APPENDIX C

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

A view across the southern portion of the Survey Boundary.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

GREATER RAVENSWORTH AREA WATER AND TAILINGS SCHEME (GRAWTS) STAGE 2

GREATER RAVENSWORTH AREA, NSW

FEBRUARY 2022

Report prepared by

OzArk Environment & Heritage

for Glencore Coal Assets Australia Pty Ltd

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ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

Report Title	*Aboriginal Cultural Heritage Assessment Report. Greater Ravensworth Area Water and Tailings Scheme (GRAWTS) Stage 2.*
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Ben Churcher, OzArk Environment & Heritage Principal Archaeologist

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Acknowledgement

OzArk acknowledge Wonnarua traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

ABBREVIATIONS AND GLOSSARY

ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	*Aboriginal Cultural Heritage Consultation Requirements for Proponents.* Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
AHIMS	Aboriginal Heritage Information Management System. Administered by Department of Premier and Cabinet, AHIMS is the central register of all Aboriginal sites within NSW.
AHIP	Aboriginal Heritage Impact Permit
Code of Practice	*Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* under Part 6 NPW Act. Issued by DECCW in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
EIS	Environmental Impact Statement. A required document for major projects documenting all potential impacts to the environment, including heritage, that may arise due to the development.
GSE	Ground surface exposure
GSV	Ground surface visibility
Heritage NSW	Government department tasked with ensuring compliance with the NPW Act. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC).
NPW Act	*National Parks and Wildlife Act 1974*. Primary legislation governing Aboriginal cultural heritage within NSW.
PAD	Potential archaeological deposit. Indicates that a particular location has potential to contain subsurface archaeological deposits, although no Aboriginal objects are visible.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the Modification.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by James Bailey & Associates on behalf of Glencore Coal Assets Australia (the proponent) to prepare an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) for the proposed Stage 2 of the Greater Ravensworth Area Water and Tailings Scheme (GRAWTS) (the Modification).

The Modification is in the Greater Ravensworth area within the Singleton Local Government Area.

There are synergies between the Glencore mines in the greater Ravensworth area including a network of water and tailings management infrastructure referred to as the GRAWTS. The GRAWTS enables the transfer of water and tailings from between Liddell Mine, the Mount Owen Complex (MOC), and Ravensworth Operations. GRAWTS Stage 2 will require the Liddell Mine, MOC, and Ravensworth Operations to modify their respective planning approvals to facilitate Stage 2 of the GRAWTS.

Development consent for the Modification is sought under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Background research regarding the study area indicated that there were no previously recorded sites within the study area for the Modification. It was also apparent that the northern half of the study area is former mining areas, now progressively being rehabilitated. This meant that survey only took place over the southern half of the study area in an area defined as the Survey Boundary.

Consultation for the Modification has followed the *Aboriginal cultural heritage consultation requirements for proponents* that were initiated in April 2021. As well as placing an advertisement in the *Singleton Argus*, relevant agencies, such as Heritage NSW, were contacted to identify the Registered Aboriginal Parties (RAPs) for the Modification. A draft assessment methodology was sent to all RAPs on 25 May 2021 with a closing date for any comments of 27 July 2021. Following consideration of the RAP feedback, survey of the Survey Boundary took place on Friday 9 July 2021.

The survey noted that the landforms of the Survey Boundary are generally disturbed. As will be noted, in the 1980s the northern portions of the Survey Boundary were close to active open cut mining and aerial imagery shows various ground disturbances in the north of the Survey Boundary. In the south, the landform consists of a broad, sloping ridge with outcropping stone and sloping landforms with a moderate gradient towards the southern extent of the Survey Boundary. There are no waterways within the Survey Boundary.

The survey did not record any Aboriginal objects, and because of the type of landforms and the previous disturbance, it was assessed that there is a low likelihood of subsurface archaeological deposits within the Survey Boundary.

As Aboriginal objects will not be harmed, there are no further requirements for archaeological investigation.

Regarding the Modification, the following recommendations are made:

1. This ACHAR concludes that no Aboriginal cultural heritage values or objects will be harmed by the Modification. Therefore, no specific management measures to conserve Aboriginal objects are required.
2. The MOC *Aboriginal Cultural Heritage Management Plan* (ACHMP) will be updated following approval of the Modification to include management procedures aimed at conserving Aboriginal cultural heritage values at the MOC and within the Modification study area.
3. The protocols related to the discovery of any new Aboriginal sites contained in Sections 6.2.1 of the MOC ACHMP are deemed sufficient to cover this eventuality and will be implemented for the Modification.

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1 INTRODUCTION

1.1 DESCRIPTION OF THE MODIFICATION

OzArk Environment & Heritage (OzArk) has been engaged by James Bailey & Associates on behalf of Glencore Coal Assets Australia (the proponent) to prepare an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) for the proposed Stage 2 of the Greater Ravensworth Area Water and Tailings Scheme (GRAWTS) (the Modification).

The Modification is in the Greater Ravensworth area within the Singleton Local Government Area (LGA) (**Figure 1-1**).

Figure 1-1: Aerial showing the location of the Modification.

1.2 BACKGROUND

Liddell Mine, Mount Owen Complex (MOC) and Ravensworth Operations are neighbouring coal mining developments located in the Upper Hunter region of New South Wales. These mines are located within a mining precinct known as the Greater Ravensworth Area (GRA).

Liddell Mine is managed by Liddell Coal Operations Pty Limited (LCOPL) in accordance with Development Consent DA 305-11-01, which allows mining operations to take place until 31 December 2028.

MOC is managed by Mt Owen Pty Limited (MOPL) in accordance with Development Consent SSD-5850 which enables mining activities to be conducted until 31 December 2037.

Ravensworth Operations is managed by Ravensworth Operations Pty Ltd (ROPL) in accordance with Project Approval PA 09_0176, which enables mining to be undertaken until 31 December 2039.

There are synergies between the GRA operations including a network of water and tailings management infrastructure referred to as the GRAWTS. The GRAWTS enables the transfer of water and tailings from between Liddell Mine, MOC and Ravensworth Operations.

