginal life at the time of first contact with European settlers. Haglund also assessed the area in regards to potential locations for Aboriginal sites and makes recommendations relating to the management of these potential sites. A list of all the sites on the AHIMS database within the Mudgee Shire Council area is also attached to the report. AHIMS site 35-5-0013 is listed in the report as a stone arrangement site with a carved tree and open artefact scatter. No other information is recorded about this site in Haglund's report.

PURCELL 2002

As part of the Western Regional Assessments of NSW, Purcell undertook an Aboriginal cultural heritage assessment of the Brigalow Belt South bioregion, an area of 52,409km². The assessment focused on aspects of cultural heritage such as Aboriginal sites, historical, social and spiritual associations with these sites, and Aboriginal land use of the region. The project collected 110 Aboriginal oral histories, identified 1,110 Aboriginal sites and recorded information relating to 60 plant species of Aboriginal cultural significance.

OZARK ENVIRONMENTAL AND HERITAGE MANAGEMENT PTY LTD 2005

In 2005 OzArk undertook an Indigenous and Non-Indigenous Heritage Assessment of the Wollar to Wellington 330kV electricity transmission line. The survey was conducted over 14 days, during which various tower locations and access track routes were inspected. A total of nineteen artefact scatters, seven isolated finds and two PADs were identified during the course of the survey. Recommendations from



this project include avoidance of impacts, test excavation of a number of sites, along with monitoring and surface collection (OzArk 2005).

NAVIN OFFICER 2005

A large scale survey of 2,510 hectares over 17 days was undertaken in 2004 and 2005 for the Wilpinjong Coal Mine Environmental Assessment (EA). A total of 238 sites were recorded across the entire proposed Wilpinjong mining lease (ML1573), although these included European scarred trees and some of uncertain origin and therefore a total of 224 confirmed Aboriginal sites and PADs were recorded. Sites WCP126, WCP214 and WCP216 were recorded during this survey.

The majority of sites were recorded within valley floor contexts, with sites also occurring on basal valley slopes, mid valley slopes and upper valley contexts, and included sites with high densities of surface artefacts, rock shelters with art and/or deposit, and modified trees. Most of the artefact sites were identified on shallow soils with distinct clay subsoils. Navin Officer considered these sites unlikely to contain undisturbed subsurface archaeological deposits, although some sites were located in aggrading contexts which were considered to have some potential for archaeological deposits.

A total of six sites were considered to be of high archaeological significance, 59 were of moderate to high archaeological significance and a further 48 were of moderate significance (Navin Officer 2005: F-96; F-108). Some identified sites were located outside of the proposed impact area and therefore were not considered subject to impact from the proposed mining activities, although other sites were identified as within the impact area and therefore subject to disturbance. A range of management and mitigation measures were identified for the sites, including avoidance where possible and development of an Aboriginal Cultural Heritage Management Plan (ACHMP) to guide management of the cultural heritage resource within Wilpinjong Coal Mine.

ARCHAEOLOGICAL RISK ASSESSMENT SERVICES 2006

Archaeological Risk Assessment Services completed an assessment of Aboriginal heritage values for Stage 1 of the Moolarben Coal Project (MCP). The MCP study area comprised approximately 3,480 hectares and it was considered that approximately 80% of this area had limited ground surface visibility. Approximately 420 hectares were surveyed. A total of 222 Aboriginal cultural sites were identified during the assessment, with the majority of these sites comprising open artefact scatters, ranging in densities from isolated finds to several hundred artefacts, with most comprising less than five artefacts. Other sites identified included rock shelters, a grinding groove site and a culturally modified tree, and it was noted that higher densities of sites were concentrated around northern ridge lines and Moolarben Creek and Bora Creek alluvial flats.



A range of mitigation strategies were proposed for the sites to be impacted by Stage 1 of the MCP, including surface collection, test excavation and salvage, subsidence monitoring and detailed recording for a number of sites, and avoidance or unmitigated impact for other sites.

NAVIN OFFICER 2006A

Under the requirements of the ACHMP developed for Wilpinjong Coal Mine, Navin Officer undertook a salvage program within a range of areas in advance of the construction of the Coal Mine infrastructure – for example, the site office and admin areas. An interim summary report only was available regarding these works. Surface artefacts were collected from 40 sites and a further 23 new sites were identified. Grader scrapes and mechanically excavated test pits were also completed within the Rail Borrow Area and the Select Borrow Area, as well as WCP11. A total of 307 artefacts were recovered from these salvage activities, suggesting only low density sites were included within this program. Due to the nature of the available report minimal detail was available regarding the works completed.

NAVIN OFFICER 2006B

The ACHMP for Wilpinjong Coal Mine required baseline recording of three rock shelter sites with art, comprising WCP72, WCP152 and WCP153, and Navin Officer completed this recording in 2006. The baseline recording was required to guide the monitoring program for these three sites during the operational life of the coal mine. Each shelter was comprehensively planned and photographed, and the condition of both the physical shelter as well as the art was described. An archival recording of the art within each shelter was not part of the project.

A total of 164 graphics were identified within WCP72, with the majority comprising hand stencils, although two trident motifs and a simple line motif were also recorded (Navin Officer 2006b:22). It was considered likely that further graphics existed but were indecipherable at the time of recording. WCP72 is located at the base of the eastern side of an isolated sandstone knoll, in a mid valley slope context, with open country surrounding and access to the valley floor via low gradient slopes. The shelter is 37m in length, up to 13m in depth and up to 20m high.

At WCP152, located on the western side of a north-south orientated spurline on a large detached sandstone blockfall, a total of 28 graphics were recorded, with all comprising motifs. No stencils were identified and a range of colours were used. WCP152 is 18.5m in length, up to 5.5m in depth and up to 5.5m high.

WCP153 is located on the western side of a north-south orientated spurline, on the downslope of a small sandstone tor on the midslope of the debris slope between an escarpment and the valley floor and is 4.5m in length, up to 2.7m in depth and up to 3m high. Four red hand stencils were identified within the shelter, with one considered to be a child's hand.



KAYANDEL ARCHAEOLOGICAL SERVICES 2006

This supplementary survey of escarpment areas within the Wilpinjong Coal mining lease was undertaken in accordance with the ACHMP developed for Wilpinjong Coal Mine. The aim was to identify rock shelters which may be affected by indirect mining impacts, within 500m of the open cut pits. Escarpment areas to the east, west and south of the project disturbance area were surveyed, although the total area surveyed was not given. A total of 88 sites were identified and included rock shelters, scarred trees, water holes, isolated finds and artefact scatters. Sites were recorded from the valley floor to the upper valley, suggesting a wide variety of landform elements were utilised by Aboriginal people in the past. Many of the rock shelters were recorded as having potential archaeological deposits (PADs) only. Sites were identified as being generally in good condition with minimal impact from land use and natural processes, although it was noted that over half the sites exhibited evidence of animal activity.

ARCHAEOLOGICAL RISK ASSESSMENT SERVICES 2008

In 2008 Archaeological Risk Assessment Services undertook an Aboriginal Cultural Heritage Assessment for Stage 2 of the Moolarben Coal Project. The Stage 2 study area comprised approximately 3,700 hectares and was located immediately east of the Stage 1 MCP site. Approximately 20.6% of the study area was surveyed as part of the assessment. A total of 258 Aboriginal sites were identified within the study area and comprised isolated finds, artefact scatters, rock shelters, grinding grooves and PADs. A number of these sites were considered to be of high scientific significance, with one site of high regional significance. The report noted that regional impacts on Aboriginal heritage resources, specifically low density artefact scatters on alluvial plain landforms, within the Ulan and Moolarben area were increasing under threat due to development impacts, and a regionally funded research project focussing on recording Aboriginal sites within the Goulburn National Park would be a valuable resource for providing comparative scientific data to assist in the assessment of regional significance of archaeological sites.