MOPL, LCOPL and ROPL propose to modify their respective planning approvals to facilitate Stage 2 of the GRAWTS. The proposed Modification includes the following activities:

- Transfer of tailings from Ravensworth Operations and MOC to Liddell Mine for emplacement within the Liddell South Cut Void
- Continued transfer of tailings from Ravensworth Operations and Liddell Mine to the West Pit Void at MOC (i.e. removing the timeframe limitation on the transfers approved in Stage 1)
- Changes to the conceptual final landform for the Liddell Mine to reflect the emplacement of additional tailings in the Liddell South Cut Void and a strategy to offset the final voids from one another to enhance the stability of the Main Northern Rail Line
- Construction and use of minor ancillary infrastructure including:
    - An end-of-pipe flocculation plant and associated power supply in the vicinity of the Liddell South Cut Void
    - A water reticulation staging station near the Liddell South Cut Void to supply water to the flocculation plant and other infrastructure within the GRAWTS
    - Additional tailings and water management infrastructure between the Liddell South Cut Void and Liddell Entrance Pit Void
    - Realignment of a short section of the existing tailings and water pipelines from the Mt Owen Coal Handling and Preparation Plant to the Liddell voids (South Cut Void and Entrance Pit Void)
    - Additional powerlines, access roads and other minor supporting infrastructure.
- Receipt of tailings from other mining operations in the vicinity of the GRA and emplacement of such tailings within the Liddell South Cut Void (subject to those mining operations obtaining approval to transfer tailings to Liddell)
- Transfer of water between mining operations in the vicinity of GRA (subject to those other mining operations obtaining approval to send and receive water).

The Modification is sought pursuant to Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.3 PROPOSED WORK

The proposed ancillary infrastructure associated with the Modification will be located within areas that are approved for disturbance, except for the pipelines from the Mt Owen coal handling and preparation plant to the Liddell voids. This Aboriginal cultural heritage assessment considers the impacts of the additional disturbance required for the realignment of these pipelines.

1.4 STUDY AREA

The study area represents the area in which ground disturbance impacts associated with the Modification will occur (**Figure 1-2**). A large portion of the study area is within landforms previously modified by approved mining activity and where no archaeological potential remains (**Figure 1-3**). These areas do not require further survey. Only a portion in the south of the study area is in largely unmodified landforms and requires assessment. This area will be referred to as the Survey Boundary.

1.5 SURVEY BOUNDARY

The Survey Boundary describes the unmodified landforms within the study area in which the impacts associated with the Modification will be located (**Figure 1-2**). The Survey Boundary is located approximately 5.5 kilometres (km) east of Lake Liddell, 2.5 km north of the New England Highway and 200 metres (m) west of Hebden Road.

The Survey Boundary covers an area of approximately 500 m x 100 m (five hectares [ha]).

This document sets out the methodology to be used to identify Aboriginal cultural values, both tangible and intangible, that exist in the Survey Boundary.

Figure 1-2: Aerial showing the relationship between the study area and the Survey Boundary.

Figure 1-3: The study area and the Survey Boundary superimposed on a 1987 aerial.

2 THE ARCHAEOLOGICAL ASSESSMENT

2.1 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk on the Friday 9 July 2021.

2.2 OZARK INVOLVEMENT

2.2.1 Field assessment

The fieldwork component of the heritage assessment was undertaken by:

- Fieldwork Director: Ben Churcher (OzArk Principal Archaeologist [BAHons, Dip Ed]).

2.2.2 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report Author: Ben Churcher
- Reviewer: Dr Jodie Benton (OzArk Director).

2.3 RELEVANT LEGISLATION

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

2.3.1 State legislation

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

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- Part 4: Local government development assessments, including heritage. May include schedules of heritage items
    - 4.55: Modification of consents: approvals for Modifications involving minimal environmental impact.

National Parks and Wildlife Act 1974 (NPW Act)

The NPW Act provides for the protection of Aboriginal objects (sites, objects, and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act;
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object; or
- The harm to the Aboriginal object occurred during the undertaking of a 'low impact activity' (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Secretary of the Department of Planning, Industry and Environment (DPIE) of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS) that is administered by Heritage NSW.

2.3.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act, administered by the Commonwealth Department of Agriculture, Water and the Environment, provides a framework to protect nationally significant flora, fauna, ecological communities, and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to national/commonwealth heritage places.

Other

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) is aimed at the protection from injury and desecration of areas and objects that are of significance to Aboriginal Australians. This legislation has usually been invoked in emergency and conflicted situations.

2.3.3 Applicability to the Modification

The Modification will be assessed under Part 4.55 of the EP&A Act.

Any Aboriginal sites within the study area are afforded legislative protection under the NPW Act.

The study area is part of a broader Application under section 10 of the ATSIHP Act made by some members of the Plains Clans of the Wonnarua People (PCWP). In part, this Application relates to PCWP's concerns regarding colonial frontier violence and claims of a massacre of Aboriginal people. There is no evidence that incidents associated with these concerns occurred at the study area.

It is noted there are no Commonwealth or National heritage listed places within the study area, and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

2.4 ASSESSMENT APPROACH

The current assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010).

Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (the Guide, OEH 2011).

2.5 PURPOSE AND OBJECTIVES

The purpose of the current study is to identify and assess heritage constraints relevant to the proposed works.

2.5.1 Aboriginal cultural heritage assessment objectives

The current assessment will apply the Code of Practice and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs) (DECCW 2010b) in the completion of an Aboriginal cultural heritage assessment to meet the following objectives:

Objective One: Undertake background research on the study area to formulate a predicative model for site location within the study area

Objective Two: Identify and record Aboriginal cultural heritage values within the survey areas. This includes intangible cultural values, Aboriginal objects, and any landforms likely to contain further archaeological deposits

Objective Three: Assess the likely impacts of the proposed work to Aboriginal cultural heritage values and provide management recommendations.

2.6 REPORT COMPLIANCE WITH THE CODE OF PRACTICE

The Code of Practice establishes requirements that should be followed by all archaeological investigations where harm to Aboriginal objects may be possible. **Table 2-1** tabulates the compliance of this report with the requirements established by the Code of Practice.

Table 2-1: Report compliance with the Code of Practice.

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1	Review previous archaeological work	*See subsections below*
Requirement 1a	Previous archaeological work	**Section 6.4** and **6.5**
Requirement 1b	AHIMS searches	**Section 6.5** and **Appendix 4**
Requirement 2	Review the landscape context	**Section 5**
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	**Section 6.6**
Requirement 4	Predict the nature and distribution of evidence	*See subsections below*
Requirement 4a	Predictive model	**Section 6.7**
Requirement 4b	Predictive model results	**Section 6.8**
Requirement 5	Archaeological survey	*See subsections below*
Requirement 5a	Survey sampling strategy	**Section 7.1** and **Appendix 3**
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	**Section 5.1.1**
Requirement 6	Site definition	**Section 6.8**
Requirement 7	Site recording	*See subsections below*
Requirement 7a	Information to be recorded	Not applicable to this report as no new sites were recorded.
Requirement 7b	Scales for photography	All artefact photographs employed a centimetre scale bar.
Requirement 8	Location information and geographic reporting	*See subsections below*
Requirement 8a	Geospatial information	All artefact locations were logged using a non-differential handheld GPS.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 56.
Requirement 9	Record survey coverage data	**Figure 7-1**
Requirement 10	Analyse survey coverage	**Section 7.3**
Requirement 11	Archaeological Report content and format	This report adheres to this Requirement.
Requirement 12	Records	OzArk undertakes to maintain all survey records for at least five years.
Requirement 13	Notifying OEH and reporting	*See subsections below*

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 13a	Notification of breaches	Not applicable
Requirement 13b	Provision of information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	The test excavation did not take place in any of the landforms identified in Requirement 14.
Requirement 15	Pre-conditions to carrying out test excavation	*See subsections below*
Requirement 15a	Consultation	Consultation has included the ACHCRs, see **Section 3**.
Requirement 15b	Test excavation sampling strategy	Not applicable
Requirement 15c	Notification	Not applicable
Requirement 16	Test excavation that can be carried out in accordance with this Code	*See subsections below*
Requirement 16a	Test excavations	Not applicable
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable

3 ABORIGINAL COMMUNITY CONSULTATION

3.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal cultural heritage assessment of the Modification has followed the ACHCRs (DECCW 2010b). A log and copies of correspondence with Aboriginal community stakeholders is presented in **Appendix 1**.

The ACHCRs include four main stages, and these will be detailed in the following sections.

3.1.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the Registered Aboriginal Parties (RAPs) who wish to be consulted about the Modification.

Consultation for the Modification has followed the guidelines established in the ACHCRs (DECCW 2010b) whereby an advertisement was placed in the local press and relevant agencies were contacted to ascertain if they were aware of groups or individuals who may have cultural knowledge of the region containing the Modification.

On 22 April 2021 an advertisement was placed in the *Singleton Argus* inviting expressions of interest in being consulted about the Modification (**Appendix 2 Figure 1**). In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Wanaruah Local Aboriginal Land Council (LALC); the Office of The Registrar, *Aboriginal Land Rights Act 1983*; the National Native Title Tribunal; Native Title Services (NTSCORP); Singleton Shire Council; and the Hunter Local Land Services (**Appendix 2 Figure 2**). Letters were sent to all groups and individuals who had been identified through this process enquiring whether they wished to be consulted about the Modification (**Appendix 2 Figure 3**).

As a result, the following individuals/groups registered to be consulted about the Modification (two individuals/groups asked that their names not be made public and will be referred to as Stakeholder 1 and Stakeholder 2):

- Wanaruah Local Aboriginal Land Council
- Didge Ngunawal Clan
- Tocomwall Pty Ltd
- Widescope Indigenous Group Pty Ltd
- AGA Services
- Cacatua Culture Consultants
- Kawul Pty Ltd (trading as Wonn1 Sites)
- Culturally Aware

- Hunter Traditional Owner
- Wattaka Wonnarua C.C. Service
- Aboriginal Native Title Consultants
- Gomery
- A1 Indigenous Services
- Upper Hunter Wonnarua Council Inc
- Stakeholder 1
- Stakeholder 2.

These individuals/groups constitute the RAPs for the Modification.

3.1.2 ACHCRs Stages 2 & 3

The aim of Stages 2 and 3 is provide information about the Modification to the RAPs and to acquire information regarding Aboriginal cultural values associated with the Modification either through consultation and/or field work. Often these two stages are run together, and the detailed project information is provided in the assessment methodology that is issued to all RAPs for their consideration.

To provide information about the Modification (Stage 2) and to set out the assessment aims of Stage 3, a draft of the assessment methodology was sent to all RAPs on 25 May 2021 with a closing date for any comments of 27 July 2021 (**Appendix 3**, **Appendix 3 Figure 1**). During this time, responses were received from AGA Services and Cacatua Culture Consultants. Both responses stated: *After a discussion with regards to all its contents both Cacatua and AGA support the documentation the was sent with regards to the Subject.*

The assessment methodology is presented as **Appendix 3**.

3.1.3 ACHCRs Stage 4

Stage 4 involves the production of a draft ACHAR that is issued to all RAPs for their consideration. The ACHAR will document the results of the assessment, outline opportunities for the conservation of Aboriginal cultural values, and suggest recommendations for the management of Aboriginal objects should impacts to these objects be unavoidable.

A draft ACHAR was sent to all RAPs on 12 January 2022 with a closing date for comment of 10 February 2022.

As of 11 February 2022, no comments were received from RAPs that required a specific response or changes to this ACHAR.

3.2 ABORIGINAL COMMUNITY INVOLVEMENT IN THE ASSESSMENT

Culturally Aware (Tracey Skene) was contacted to attend the field survey and informed OzArk that Sue Cutmore would attend. Culturally Aware were informed on 28 June 2021 that the survey would be delayed by one week due to COVID 19 restrictions. Culturally Aware were contracted through the week prior to the survey and on 8 July 2021 informed Ben Churcher that neither Tracey Skene nor Sue Cutmore would be able to attend the survey scheduled for the next day. Ben Churcher undertook the survey on 9 July 2021 without any RAP attendees.

4 CULTURAL HERITAGE VALUES

4.1 INTRODUCTION TO CULTURAL VALUES

No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups. Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

Living on this land for more than 60,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area, as well as cultural and spiritual values like totemism that were fundamental in resource management. There was a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

In much of eastern Australia, Aboriginal communities live their lives like most Australians without resorting to tribal lore. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

4.2 IDENTIFYING CULTURAL VALUES

A major aim of this assessment is to identify any cultural values within the landscape in which the Modification is located so that those values can be recognised and incorporated into the Modification's management recommendations.