SOUTH EAST ARCHAEOLOGY 2009

South East Archaeology undertook an Aboriginal Heritage Assessment for the continued operations at Ulan Coal Mine. The assessment was to support an application under Part 3A of the EP&A Act 1979 to extend the open cut mining, undertake underground mining of new areas, and modifications and continued use of existing infrastructure. Extensive pedestrian survey was undertaken across the project area of approximately 5,431 hectares, and a total of 709 Aboriginal archaeological sites were identified within the project area, comprising rock shelters, artefact scatters, grinding groove sites, scarred trees, stone arrangements, ochre quarries and a waterhole. An additional 296 rock shelters were identified with PADs.



An Aboriginal occupation model for the Ulan locality was developed based on the results of this assessment. The occupation model suggests that artefacts occur at a very low density across the landscape, consistent with background scatter, with scattered focal areas of higher artefact densities which were considered to be areas where activities or repeated activities occurred. It was considered that the area was generally used at a low intensity by Aboriginal people in the past, perhaps due to the limited availability of higher order watercourses.

As a result of the assessment, a Conservation Area was established to protect and conserve Aboriginal heritage evidence within the conservation area. Certain sites were identified for salvage and/or temporary removal for protection, to be reinstated on completion of works.

ARCHAEOLOGICAL RISK ASSESSMENT SERVICES 2009

Archaeological Risk Assessment Services undertook an Aboriginal Cultural Heritage and Archaeological Assessment to support an application for the project modification of Moolarben Coal Project Stage 1 Rail Loop Configuration, with an additional 8 hectares of rail corridor assessed for impacts on Aboriginal cultural heritage. A total of four archaeological sites were identified during the assessment and comprised three isolated finds and one artefact scatter with two artefacts and associated PAD. The sites were predominately located on a broad spur/ridge crest above an ephemeral drainage line associated with Wilpinjong Creek. The sites were considered to be of low to medium archaeological significance. It was recommended that surface collection be completed across all four sites, with subsurface testing undertaken at the PAD site.

SOUTH EAST ARCHAEOLOGY 2010

In 2010 South East Archaeology completed an assessment for Ulan Coal Mine, comprising an Aboriginal Heritage Impact Assessment to support a project modification application. A total of 50 Aboriginal archaeological sites were identified within the 236 hectare investigation area and included artefact scatters, isolated finds, and rock shelters. These sites were considered to be consistent with the types of Aboriginal sites present within the region and were assessed as being of low regional significance.

INSIGHT HERITAGE PTY LTD 2011

In 2011 Insight Heritage undertook a project for a two kilometre long rail passing loop along the Gulgong - Sandy Hollow Railway, immediately north of Wilpinjong Coal Mine. Three small open artefact scatters and an isolated artefact were located. A Section 90 Aboriginal Heritage Impact Permit (AHIP) was subsequently obtained for this evidence and the passing loop has been constructed.

KAYANDEL ARCHAEOLOGICAL SERVICES 2011

This draft report details the work undertaken by Kayandel Archaeological Services within Site WCP33 and the test excavation and scarred tree assessment program completed within the Pit 5 Valley Floor at Wilpinjong Coal Mine. The project aimed



to “record and salvage items of Aboriginal cultural significance from the proposed Pit 5 extension of Area WCP33” (KAS 2011:8), and included surface salvage of artefacts within WCP33 along with a test excavation program within the Pit 5 valley floor designed to “determine the survival rate of Aboriginal artefacts within the study area” (KAS 2011:8). Five scarred trees were identified adjacent to WCP33 in a small uncleared area and comprised Eucalyptus Box trees. Thirteen transects with a total of 119 50cm x 50cm test excavation units were excavated within the Pit 5 valley floor, with test pits located in areas identified as being potentially sensitive, although no details regarding the determination of sensitivity levels was provided in the report, or in the vicinity of previously recorded Aboriginal archaeological sites. A total of 20 artefacts were recovered from the test pit program, with the majority identified within 30cm of the surface, although two were recovered from greater depths. The majority of artefacts were identified as quartz, along with two silicified tuff and two quartzite artefacts.

Thirty six artefacts were collected from the surface of WCP33 and again the majority were of quartz, with one silcrete and one of fine grained siliceous (FGS) material. Fifteen test pits, of 1m x 1m, were excavated within WCP33, with six artefacts excavated from four of these pits. The silcrete and FGS artefacts were concluded to demonstrate small scale flaking and discard activities within the site, with quartz flaked more intensively. The assemblage recovered was considered comparable in size and composition to other assemblages recovered during excavations within Pit 5; however reports detailing these excavations have not been made available to WCPL and AHIMS and therefore have not been reviewed for this project. The report concludes that “a wide variation in the possible survival of potential archaeological deposits (PADs)” (KAS 2011:88); however the methodology for assessing the survival rate of artefacts is not addressed in the report and therefore it is unclear how this conclusion was made. The results of the testing program were considered to support the original assessment (Navin Officer 2005) of the majority of the study area as unlikely to contain undisturbed archaeological deposits.

The report recommended that the lithic artefacts recovered during the excavation were stored in a Keeping Place at Wilpinjong Coal Mine until they could be returned to the rehabilitated landscape, in accordance with the requirements of the ACHMP. To date, this does not appear to have occurred, with artefacts apparently in the possession of KAS. Scarred trees were recommended to be removed and also stored in the Keeping Place before being returned to the rehabilitated landscape.

SOUTH EAST ARCHAEOLOGY 2013A

South East Archaeology was engaged to undertake an assessment of additional areas to support an application for a modification to the existing Part 3A approval for Wilpinjong Coal Mine. Six spatially separate areas comprising 70 hectares in total were assessed. The results of the assessment were considered to be consistent with the previous heritage assessment (Navin Officer 2005). The heritage evidence identified within the investigation area was not considered to be rare or unique within a local or regional context. It was considered that the potential for artefacts



to occur throughout the modification area was generally negligible in areas which have been heavily modified (with the upper soil unit totally removed); high in areas within a secondary resource zone (areas within 200m of Cumbo Creek); and low to very low throughout the remainder of the area investigated.

KAYANDEL ARCHAEOLOGICAL SERVICES 2013

This draft report details the excavation works undertaken at the western end of WCP216 by KAS. The excavation program aimed to identify the “archaeological potential for *in-situ* or stratified deposits that provide chronologically useful information about Aboriginal use of the area over time” (KAS 2013:2). Works included an initial surface collection along arbitrary transects across the site. Test excavations were considered to reveal “multiple phases of occupation as well as variations in stone artefact technology” (KAS 2013:3). Further open area salvage excavations were undertaken to investigate the site.

Three transects of test pits were excavated, with a total of 48 50cm x 50cm test pits excavated. Four of these test pits were expanded to further explore the artefact concentrations within these pits. In-field assessment of artefact concentrations identified five pits with higher artefact concentrations. One of these pits was identified for open area excavation with an area of 10m x 10m excavated, with a total area of 57m² excavated at WCP216.

A total of 755 artefacts were recovered from the western portion of WCP216, including from surface salvage, test excavation and open area salvage. The predominant raw material type was quartz, with other material types including chalcedony, fine grained siliceous (FGS), silicified wood, IMSTC (indurated mudstone, silicified tuff or chert) obsidian, quartzite, igneous, and silcrete. Of the 755 artefacts recovered, 15 were identified as small backed artefacts, including Bondi points, elouras and geometric microliths. A further 16 retouched artefacts were recovered along with 21 cores and the remainder of the assemblage was considered to comprise flaked debitage, specifically medial flake fragments. Artefact size was considered to increase with depth, with smaller artefacts found in the upper spits and larger artefacts in the lower spits. The lithic assemblage was identified as belonging to the Eastern Regional Sequence (ERS); a sequence describing the changes in stone artefact assemblages over time in Eastern NSW, with artefacts in the deepest spits excavated belonging to the Capertian phase and hence considered to date to pre 8,000 BP. No formal dating results such as radio carbon dating or optically stimulated luminescence (OSL) dating are detailed in the report, and therefore dating of the artefact assemblage from WCP216 is based on artefact typologies alone. Internal inconsistencies and conflicting information makes it difficult to understand the outcomes of this excavation.

APEX ARCHAEOLOGY 2013A

Systematic surface collection of 15 sites within Wilpinjong Coal Mine was conducted by Apex Archaeology in 2013. A total of 134 artefacts were recovered. Eight sites were inspected with a view to complete surface collection but no surface artefacts



were identified. The surface collection included the eastern portion of WCP216 and the overlapping WCP216/WCP126 area, with the highest surface artefact numbers present within these sites.

A range of artefact materials and types were recovered. The assemblage predominantly comprised complete flakes (34.3%), while flaked pieces (20.9%) and proximal flakes (16.4%) were also well represented. Artefacts recovered predominantly comprised quartz and complete flakes. Artefacts of note include a single chert Bondi point, an edge ground basalt axe fragment, and a single quartz eloura.

APEX ARCHAEOLOGY 2013B

Apex Archaeology undertook an excavation at WCP92, an area of Potential Archaeological Deposit (PAD) within the Pit 7 area of Wilpinjong Coal Mine. A total of 11 1m x 1m test pits were excavated within the WCP92 study area, with a total of two artefacts recovered. Both artefacts were recovered from shallow contexts and it was considered that the artefacts were redeposited from further upslope due to processes such as gravity, landslide, creep or sheet flow, rather than on site deposition.

The limited presence of subsurface archaeological material confirmed the area was utilised in some way by Aboriginal people in the past; although the results do not support the suggestion that the area comprises a PAD with substantial archaeological deposits. Rather, the low artefact densities reflect the prediction made during the initial archaeological investigations for the development of the mine that archaeological material will be present in low densities across the entirety of the Wilpinjong Coal Mine site, with higher densities in some areas.

The artefacts recovered during the excavation were considered common artefact types and materials for the area and neither were exceptionally good or representative specimens. Quartz is a naturally occurring stone within the Wilpinjong area and it was considered likely the material for the quartz artefact was obtained on site.

SOUTH EAST ARCHAEOLOGY 2013B

South East Archaeology completed an archaeological assessment to support a modification for extending mining operations at Moolarben Coal Mine. The proposed modification covers an area of approximately 178.2 hectares and approximately 176.6 hectares in total was surveyed. The survey noted very low surface visibility and therefore a low proportion of effective survey coverage; however, an additional four Aboriginal sites were identified, comprising two artefact sites and two rock shelters with archaeological deposit, as well as an additional 26 rock shelters with PADs. A total of nine quartz lithic artefacts were identified during the survey, with the assumption that local colluvial sources of quartz were utilised by the Aboriginal people of the area for artefact manufacture. The artefact scatters and majority of the rock shelter sites were considered to be of low archaeological significance, with



two of the rock shelter sites with archaeological deposit identified as possessing moderate significance. A range of management and mitigation strategies were recommended, including further assessment where required within the proposed zone of impact, test excavation and surface collection. All mitigation measures referred to the requirements of the 2013 ACHMP for Moolarben Coal Mine.

MUDGEES LALC 2014

An Aboriginal cultural heritage assessment was undertaken by Mudgee LALC in 2014 for Mid-Western Regional Council for a section of the Hill End Road. One site was recorded.

NICHE ENVIRONMENT AND HERITAGE 2016

An Aboriginal Heritage Due Diligence Assessment was undertaken for MWRC prior to safety improvements for a 7km section of Hill End Road between Tip Road and Yarrabin Road, Mudgee, NSW. Areas of potential were identified and an AHIP was recommended to mitigate the risk of impacting potential sub-surface artefact deposits.

NICHE ENVIRONMENT AND HERITAGE 2016

An Aboriginal Heritage Due Diligence Assessment was commissioned by MWRC in advance of the upgrade works to widen the existing single lane bridge over Pipeclay Creek on Henry Lawsons Drive. During this due diligence inspection, a scatter of Aboriginal artefacts was located on the north eastern perimeter of the site. An AHIP was also recommended to mitigate the risk of impacting potential sub-surface artefact deposits near the creek.

NICHE ENVIRONMENT AND HERITAGE 2016

MWRC secured funding to construct a new 2.6m cycleway/ footbridge over the Cudgegong River in Mudgee. An Aboriginal Heritage Due Diligence Assessment was commissioned by MWRC which recommended that further investigation was required on the northern side of the river. No Aboriginal objects were identified during the site visit.

APEX ARCHAEOLOGY 2017

Apex Archaeology was engaged to undertake a Due Diligence assessment for the proposed upgrade of Triamble Road, Hargraves approximately 40km south of Mudgee. The project involved the assessment of approximately 4.97km of unsealed track and an area earmarked as a borrow pit for road base material excavation during the upgrade. No Aboriginal cultural heritage constraints to the upgrade were identified.

APEX ARCHAEOLOGY 2017

Apex Archaeology was engaged to complete a Due Diligence assessment for the proposed bridge and road widening located on Mebul Road at Goodiman Creek, Gulgong, NSW. Approximately 200m of unsealed track and road verge were inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.



APEX ARCHAEOLOGY 2017

Apex Archaeology was engaged to complete a Due Diligence assessment for the Hayes Gap Road Widening project located on Hayes Gap Road, Hayes Gap, NSW. Approximately 200m of unsealed track and road verge were inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.

NGH ENVIRONMENTAL 2017

NGH was commissioned to complete an Aboriginal Cultural Heritage Assessment for the proposed Beryl Solar Farm, located at Beryl approximately 6km to the west of Gulgong. As a result of the site survey five new Aboriginal sites were recorded (four isolated finds and one artefact scatter). No areas of archaeological potential were identified. A CMP was recommended to be prepared and surface collection of the sites was suggested should impact to the sites be unavoidable.

APEX ARCHAEOLOGY 2018A

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Beryl Road Widening project located along Beryl Road, Gulgong, NSW. Approximately 2.5km section of road verge were inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.

APEX ARCHAEOLOGY 2018B

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Botobolar Causeway upgrade project located along Queenspinch Road, NSW. No Aboriginal cultural heritage constraints to the upgrade were identified.

APEX ARCHAEOLOGY 2018C

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Lue Road Widening project located along Lue Road, Mudgee, NSW. Approximately 1km section of road verge was inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.