4.2.1 Cultural values identified throughout the ACHCR process

No specific cultural values were identified by the RAPs regarding the study area, however, the strong cultural values of Aboriginal communities towards landscapes and cultural heritage sites are recognised.

Recent assessment associated with the adjacent Glendell North Continued Operations Project (GCOP) conducted community consultation to support an Environmental Impact Assessment (EIS). As a result of this consultation, ACHM 2019 conclude:

> *Alongside a previous ACHAR over the wider Project area (the Mount Owen Continued Operations Project ACHAR), this ACHAR has reaffirmed that there are no traditional cultural values associated with the Project Area (directly and specifically) held by the participants in this ACHAR process.*
>
> *By 'traditional' cultural values, we refer to these in the Native Title sense as an inherited and cohesive body of 'traditional' knowledge, laws and customs that are still observed and maintained by a particular Indigenous group. However, in common with many urbanised communities, strong contemporary cultural values exist in almost universal claims of 'connection' to the land in question, and a sense of anguish and/or anger at having been 'disconnected' from the land in question by historical circumstances. In this case, the RAPs also expressed a potential for there to have been connections through time with the Ravensworth Homestead complex, however none of the RAPs had any direct knowledge of any of their ancestors having a direct association with the property.*
>
> *It is the opinion of the author that the Project Area has undergone considerable modification since European settlement. Traditional Aboriginal lifeways and customs began to disappear in the early days of contact with Europeans and had largely disappeared before the turn of the 19th Century. Much of the natural landscape no longer exists in any cohesive manner, as the long history of agriculture in the area has irreversibly altered the landscape. Combining the historical disconnection of people from place with the extensive landscape modification since settlement means that the Project Area has a relatively low cultural significance when compared to other places within the wider region. This is also consistent with the archaeological assessment, which has determined that most of the archaeological sites are of low to moderate scientific significance.*

In contrast, the Application under section 10 of the ATSIHP Act made by some members of the PCWP, states that, in the PCWP view, the region of the study area:

- Represents an area where the conflicts occurred during the early colonisation of the Hunter Valley, including how it contains a landscape of an open massacre of the Wonnarua people
- Represents [an] area where ceremonies were carried out by the Wonnarua people and is thus "sacred to our people", including "several places" used for rituals associated with "bora" (male initiation) ceremonies or with "women's business ceremonies"
- It is a spiritual place to the PCWP that must be protected so we can pass on to our children (future generations) for an understanding of our people's practices of the past.

These cultural values are not widely held outside of the PCWP, and while some tangible places associated with ceremony are known in the wider Hunter Valley, there are no identified cultural places within or near the study area.

5 LANDSCAPE CONTEXT

An understanding of the environmental contexts of a study area is requisite in any Aboriginal archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as humanly activated landscape processes, influence the degree to which these material culture remains are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

5.1 TOPOGRAPHY

The Survey Boundary is located wholly within the Hunter Subregion of the Sydney Basin Bioregion (SBB). The Hunter subregion is situated at the far north of the SBB and contains the townships of Scone, Muswellbrook, Singleton, Cessnock, Maitland, and the city of Newcastle. The Hunter subregion is predominantly comprised of rolling hills, wide valleys, and the meandering system of the Hunter River on a wide floodplain. A wide range of environments are present within the greater subregion including coastal, dune, estuarine, rainforest, plateau, lowland, riparian, and swamp ecosystems; not all of which are represented in the Survey Boundary. The Hunter subregion encompasses the catchments of the Goulburn, Hunter, and Paterson Rivers (NPWS 2003).

The Survey Boundary is undulating and generally level in the north (**Figure 5-1**: photo 1) and sloping in the south (**Figure 5-1**: photo 2).

Figure 5-1: Topography of the Survey Boundary.

1. View of the northern portion looking south within the Survey Boundary.

2. View of the southern portion looking north within the Survey Boundary.

5.1.1 Survey units

Based on the topography of the Survey Boundary, survey units were identified to capture the major topographical features of the Survey Boundary. The designation of survey units will allow a comparison of the archaeological potential of each major topographical feature within the Survey Boundary to understand whether certain landform types are more likely to contain Aboriginal objects than others.

The two defined survey units within the Survey Boundary are:

- Survey Unit 1: Undulating, generally flat landforms. Terminates in the south at a shallow escarpment of exposed sandstone bedrock (**Figure 5-1**: photo 1)
- Survey Unit 2: Sloping landforms with a moderate gradient (**Figure 5-1**: photo 2).

Figure 5-2: Aerial of the Survey Boundary showing the location of survey units.

5.2 GEOLOGY AND SOILS

The study area is located within the Mitchell landscape context, Central Hunter Foothills. This landscape comprises of undulating lowlands, rounded to steep hills with rock outcrop on ridges. Soils generally consist of red-brown to yellow-brown harsh texture contrast soils on slopes, dark coloured clays in valleys, and limited accumulations of sand and gravel in streams.

At the boundary between Survey Units 1 and 2 is a shallow escarpment created by a band of exposed sandstone (**Figure 5-3**). The escarpment is not high enough to form rock shelters.

Figure 5-3: Geology of the Survey Boundary.