APEX ARCHAEOLOGY 2018D

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Pyramul Causeway Upgrade located along Pyramul Road, Mudgee, NSW. No Aboriginal cultural heritage constraints to the upgrade were identified.

APEX ARCHAEOLOGY 2018E

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Bylong Valley Way, Road Widening project located along the Bylong Valley Way, Bylong, NSW. Approximately 2.6km section of road verge were inspected for cultural heritage. One site was identified and subsequently register on the AHIMS database. Mitigation in the form of avoidance of this site was recommended and utilised.



APEX ARCHAEOLOGY 2018F

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Ulan-Wollar Road Widening project located along the Ulan-Wollar Road, Wilpinjong, NSW. Approximately 1.6km section of road verge was inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.

OZARK ENVIRONMENTAL AND HERITAGE MANAGEMENT PTY LTD 2018

OzArch were engaged to undertake an Aboriginal due diligence assessment for two sections of Hill End Road. No Aboriginal cultural heritage constraints to the upgrade for section one were identified. However, three new Aboriginal sites were identified in the second section. Avoidance of these sites was recommended and further mitigation in the form of an AHIP was suggested if avoidance was not possible. It is unknown at this stage what mitigation strategy was adopted by MWRC for these sites.

NAVIN OFFICER HERITAGE CONSULTANTS 2015 -2018

Between 2015 and 2018 NOHC were engaged by Peabody Energy to undertake assessments and clearance of Aboriginal cultural heritage within the operation areas of the Wilpinjong coal mine. To date approximately 29 projects have been completed ranging from survey, artefact collection, test excavation, scarred tree assessment and removal, and rock art monitoring and assessment.

APEX ARCHAEOLOGY 2019A

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Lawsons Creek Footbridge located to the north of Mudgee. Further Aboriginal archaeological assessment in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010), including full consultation with the Aboriginal community in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (OEH 2010), was recommended as an area of Potential archaeological deposit was identified.

OZARK ENVIRONMENTAL AND HERITAGE MANAGEMENT PTY LTD 2019

OzArk EHM were commissioned by MWRC to undertake an Aboriginal Archaeological test excavation program for the Cudgegong River & Lawsons Creek Road Bridge and Footbridge. Within the proposed road and footpath alignment, no artefacts were recovered during the testing process. A total of 17, 50cm x 50cm test pits were excavated, totalling 4.25m². The test program focussed specifically on the proposed pathway alignments and did not consider wider potential impacts during construction, including the footbridge footprint. It was concluded that the area did not contain archaeological potential, based on the results of the testing program.



APEX ARCHAEOLOGY 2019B

Apex Archaeology was engaged by MWRC to complete a Due Diligence assessment in advance of the proposed construction of a pedestrian footbridge located in Rylstone over the Cudgegong River. The footbridge would attach to the side of the current bridge. No Aboriginal cultural heritage constraints to the proposed footbridge construction were identified.

APEX ARCHAEOLOGY 2019C

Apex Archaeology was engaged by MWRC to complete a Due Diligence assessment in advance of the proposed creekbank rehabilitation works for the Redbank Creek which was located within Mudgee directly north of the Percy Hott Rest Area on the eastern side of the Castlereagh Highway. No Aboriginal cultural heritage constraints to the rehabilitation works were identified.

APEX ARCHAEOLOGY 2019D

Apex Archaeology was engaged by MWRC to complete an Aboriginal due diligence assessment for the Hill End Road Widening project. Hill End Road, Mudgee, NSW. Approximately 43km section of road verge either side of the road was inspected for cultural heritage. No Aboriginal cultural heritage constraints to the upgrade were identified.

Two previously recorded sites (AHIMS site 36-5-0193 & 36-5-0194) were located within the study area, and were re-evaluated as part of this assessment. Based on a range of factors these two sites do not possess culturally modified material. As such, Aboriginal site Impact Recording Forms (ASIRFs) were prepared and submitted to deregister these sites as they are not considered valid Aboriginal sites.

An ASIRF for AHIMS site 36-5-187 was also been prepared to modify the site card content to remove the PAD listing. This site was relocated and re-assessed and based on a number of landform assessment criteria does not meet the definition of "Potential Archaeological Deposit".

Ground disturbance was high throughout the study area. Evidence of disturbance relating to road construction, vegetation clearance (historic and recent), grading, drainage line construction, Telstra cabling and road maintenance along the entirety of the study area was noted. Severe landscape modification was particularly evident throughout the elevated portions of the road in the hills (severe benching into hillsides). No areas of potential archaeological deposit were identified.

APEX ARCHAEOLOGY 2019E

Apex Archaeology were engaged to assist Mid-Western Regional Council in the assessment of two small sections of Ulan-Wollar Road, Wilpinjong prior to road widening upgrades to include overtaking and acceleration lanes around two mine entrances. An Aboriginal due diligence assessment was completed. No Aboriginal heritage constraints were identified.



APEX ARCHAEOLOGY 2020A

Apex Archaeology were engaged by MWRC to survey approximately 90km of fire affected road verge to the east of Rylstone ahead of Australian Defence Force personnel who were clearing the affected fencelines and trees and re-establishing the road verge safety. Several previously recorded sites were relocated and assessed and 1 new site was identified during the project. All recorded Aboriginal sites were avoided by the ADF personnel during their works.

APEX ARCHAEOLOGY 2020B

Apex Archaeology were engaged by MWRC to survey six roads (Barneys Reef Road, Bruce Road, Bylong Valley Way, Cudgegong Road, Goulburn River Bridge and Mebul Road) throughout the MWRC area in advance of proposed upgrade works. An Aboriginal due diligence assessment report was completed for each road assessment. No Aboriginal heritage constraints were identified.

APEX ARCHAEOLOGY 2020C

Apex Archaeology were engaged by Mid-Western Regional Council to complete an assessment of the proposed Cudgegong River Footbridge and Putta Bucca Road shared pathway, in Mudgee NSW. This assessment was prepared in advance of the proposed upgrade works to be carried out by MWRC. No Aboriginal heritage constraints were identified.

2.2.1 SYNTHESIS

Archaeological works within the wider areas have generally been related to development and mining related proposals. It appears that artefact evidence generally comprises low density background scatter or discard distributed widely across the locality, with higher densities occurring occasionally in areas of more focused occupation such as camp sites or repeat occupation sites. This generally occurs in favourable environmental contexts such as elevated, well drained spur and ridge crests, flats, terraces and simple slopes in close proximity to watercourses, with a greater focus on higher order water courses. Artefacts tend to comprise raw materials such as quartz, tuff, silcrete and chert. In general, non-specific flaking activities are represented, although microlith and microblade production is also noted.

Rock shelter sites in the area are identified as varying in size and habitable area, their topographical location and also contents; with rock art occurring relatively infrequently in the locality and generally comprising red ochre hand stencils. Grinding groove sites are not only identified along watercourses on sedimentary bedrock such as sandstone, but also on open sandstone surfaces in other contexts such as in rock shelters. Scarred or culturally modified trees have been identified within the wider region, generally in areas of uncleared old growth vegetation. Low numbers of other sites such as stone arrangements, a possible burial, and ochre or lithic quarries have also been identified.