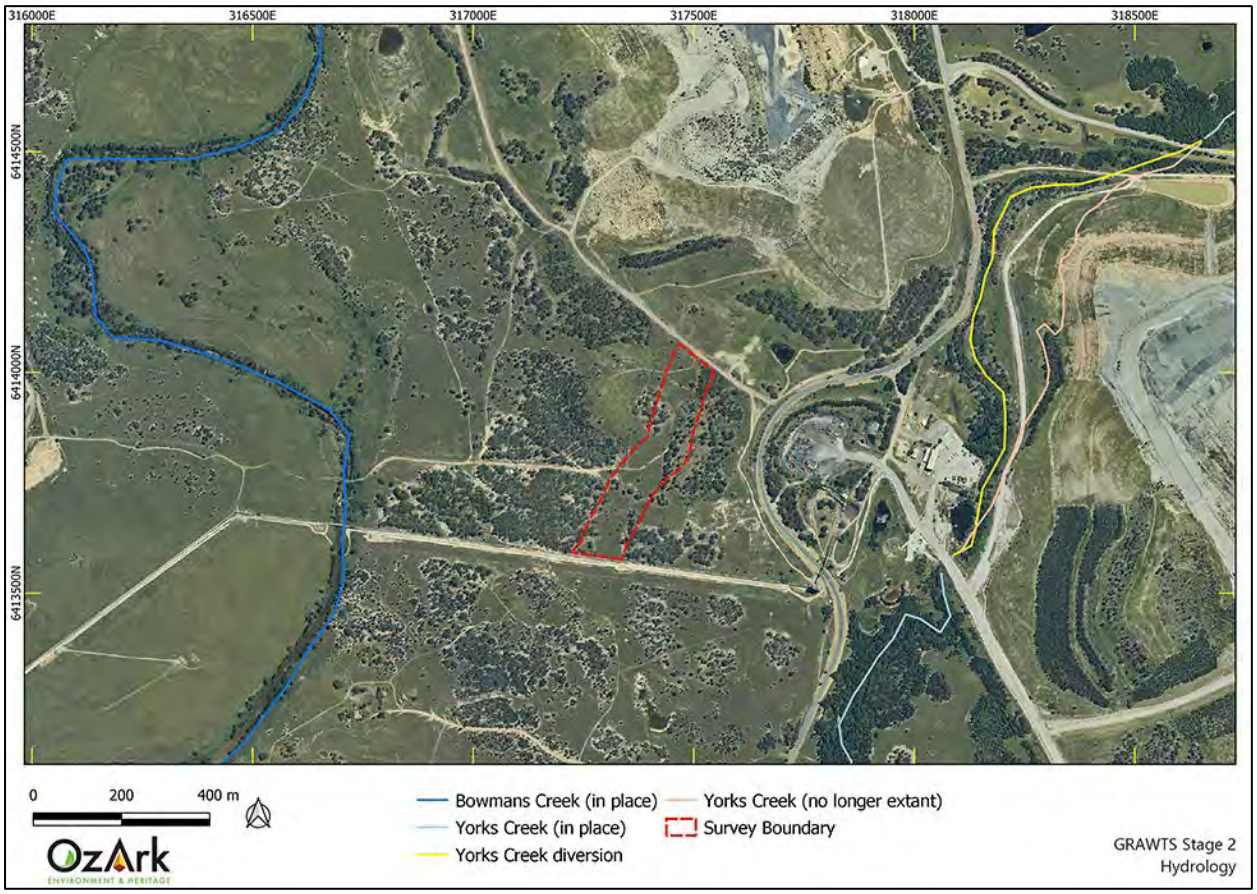
	
1. View of the exposed band of sandstone within the Survey Boundary.	2. View of the exposed band of sandstone within the Survey Boundary.

5.3 HYDROLOGY

No watercourses intersect the study area, however, there are several nearby. The closest major watercourse is Bowmans Creek, located roughly 560 m west of the study area while Yorks Creek, a minor watercourse, would have been located approximately 185 m east of the study area, although this portion of the creek has been artificially diverted closer to the study area and is now within modified landforms without archaeological potential (**Figure 5-4**).

In NSW there is a strong correlation between the location of Aboriginal sites and the distance to water. The general proximity of watercourses to the study area suggests a heightened potential to reveal archaeological sites, however, as none of the waterways are within the study area, the archaeological sensitivity is diminished slightly.

Figure 5-4: Hydrology of the Survey Boundary.



5.4 FLORA AND FAUNA

Vegetation prior to colonial intervention largely consisted of woodlands to open forests of Eucalypts and Kangaroo Grass. One or more of four eucalypt tree species usually dominate the canopy. Typically the woodland had a sparse mid layer of native flowering shrubs and a ground layer of grasses, daisies, lilies, orchids, and other flowers. Many of these species would have been used by traditional Aboriginal people for both food and medicine.

The Hunter Valley woodlands provide vital habitat for 11 nationally threatened animal species, such as the regent honeyeater, painted honeyeater, brush tailed rock wallaby and spotted-tail quoll, as well as being a refuge for locally rare species such as the speckled warbler. More common species such as echidna and kangaroo would have been locally abundant.

Currently, the primary vegetation of the Survey Boundary includes mostly derived native grassland paddocks with small pockets of open regrowth eucalypt woodland (**Figure 5-5**).

Figure 5-5: Vegetation of the Survey Boundary.

	
1. View of the planted vegetation (trees to right), grass and weeds within the Survey Boundary.	2. View of the regenerating woodland within the Survey Boundary.

5.5 CLIMATE

The nearest Bureau of Meteorology (BoM) record station to the Survey Boundary is situated at the Singleton STP location (BoM 2021). Climate statistics from the Singleton STP indicate that the region experiences a mostly temperate climate with temperatures above zero during the cooler months. The climate statistics show that the highest mean monthly temperatures are in January (32.1°C) and the lowest mean monthly temperatures are in July and August (4.3°C). Rainfall is greatest in February (mean rainfall: 85.6 millimetres [mm]) and the lowest in July (mean rainfall: 23.9 mm). The annual average rainfall is 657.6 mm.

As such, the climate of the region would not have offered any obstacles to past Aboriginal occupation.

5.6 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Several types of impacts that have occurred to the landforms within the Survey Boundary because of European farming practices. These include:

- Extensive clearing of native vegetation. All the Survey Boundary has been cleared, although trees are starting to regenerate. This would suggest that certain site types, such as scarred trees, will be extremely rare within the Survey Boundary. In addition, extensive clearing will have encouraged downslope movement of soils. As the Survey Boundary is generally sloping from north to south, this would indicate that soils, as well as the artefacts that may have been within them, have accumulated in the southern portions of the Survey Boundary.
- Soil movement. As noted above, landforms within Survey Boundary are within degrading environments. The archaeological implications are that sites in degrading environments may have been displaced or destroyed, while former soil levels at the base of the slope

in the south may be buried or contain artefacts that have accumulated in these more low-lying areas.

- Erosion. Within the Survey Boundary slope wash would be prevalent in high rainfall events although the erosion is not so extensive to form scalds. This erosion may move artefacts downslope.

More recently, approved coal mining activities, has been the major source of impact within the landscape. Coal mining activities have resulted in the modification of portions of Yorks Creek, and the transformation of landforms in the north of the study area. As can be seen on **Figure 1-3**, disturbance from mine related activities, such as tracks and a laydown area, have impacted the north of the Survey Boundary.