2.3 STEP 2B: LANDSCAPE FEATURES

An assessment of landscape features is required to determine whether Aboriginal objects are likely to be present within the proposed activity area. Certain landscape features are more likely to have been utilised by Aboriginal people in the past and therefore are more likely to have retained archaeological evidence of this use. Focal areas of activity for Aboriginal people include rock shelters, sand dunes, water courses, waterholes and wetlands, as well as ridge lines for travel routes.

The presence of specific raw materials for artefact manufacture, as well as soil fertility levels to support vegetation resources, are also factors to be considered in the assessment of the environmental context of a study area. Geomorphological factors, such as erosion and accretion of soils, affect the preservation of potential archaeological deposits and therefore need to be considered when making an assessment of the potential for archaeological material to be present within a study area. This assessment is predominantly a desktop exercise.

2.3.1 EXISTING ENVIRONMENT

SOILS, GEOLOGY AND VEGETATION

The study area falls within the Cudgegong soil landscape (Figure 3). The Cudgegong landscape is made up of alluvial plains and terraces of the Cudgegong River. This landscape occurs on slightly undulating surfaces with about 1m of local relief. Native vegetation that dominates this landscape consists of open eucalypt woodland with river red gums, yellow box, rough barked apple and river she-oak. This landscape has been extensively cleared and sown to improved pasture. Existing land degradation includes streambank erosion along some sections of the river. The underlying geology consists of quaternary alluvium and recent alluvial deposits on the modern floodplain of the Cudgegong River.

HYDROLOGY

The nearest major permanent water source is Lawsons Creek, with the Cudgegong River connecting to it less than 50m to the west. Lawsons Creek and the Cudgegong River are part of the overall Hunter River catchment area. Lawsons Creek is defined as a third order water course according to the Strahler system as used by DPI Water (Figure 4). Watercourse classification ranges from first order through to fourth order (and above) with first order being the lowest, ie a minor creek or ephemeral watercourse.

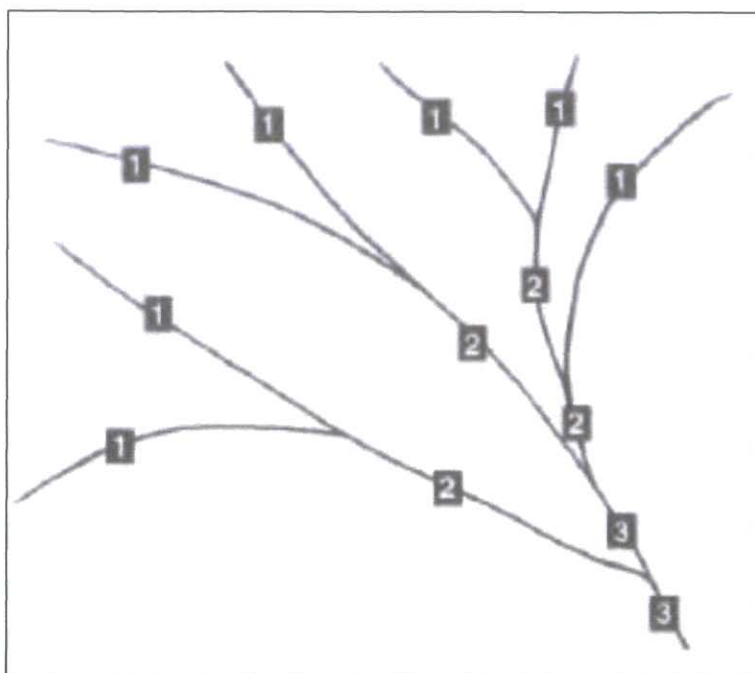


Figure 4: The Strahler system (Source: Department of Planning and Environment 2016).

The study area is located within 200m of a natural watercourse. The study area is considered to have high levels of disturbance relating to historic land clearance, road construction and subsequent erosion. However, as it is in close proximity to a watercourse, there is a requirement to proceed to Step 3 of the due diligence assessment process, as this landscape feature is associated with Aboriginal archaeological potential.

2.3.2 ETHNOHISTORY

According to Tindale (1974), the study area is located within the Wiradjuri tribal and linguistic territory. This territory is described by Tindale (1974) as being:

...on the Lachlan River and south from Condoblin to Booligal; at Carrathool, Wagga Wagga, Cootamundra, Cowra, Parkes, Trundle; east to Gundagai, Boorowa and Rylstone; at Wellington, Mudgee, Bathurst and Carcoar; west along Billabong Creek to beyond Mosgiel, south west to near Hay and Narranderra, south to Howlong on the upper Murray; at Albury and east to about Tumbarumba (Tindale 1974).

Aboriginal society was constructed of a hierarchy of social levels and groups, with fluid boundaries (Peterson 1976), with the smallest group comprising a family of a man and his wife/wives, children and some grandparents. The next level consists of bands, which were small groups of several families who worked together for hunting and gathering purposes. The third level comprised regional networks with a number of bands, and these bands generally shared a common language dialect and/or had a belief in a common ancestor. Networks would come together for specific ceremonial purposes. The highest level is the tribe, which is usually described as a



linguistic unit with flexible territorial boundaries (Peterson 1976). Various dialects of the Wiradjuri language were identified within the region (Tindale 1974). Tindale also considered the Wiradjuri to be “one of the largest tribal groupings in Australia, with many hordes”.

The Mudgee/Rylstone area was considered to form the central focus for a clan territory (Pearson 1981). Following the contact period in the 1820s, when European people began settling in the Hunter Valley, clashes between Aboriginal and European settlers were common (Dormer 1997). R.H Mathews (1894) described a ceremonial bora ground located along Wilpinjong Creek, which he saw in 1893 along with a local resident, who described that he had been aware of several boras being held there since the 1860s.

An Aboriginal mission station was established at Wellington by 1832. An 1845 report by Graham D. Hunter, Commissioner for Crown Lands in the County of Bligh, described that the condition of the Aboriginal peoples in the area had not changed much in recent years, with some employed with the caveat that they could still participate in traditional life when required by tribal elders. Conflict was still occurring in some areas but the Commissioner was trying to provide protection for both ‘white and black’ people (Dormer 1997:151).

A major influenza epidemic in 1860 decimated the local Aboriginal population (Murray-Prior 1973, quoted in NOHC 2005: F-38). The discovery of gold at Red Hill in 1870 led to a substantial increase in the non-Aboriginal population within the area and by 1872 Gulgong had reached 20,000 inhabitants.

Aboriginal people utilised a wide range of subsistence resources in the past, with ethnohistorical sources recording the diet of Aboriginal people including kangaroo, possum, kangaroo rat, lizards, birds, platypus, wallaby and a range of plants and insects as well as fish and shell fish (Pearson 1981). A wide range of native animals, including birds and reptiles, have been identified within the wider environment, and are likely to have been utilised as food resources by Aboriginal people in the past.

2.3.3 RAW MATERIALS

A wide range of raw materials were selected by Aboriginal people for flaking to create stone implements. Material types ranged from high quality to poor quality for flaking purposes, depending on the geology of the area and readily available material types. The following is a description of a range of raw material types known to have been utilised by Aboriginal people for the creation of stone artefacts.

BRECCIA

Breccias are coarse, angular volcanic fragments cemented together by a finer grained tuffaceous matrix.



CHALCEDONY

Chalcedony is a microcrystalline, siliceous rock which is very smooth and can be glossy. Introduction of impurities can produce different coloured versions of chalcedony, including yellow/brown (referred to as carnelian), brown (sard), jasper (red/burgundy) and multicoloured agate. It flakes with a sharp edge and was a prized material type for the creation of stone artefacts in parts of Australia (Kuskie & Kamminga 2000: 186).

CHERT

Chert is a highly siliceous sedimentary rock, formed in marine sediments and also found within nodules of limestone. Accumulation of substances such as iron oxide during the formation process often results in banded materials with strong colours. Chert is found in the Illawarra Coal Measures and also as pebbles and colluvial gravels. It flakes with durable, sharp edges and can range in colour from cream to red to brown and grey.

PETRIFIED WOOD

Petrified wood is formed following burial of dead wood by sediment and the original wood being replaced by silica. Petrified wood is a type of chert and is a brown and grey banded rock and fractures irregularly along the original grain.

QUARTZ

Pure quartz is formed of silicon dioxide, and has a glossy texture and is translucent. Introduction of traces of minerals can lead to colouration of the quartz, such as pink, grey or yellow. The crystalline nature of quartz allows for minute vacuoles to fill with gas or liquid, giving the material a milky appearance.

Often quartz exhibits internal flaws which can affect the flaking quality of the material, meaning that in general it is a low-quality flaking material (Kuskie & Kamminga 2000: 186). However, quartz is an abundant and widely available material type and therefore is one of the most common raw materials used for artefact manufacture in Australia. Flaking of quartz can produce small, very sharp flakes which can be used for activities such as cutting plant materials, butchering and skinning.

QUARTZITE

Formed from sandstone, quartzite is a metamorphic stone high in silica that has been heated or had silica infiltrate the voids found between the sand grains. Quartzite ranges in colour from grey to yellow and brown.

SILCRETE

Silcrete is a siliceous material formed by the cementing of quartz clasts with a matrix. These clasts may be very fine grained to quite large. It ranges in colour from grey to white, brown, red or yellow. Alluvial and terrace gravels of the Hunter River were a major primary source of silcrete within the Hunter Valley. Silcrete flakes with sharp edges and is quite durable, making silcrete suitable for use in heavy duty woodworking activities and also for spear barbs (Kuskie & Kamminga 2000:184).



TUFF/INDURATED MUDSTONE

There is some disagreement relating to the identification of lithic materials as tuff or indurated mudstone. The material is a finely textured, very hard yellow/orange/reddish-brown or grey rock from the upper Hunter Valley. Kuskie and Kamminga (2000: 6, 180) describe that identification of lithic materials within the Hunter Valley followed the classification developed by Hughes (1984), with indurated mudstone described as a common stone material in the area. However, Kuskie and Kamminga's analysis, which included x-ray diffraction, identified that lithics identified as 'indurated mudstone' was actually rhyolitic tuff, with significant differences in mineral composition and fracture mechanics between the stone types. They define mudstone as rocks formed from more than 50% clay and silt with very fine grain sizes and then hardened.

The lithification of these mudstones results in shale (Kuskie & Kamminga 2000: 181) and thus 'indurated mudstone', in the opinion of Kuskie and Kamminga, do not produce stones with the properties required for lithic manufacture.

In 2011, Hughes, Hiscock and Watchman undertook an assessment of the different types of stones within the Hunter Valley to determine whether tuff or indurated mudstone is the most appropriate terminology for describing this lithic material. The authors undertook thin section studies of a number of rocks from the Hunter Valley and determined that the term 'indurated mudstone' is appropriate, with an acknowledgment that some of this material may have been volcanic in origin. They also acknowledge that precise interpretation of the differences between material types is difficult without detailed petrological examination, and suggest that artefacts produced on this material are labelled as 'IMT' or 'indurated mudstone/tuff'.

2.3.4 PROCUREMENT

Assemblage characteristics are related to and dependent on the distance of the knapping site from raw materials for artefact manufacture, and different material types were better suited for certain tasks than other material types. Considerations such as social or territorial limitations or restrictions on access to raw material sources, movement of groups across the landscape and knowledge of source locations can influence the procurement behaviour of Aboriginal people. Raw materials may also have been used for trade or special exchange between different tribes.

2.3.5 MANUFACTURE

A range of methodologies were used in the manufacture of stone artefacts and tools, through the reduction of a stone source. Stone may have been sourced from river gravels, rock outcrops, or opportunistic cobble selection. Hiscock (1988:36-40) suggests artefact manufacture comprises six stages, as follows:

1. The initial reduction of a selected stone material may have occurred at the initial source location, or once the stone had been transported to the site.



2. The initial reduction phase produced large flakes which were relatively thick and contained high percentages of cortex. Generally the blows were struck by direct percussion and would often take advantage of prominent natural ridges in the source material.
3. Some of these initial flakes would be selected for further reduction. Generally only larger flakes with a weight greater than 13-15 grams would be selected for further flaking activities.
4. Beginning of 'tranchet reduction', whereby the ventral surface of a larger flake was struck to remove smaller flakes from the dorsal surface, with this retouch applied to the lateral margins to create potential platforms, and to the distal and proximal ends to create ridges and remove any unwanted mass. These steps were alternated during further reduction of the flake.
5. Flakes were selected for further working in the form of backing.
6. Suitable flakes such as microblades were retouched along a thick margin opposite the chord to create a backed blade.

Hiscock (1986) proposed that working of stone materials followed a production line style of working, with initial reduction of cores to produce large flakes, followed by heat treatment of suitable flakes before the commencement of tranchet reduction. These steps did not necessarily have to occur at the same physical location, but instead may have been undertaken as the opportunity presented.

2.3.6 PREDICTIVE MODEL

Navin Officer (2005) and South East Archaeology (2009; 2013) have both developed and refined detailed predictive and occupational models for the Aboriginal occupation in the wider region. In general, their occupational models identified that:

- Aboriginal occupation focussed predominantly on resource rich zones, particularly along higher order watercourses. Abundant resources for sustenance and water would supply longer stays for family and community base camps, as well as occasional gatherings of larger groups. These areas were considered to be primary resource zones;
- Secondary resource zones were focussed on watercourses, wetlands and/or swamps in close proximity to higher order watercourses and the associated flats and terraces. These areas were seasonally occupied during the course of hunting and gathering activities by small hunting parties and family groups. Generally level ground was selected for camping, near water sources, and was sporadic rather than continuous occupation;
- Outside of the primary and secondary resource zones, activities included resource gathering and movement across the landscape by small parties, in order to access areas with greater resources;
- Opportunistic reduction of raw materials to create stone artefacts would be quite widespread across the landscape, in order to produce stone tools on an 'as needed' basis;
- Locally available quartz was favoured for knapping activities, along with tuff and chert, depending on their availability;



- Exposed sandstone would be utilised for creating and maintaining ground edge hatchets, creating grinding grooves. This action may have been opportunistic rather than specific, with evidence of long term, repeated use not expected to occur; and
- Aboriginal occupation of the general area is believed to have occurred within the past 5,000 years, although it is possible it may extend as far as 30,000-40,000 years ago (SEA 2013:23).