In summary, the impact of European farming practices within the Survey Boundary has led to a significant modification of the pre-1788 environment. This includes a marked change in vegetation cover and increased erosion. The impact of these disturbances on the archaeological record is profound and any archaeological investigations of areas such as the Survey Boundary are inevitably examining a depleted and disrupted archaeological landscape.

5.7 CONCLUSION

Review of the environmental landscape of the Survey Boundary and surrounding landforms presents a landscape that has been extensively disturbed and modified, primarily because of agricultural practices and associated approved mining activity.

In the past, the presence of semi-permanent watercourses, such as Bowmans Creek and its tributaries, would have provided resources to enable short-term occupation in landforms near the Survey Boundary. However, due to the naturally occurring high salinity of the watercourses within the region, occupation was probably more restricted along this watercourse when compared to areas closer to the Hunter River.

As all watercourses near the Survey Boundary have a relatively restricted catchment, the indication is that these systems would have only supported sporadic and short-term visitation. While it is accepted that some of these systems may have had a Chain of Ponds morphology prior to their modification following colonial settlement, it is suspected that these ponds would not have been extensive enough to encourage long-term occupation.

Extensive clearing of the Survey Boundary has likely removed any culturally modified trees, disturbed significant portions of the landscape, and translocated much of the archaeological material record into a secondary context. Erosion, however, will also mean that larger sites, while disturbed, will be more visible and more likely to be recorded.

6 ARCHAEOLOGICAL CONTEXT

6.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

The study area is in the Wonnarua tribal area of the upper Hunter Valley (Tindale 1974).

The Wonnarua people lived in an environment rich in food resources. Freshwater fish, shellfish, reptiles, mammals, birds, and plant food provided a diverse diet (see Brayshaw 1981). Brayshaw (1986: 82) suggests that inland groups visited the coast during the summer when marine resources were plentiful, and coastal groups travelled inland to participate in the winter kangaroo hunts. Trade and/or exchange also occurred between the coastal and inland groups. Reed spears and shells were traded inland for possum skin rugs and fur cord (Brayshaw 1986: 41).

The only known ethnographic information on the use of stone artefacts relates to the use of stone hatchets as multi-purpose tools and of the attachment of quartz flakes as barbs on spears (Brayshaw 1986: 66, 68). There is also little ethnographic evidence concerning the locations of regional Aboriginal camping places, however, the factors of proximity to fresh water and of elevation for visibility are mentioned as important considerations (Fawcett 1898).

6.2 COLONIAL OCCUPATION

Due to its proximity to Sydney, its nutrient rich alluvial soils, grazing pastures for livestock and cedar trees on the higher terraces of the valley, the Hunter Valley was a desirable location for early colonial settlement. Within a short timeframe, the Aboriginal people of the area had to deal with the depletion of their resources and major changes to the environment caused by ill-informed colonial farming practices.

The early colonial settlers observed valleys of grassland and rich alluvial soils adjacent to the major waterways that were ideal for agriculture and cattle/sheep grazing, and soon the prime land was occupied. But the allure of the area continued and as more colonists settled in the Hunter Valley the more marginal hill slopes were occupied and cleared of standing timber.

As noted by Tocomwall (2017: 35):

> *By 1825 more land was owned by the new settlers and the original Aboriginal inhabitants became increasingly disenfranchised from their traditional lands. The invasion by the European settlers changed the distribution of vegetation, with increasing landscape instability as a result of the logging of the forested areas around the higher elevations and the clearing of the brush around the understorey and along the tributaries for agriculture and pastoral farming. Aboriginal dependence of the Hunter River for many staples meant that the Wonnarua suffered severely when the Europeans settled: they immediately lost access to water and the raw materials in the river and on the banks. They also lost their game to the intruders who chased kangaroos in hunts to reduce competition for their introduced grazing animals;*

> *shellfish and fish populations also declined. Breton (1833) wrote that he only noted 16 kangaroos, in contrast to a previous visit to the area when they had numbered in the hundreds. The loss of fish for protein and the loss of managed plains for game hunting and seed gathering destroyed long established hunting and gathering practices of the Aboriginal community. This exclusion and alteration of the landscape by the Europeans brought them into conflict with the local Wonnarua People.*

Conflict between the Wonnarua and colonial settlers is documented in the wider region of the study area. AHIMS site 37-3-0390 (Upper Hunter Valley Massacre Site) is located on the western side of the New England Highway approximately 4.5 km south of the study area. This site recording registers the historic account of the murder of 18 Aboriginal people in 1827, however, primary source historic information has this event occurring in September 1826. While the exact location of this massacre may now be extremely difficult to pin-point, the historical accounts show that the wide-spread frontier war that accompanied the first colonial settlement of Aboriginal lands across Australia (i.e. Gapps 2018), also occurred in the Hunter Valley.

Further details on the history of early colonial settlement of the Hunter Valley have been extensively researched by Dr Mark Dunn (Dunn 2020).

6.3 ARCHAEOLOGICAL CHARACTERISTICS OF THE REGION

Evidence from the Central Lowlands sub-region of the Hunter Valley (broadly between Murrurundi in the north and Cessnock in the southeast), suggests that archaeological material is scattered almost continuously, but in varying density, along most creek banks and flats. It has been suggested that archaeological material is primarily contained in a corridor approximately 100 m wide on either side of a creek channel (Koettig 1990: 13).

In broad terms, these open artefact scatters appear to be confined to the A-Horizon of the soil (topsoil) profile which is generally less than 50 centimetres (cm) in depth (Hughes 1981; Stern 1981). These sites are often disturbed, and stratification is unclear (Hughes 1984: 8). Artefacts are generally manufactured from indurated mudstone, sometimes called tuff, and silcrete, with quartz, petrified wood, and chert occurring less frequently (Hiscock and Koettig 1985). Features found at open surface scatters include hearths, pits, ovens, and heat treatment areas (Burton et al. 1990). These sites are generally detected where some form of ground disturbance has occurred, for example erosion due to both cultural and non-cultural processes, and thus the extent of the site is often difficult to determine. Often the density of artefacts on the surface do not relate to the amount of subsurface archaeological material (see Koettig 1990: 15).