From these general predictions of how the area was utilised for occupation by Aboriginal people in the past, a predictive model for the location of archaeological sites was developed by Navin Officer (2005) and South East Archaeology (2009; 2013). This has been summarised below:

- Low spurs within 100m of higher order streams are likely to contain sites with relatively higher numbers of artefacts;
- Very low density artefact scatters may occur throughout valley floor contexts;
- Elevated, level ground adjacent to major, permanent streams has the potential for open sites with higher concentrations of artefacts;
- Stone artefact scatters are likely to increase in number and density relative to the site's proximity to water and raw material sources;
- Suitable rockshelters with relatively level floors, adequate shelter and located in basal slope contexts in association with a drainage line may contain occupation deposit and/or pigment rock art;
- Grinding grooves are likely to occur only where suitable sandstone exposures occur in association with a source of water;
- Burials are rare but may occur in deep, fine grained alluvial or Aeolian sediments, or in the form of stone cairns;
- Scarred trees have the potential to survive in areas of suitable old growth trees;
- Archaeological deposits with high scientific significance are most likely to be found in rockshelters with suitable deposit depth, or on elevated areas with aggrading sediments in close proximity to permanent or reliable water sources, or within rockshelter contexts;
- Outside of these identified areas, stratified deposits or in situ archaeological material is unlikely to survive due to bioturbation and/or natural processes such as water action, erosion etc; and
- Isolated surface and subsurface archaeological material may exist as background scatter in very low densities, but the location of this potential material is impossible to predict.

The hydrology, topography, soils and geology of an area are all important considerations when developing a predictive model for an area.



2.4 STEP 3: AVOID HARM

Given the proximity to water, it was necessary to undertake a visual inspection of the study area to identify any surface objects or landforms with potential archaeological deposits (PAD) and to relocate and evaluate the previously recorded sites. This inspection would allow conclusions to be made regarding the probability of archaeological objects occurring within the proposed area of upgrade. This would assist in determining if there was any archaeological potential within the study area which could potentially be harmed by the proposed works, and in turn, assist in determining if harm to the archaeological resource could be avoided.

The proposed works will impact the entirety of the study area, through the road upgrade construction works.

2.5 STEP 4: VISUAL INSPECTION

A visual pedestrian inspection of the study area was undertaken on Friday 14 May 2021 by Leigh Bate, Archaeologist with Apex Archaeology.

2.5.1 SURVEY COVERAGE

The area was inspected by pedestrian survey to identify any surface artefacts or any areas with potential for subsurface deposits to be present. Both sides of Lawsons Creek were inspected as part of the survey.

2.5.2 RESULTS

No newly identified archaeological material was identified during the survey. Ground surface visibility (GSV) was low throughout the study area. GSV was rated at 10% overall.

Ground disturbance was low to moderate throughout the study area. Evidence of clearing for pastural/cropping activities was evident and some minor creek bank destabilisation due to vegetation clearance. The proposed road corridor on the western side of Lawsons Creek was considered to be in a disturbed context due to the built-up nature of the area relating to the ongoing occupation of the property (rural farming/disturbance). Evidence of disturbance relating to access track and building construction has impacted the western portion of the study area. Less disturbance has occurred on the eastern bank of Lawsons Creek; however, the results of the 2019 test excavation program undertaken by Ozark show that this area was also disturbed and that no artefact bearing deposits exist on this side of the creek bank.

No additional areas of potential archaeological deposit (PAD) were identified within the study area. No cultural archaeological material was identified on the ground surface within the study area.



Plate 1: General view looking south east from Putta Bucca Road to the start of the proposed road.



Plate 2: Looking south east along proposed new road alignment.



Plate 3: Looking south east along proposed the new road alignment.



Plate 4: Looking north west along proposed the new road alignment.



Plate 5: Looking north west along proposed the new road alignment.



Plate 6: Looking east along the proposed the new road alignment towards the new Lawsons Creek Bridge location.



Plate 7: Looking east along the proposed the new road alignment towards the new Lawsons Creek Bridge location.



Plate 8: Looking north west from the southern side of Lawsons Creek along the proposed new road alignment



Plate 9: Looking north west towards the new Lawsons Creek Bridge location along the proposed new road alignment.

2.5.3 DISCUSSION

In accordance with the Due Diligence Code of Practice, land is considered disturbed if human activities within the area have left clear and observable changes on the landscape. The study area meets this definition in general, as ground disturbance was moderate throughout the study area. Evidence of disturbance relating to construction of access tracks and residential building was noted along with historic vegetation clearance of the area.

A test excavation program was undertaken in the immediate vicinity by OzArk in 2019 and the following was reported:

Pits were excavated to depths of 18 centimetres (cm) to 50 cm. No artefacts or intact archaeological features were recovered during the test excavation program and it was concluded that the study area has been subject to high levels of disturbance including natural and post-European disturbances.

The level of disturbance within the study area means that there is a low chance of further intact sub-surface deposits being present within the immediate surrounding area. The entire proposed road alignment and bridge site were re-assessed as having no potential for sub-surface deposits due to the level of disturbance relating to previous clearance, access track construction activities, residential building and farming/clearance activities.



3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- One previously recorded Aboriginal site is located within the study area.
- One previously recorded Aboriginal site is located just outside the study area.
- No new archaeological material was identified on the ground surface within the study area.
- The study area is re-assessed as having no potential for subsurface archaeological deposits, and this is confirmed by the site inspection and previous test excavation.
- This assessment was based on identification of landform elements, previous archaeological work undertaken within the wider Mudgee region, and a visual inspection of the study area.

3.2 RECOMMENDATIONS

- No further Aboriginal archaeological assessment is required prior to the commencement of upgrade works as described in this report.
- AHIMS site 36-6-1010 should be updated by process of an Aboriginal Site Impact Recording Form (ASIRF) and removed from the AHIMS register, in line with the findings of Ozark (2019).
- The results of this assessment fulfil the requirement for Due Diligence in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Code of Practice). Works may proceed with caution.
- The proposed works must be contained to the area assessed during this due diligence assessment, as shown on Figure 1. If the proposed location is amended, further archaeological assessment may be necessary to determine if the proposed works will impact any Aboriginal objects or archaeological deposits.
- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.



4.0 REFERENCES

Apex Archaeology, 2013b. *Wilpinjong Pit 7 SOW – Mining Lease 1573 Aboriginal Archaeological Excavation Report: WCP92*. Unpublished report to WCPL.

Apex Archaeology, 2017a. *Triamble Road upgrade, Hargraves, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2017b. *Mebul Road Bridge upgrade, Gulgong, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2017c. *Hayes Gap Road upgrade, Hayes Gap, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2017d. *Glen Willow Footbridge, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018a. *Beryl Road upgrade, Beryl, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018b. *Botobolar Causeway Upgrade, Queenspinch Road, Queenspinch, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018c. *Lue Road Upgrade, Lue Road, Lue, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018d. *Pyramul Causeway Upgrade, Pyramul Road, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018e. *Bylong-Valley Way Road Upgrade, Bylong Valley Way, Bylong, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2018f. *Ulan-Wollar Road widening, Ulan-Wollar Road, Wilpinjong, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2019a. *Lawsons Creek Footbridge, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2019b. *Cudgegong River Footbridge, Rylstone, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2019c. *Redbank Creek, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2019d. *Hill End Road widening, Hill End Road, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.



Apex Archaeology, 2019e. *Ulan-Wollar Road widening, Wilpinjong, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2020a. *Coxs Creek Road, Coxs Crown Road, Nullo Mountain Road, Coricudgy Road and Reedy Creek Road, Road Verge Rehabilitation, Rylstone, NSW*. Report to Mid-Western Regional Council.