Archaeological excavations have so far determined that human occupation of the Hunter Valley has occurred since the last Glacial Maximum approximately 27,000–17,000 years before present (HLA 2005). It is hypothesised that evidence predating this period will likely be discovered in the future.

A review of GHD (2005), HLA (2005) and Umwelt (2007) provides the following regional synthesis:

- Archaeological sites, even where surface evidence is not present, occur on most landforms. This was confirmed by an HLA-Envirosciences (2005) excavation program, in which Aboriginal sites were encountered on alluvial terraces, flats, slopes, bench areas, spurs, and ridgelines. HLA-Envirosciences acknowledges that the sample areas were biased somewhat as they were all near creek lines
- Site frequency and density are dependent on their location in the landscape. This theme is consistent throughout NSW and is influenced by a range of factors, the most relevant of which the existing level of disturbance. More specifically, the potential for undisturbed in situ deposits remaining in the upper Hunter Valley on a mining property is generally low
- The highest concentration of Aboriginal sites on the floor of the Hunter Valley is associated with creeks and other watercourses
- Few scarred trees are recorded reflecting the high degree of tree clearing in the region
- The most frequently recorded raw material is indurated mudstone (tuff) (a fine gained siliceous material) associated with Hunter River gravels. Other frequently recorded materials include locally sourced silcrete, quartz, and volcanic stones
- Assemblages recorded in the region consist largely of unmodified flakes with few formed tools. Backed blades comprise the characteristic diagnostic artefact in the region. The mid- to late-Holocene appears to have witnessed this move to smaller tools, perhaps as an impetus to conserve raw material during tool manufacture or due to new functionality requirements.

6.4 REGIONAL ARCHAEOLOGICAL CONTEXT

A very large amount of archaeological assessment has been undertaken in the Hunter Valley and a comprehensive review of this is beyond the scope of this investigation. Consequently, only a brief local archaeological context that focuses on recent work near the Survey Boundary is provided below.

Umwelt 2001: Aboriginal Archaeological Assessment Liddell Colliery Continued Operations

Umwelt (2001) completed an archaeological survey of 1,374 ha for the continuation of open cut mining at the Liddell Mine, on the western side of Bowmans Creek. Twelve isolated finds and 25 artefact scatters were recorded during the survey. The survey found that the most extensive sites were recorded along the major drainage lines of Bayswater Creek, Chain of Ponds and Bowmans Creek, and their tributaries. Most sites were located on drainage depressions, stream channel banks, and/or their associated flats.

Indurated mudstone was the dominant raw material (58%), followed by silcrete (31%). Other materials represented in lower numbers included quartz, chert, volcanics, petrified wood, hornfels, quartzite, river pebble, chalcedony, sandstone, and siltstone.

OzArk 2013: Aboriginal and Historic Heritage Assessment, Liddell Coal Operations, Modification 5 to Development Consent DA 305-11-01

OzArk's assessment of the Development Modification 5 at Liddell Coal Operations (2013) is located west of the study area. New recordings were made and the findings from the assessment indicated a strong association between sites and watercourses such as Bowmans Creek and Chain of Ponds. There were, however, a number of sites on ridge lines and slopes, on the western side of Bowmans Creek. Sites in this type of landscape were either low density artefact scatters or isolated finds with little or no subsurface deposit.

OzArk 2015: Aboriginal Due Diligence Archaeological Assessment: Greater Ravensworth Tailings Pipeline

The OzArk assessment included areas to the immediate south of the study area. While the overall assessment recorded no Aboriginal sites, several areas of archaeological sensitivity were recorded near Bowmans Creek in relatively undisturbed areas. The closest sensitive area to the study area, Sensitive Area 2, is a 100 m to 150 m area to the east of Bowmans Creek, on a roughly level area on the mid-slope of a hill. Sensitive Area 2 is bound on the north by an ephemeral watercourse and to the south by the fence line that marked the southern edge of the 2015 study area. The eastern and western extents are defined by the break of slope uphill and downhill. While this area was avoided by works associated with the Greater Ravensworth Tailings Pipeline and has been fenced, no Aboriginal objects were recorded, and the area is not registered on the Aboriginal Heritage Information Management System (AHIMS). At its closest, Sensitive Area 2 is approximately 330 m west of the Survey Boundary.

OzArk 2019: Aboriginal Archaeology Impact Assessment. Glendell Continued Operations Project

The fieldwork component of this assessment consisted of survey and test excavation undertaken by OzArk, RAPs, and Wonnarua Knowledge Holders over the course of several weeks in April, May, and September 2018. The 2019 OzArk study area was adjacent to but not within the southern portions of the Survey Boundary.

Sixty-nine previously unrecorded sites were recorded during the survey consisting of 39 artefact scatters, 29 isolated finds, and one scarred tree. Of the artefact scatters, 32 sites recorded less than 10 artefacts and no site contained more than 70 artefacts. At nine locations it was assessed that there are subsurface deposits. None of the recorded sites were remarkable in their manifestation; either in terms of the types of artefacts recorded, the raw material the artefacts were manufactured from, or the density and nature of the surface artefact manifestation.

The test excavation program involved excavation of 152 excavation squares (0.5 m x 0.5 m) at 12 separate localities: a total of 38 square metres. From this area of excavation, 180 artefacts were recovered: an average of 4.7 artefacts per square metre or 1.18 artefacts per excavation square. This density of artefacts was noted as being extremely low, and only two excavation

squares recorded more than 15 artefacts. Most of the squares had what can be described as a very truncated A1-Horizon and a leached A2-Horizon, and the implication drawn was that the landscape has been subject to the stripping of the A1-Horizon and the exposure of the A2-Horizon. The implicit conclusion is, therefore, that the landscape has undergone a high general disturbance from soil loss that has compromised the archaeological deposits across the GCOP study area. As such, the general condition of the archaeological landscape within the general area was assessed to be poor.

No evidence of colonial conflict or skeletal remains was identified during the survey or test excavation programs for the GCOP. As such, nothing in the OzArk 2019 archaeological assessment was able to corroborate or extend the scant information the written sources provide regarding colonial conflict in the area.