Apex Archaeology, 2020b. *Barneys Reef Road, Bruce Road, Bylong Valley Way, Cudgegong Road, Goulburn River Bridge, Mebul Road: Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Apex Archaeology, 2020c. *Cudgegong River Footbridge and Putta Bucca Road Shared Pathway Upgrade, Mudgee, NSW. Aboriginal Due Diligence Assessment*. Report to Mid-Western Regional Council.

Archaeological Risk Assessment Services, 2008, *Moolarben Coal Project: Aboriginal Cultural Heritage Assessment Report, Stage 2*. Report to Moolarben Coal Mines Pty Limited.

Besant, A. and Wyatt, E. 2011 *Aboriginal Cultural Heritage Assessment Report Proposed Rail Passing Loop at Wilpinjong, near Mudgee NSW*. Unpublished report to Australian Rail Track Corporation.

B.W. Murphy and J.W. Lawrie. 1998. *Soil Landscape of the Dubbo 1:250,000 Sheet (Dubbo, Wellington, Gulgong, Mudgee)* Department of Land and Water Conservation Research Centre.

Dormer, M. (ed). 1997, *Travelling Down the Cudgegong*. The Gulgong Writing Group, Mudgee Visitors Centre.

DECCW 2010. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. DECCW, Sydney South.

DECCW 2010. *Aboriginal cultural heritage consultation requirements for proponents 2010*. DECCW, Sydney South.

EMGA Mitchell McLennan, 2013, *Aboriginal cultural heritage test excavation report: Cobbora Coal Project*. Report to Cobbora Holding Company Pty Limited.

Gaynor, P.J. 2008, *Experimental Plough Zone Technology*. Retrieved 21 February 2014 from <http://www.archeo.com.au/experimental.html>

Hiscock, P. 1986 Technological change in the Hunter River valley and the interpretation of late Holocene change in Australia. *Archaeology in Oceania* 21 :40-50.



Hiscock, P. 1988. *Prehistoric Settlement Patterns and Artefact Manufacture at Lawn Hill, Northwest Queensland*. PhD thesis. Department of Anthropology and sociology, University of Queensland, St Lucia, Queensland.

Hughes, P.J. 1984, *NSW National Parks and Wildlife Service Hunter Valley Region Archaeology Project Stage 1: An Overview of the Archaeology of the Hunter Valley, its Environmental Setting and the Impacts of Development. Volume 1*. Unpublished report by Anutech Pty Ltd to NSW NPWS.

Hughes, P., Hiscock, P. & Watchman, A. 2011, 'Terminological Debate in the Upper Hunter Valley: Indurated Mudstone versus Tuff', in *Australian Archaeology* 72: 45-46.

Kayandel Archaeological Services, 2006, *Wilpinjong Coal Project: Aboriginal Cultural Heritage Survey, Supplemental Survey of Escarpment Areas and Report of Findings*. Report to Wilpinjong Coal Pty Ltd.

Kayandel Archaeological Services, 2011, *Wilpinjong Coal Mine, Wilpinjong, NSW, Archaeological Excavation and Salvage: WCP33. October 2009 and December 2010 – January 2011*. Report to Wilpinjong Coal Pty Ltd.

Kuskie, P.J & Kamminga, J. 2000, *Salvage of Aboriginal archaeological sites in relation to the F3 Freeway near Lenaghans Drive, Black Hill, New South Wales*. Volume A: Report. Report to Roads and Traffic Authority, New South Wales.

Mathews, R.H. 1894, *Aboriginal Bora Held at Gundabloui*. *Journal of the Royal Society of New South Wales* Vol 29: 98-129.

Moore, D.R. 1970, Results of an archaeological survey of the Hunter River Valley, New South Wales, Australia. Part I: The Bondaian Industry of the Upper Hunter and Goulburn River Valleys. *Records of the Australian Museum* 28(2): 25-64, plates 4-14. [27 August 1970].

Navin Officer Heritage Consultants, 2005, *Wilpinjong Coal Project: Appendix F Aboriginal Cultural Heritage Assessment*. Report to Wilpinjong Coal Pty Limited.

Navin Officer Heritage Consultants, 2006a, *Archaeological Salvage and Post EIS Investigations, Wilpinjong Coal Project – Interim Summary Report*. Report to Wilpinjong Coal Pty Limited.

Navin Officer Heritage Consultants, 2006b, *Baseline Recording of three Aboriginal Rock Art Sites, WCP72, 152 and 153, at Wilpinjong, NSW. Wilpinjong Coal Project, Aboriginal Cultural Heritage Management Program*. Volume 1 Main Report. Report to Wilpinjong Coal Pty Limited.

OEH 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. OEH, Sydney South.

OzArk 2018. *Hill End Road Upgrade: Section One, Aboriginal Due Diligence Archaeological Assessment*. Unpublished report to MWRC.



OzArk 2018. *Hill End Road Upgrade: Section Two, Aboriginal Due Diligence Archaeological Assessment*. Unpublished report to MWRC.

OzArk Environmental and Heritage Management Pty Ltd, 2005, *Indigenous and Non-Indigenous Heritage Assessment: Wollar – Wellington 330kV Electricity Transmission Line*. Unpublished report to International Environmental Consultants and Transgrid.

Peterson, N (ed). 1976, *Tribes and Boundaries in Australia – Ecology, spatial organisation and process in Aboriginal Australia*. Australian Institute of Aboriginal Studies, Canberra.

Pearson, M. 1981, *Seen Through Different Eyes: Changing Land Use and Settlement Patterns in the Upper Macquarie River Region of NSW from Prehistoric Times to 1860*. Unpublished PhD Thesis, Australian National University.

South East Archaeology, 2013, *Moolarben Coal Project – Stage 1 Optimisation Modification, near Ulan, Central Tablelands of New South Wales: Aboriginal Cultural Heritage Assessment*. Report to Moolarben Coal Pty Limited. South East Archaeology, 2009, *Ulan Coal Continued Operations: Aboriginal Heritage Assessment Volume A*. Report to Umwelt (Australia) Pty Limited, on behalf of Ulan Coal Mines Limited.

South East Archaeology, 2010, *Ulan Coal Continued Operations Aboriginal Heritage Impact Assessment – Supplementary Report for North 1 Panels Project Modification*. Report to Umwelt (Australia) Pty Limited, on behalf of Ulan Coal Mines Limited.

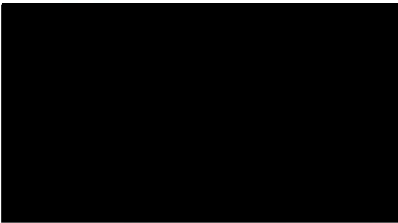
South East Archaeology, 2013a, *Wilpinjong Coal Mine, Central Tablelands of New South Wales – Modification: Aboriginal Cultural Heritage Assessment*. Report to Wilpinjong Coal Pty Limited.

South East Archaeology, 2013b, *Moolarben Coal Project – Stage 1 Optimisation Modification, near Ulan, Central Tablelands of New South Wales: Aboriginal Cultural Heritage Assessment*. Report to Moolarben Coal Pty Limited.

Tindale, N.B. 1974, *Aboriginal Tribes of Australia – Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Online resource, accessed from <http://archives.samuseum.sa.gov.au/tribalmmap/index.html>



APPENDIX A: AHIMS BASIC SEARCH RESULTS



AHIMS Web Service search for the following area at Lot : 2, DP:DP1252505 with a Buffer of 200 meters, conducted by Leigh Bate on 18 May 2021.

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



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

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

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

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

Important information about your AHIMS search

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