6.5 LOCAL ARCHAEOLOGICAL CONTEXT

6.5.1 Desktop database searches conducted

A search of the AHIMS database on 17 May 2021 returned 58 results for Aboriginal sites within a 2 km radius of the Survey Boundary (GDA Zone 56 Eastings: 315790–319090; Northings: 6412290–6415610 with no buffer) (see **Table 6-1** for site types and frequencies and **Figure 6-1** for the location of sites in relation to the Survey Boundary). No AHIMS sites are located within the Survey Boundary (**Appendix 4**).

The distribution of AHIMS sites shows that most AHIMS sites are associated with watercourses, and while low density artefact sites can be recorded in any landform, potential archaeological deposits (PADs) and modified trees are all closely associated with watercourses. The most frequently recorded site type is artefact scatters (94.8% of site types inclusive of sites listed as containing both surface artefacts and PAD). These also represent the site types of the four sites closest to the Survey Boundary. The next most frequent site type is areas of PAD (12%). Four such sites are located between 585 m and 930 m southwest of the Survey Boundary, along Bowmans Creek. The only other site type near the Survey Boundary is modified trees, and one modified tree site is located approximately 1.6 km southwest of the Survey Boundary on the western bank of Bowmans Creek.

The AHIMS data therefore suggests that the most likely site type to be recorded within the Survey Boundary are artefact sites. While PAD sites and modified tree sites are present within the immediate search area, the likelihood of these sites occurring decreases in landforms such as the Survey Boundary that are distant to water.

Table 6-1: AHIMS site types and frequencies.

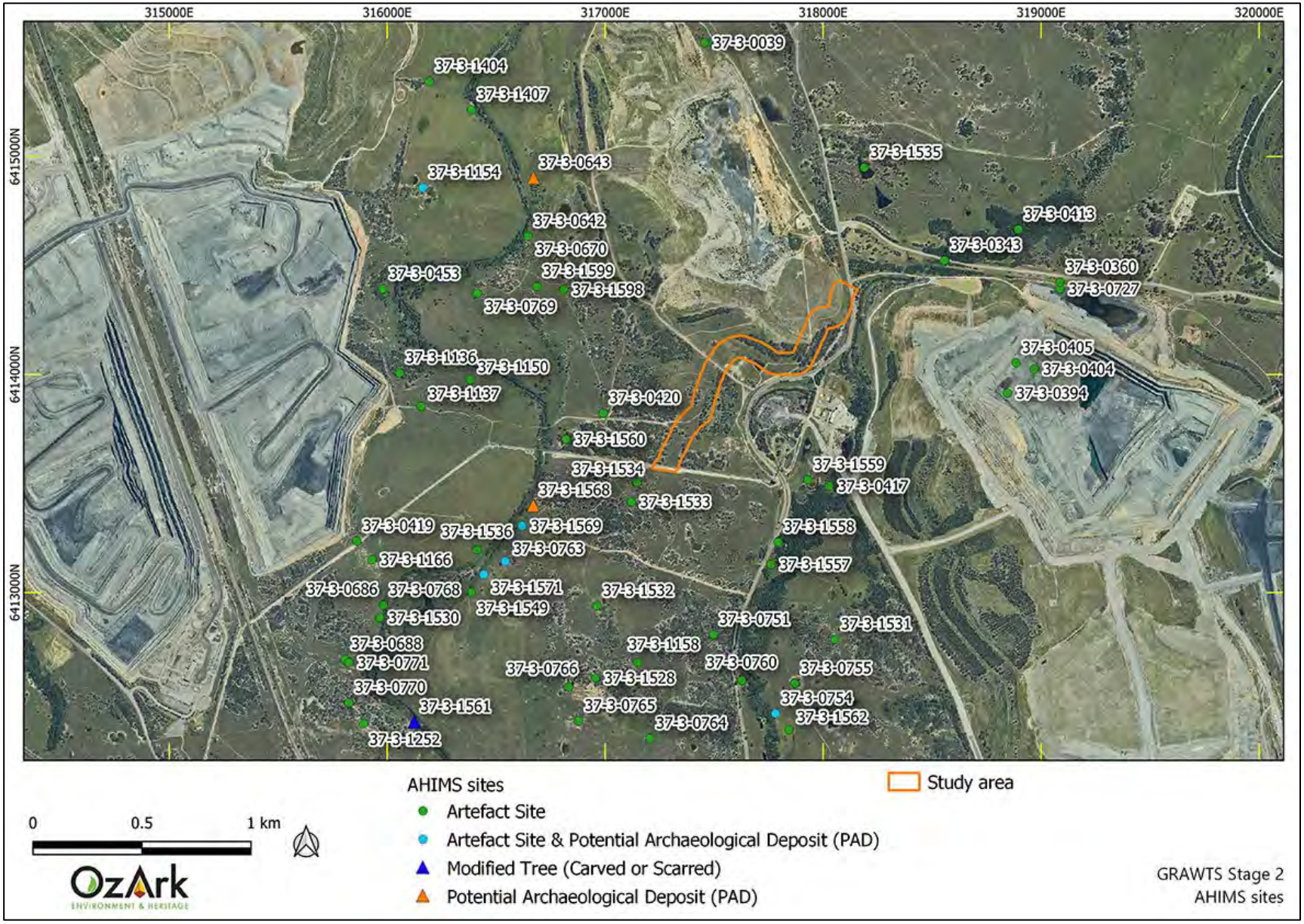
Site Type	Number	% Frequency
Artefact Site	50	86.2
Artefact Site & Potential Archaeological Deposit (PAD)	5	8.6
Potential Archaeological Deposit (PAD)	2	3.4
Modified Tree (Carved or Scarred)	1	1.7
Total	**58**	**100**

6.6 ARCHAEOLOGICAL CONTEXT: CONCLUSION

The archaeological investigations surrounding the study area summarised in **Sections 6.3** to **6.5** indicate that:

- Stone artefact sites (isolated finds and artefact scatters) are the most recorded site types in the area and have potential to be recorded in the Survey Boundary. Other site types, such as PADs, are unlikely given the distance of the study area from permanent water sources
- Scarred trees can appear wherever appropriate mature aged trees are located, although it is noted that this site type will be rare as the Survey Boundary has been almost entirely cleared, and the trees that are present are regrowth vegetation (note the lack of trees in the 1987 aerial of the Survey Boundary shown on **Figure 1-3**)
- The most likely indicator of potential sites is areas of exposure within proximity of fresh water
- The common stone types utilised for stone tool manufacture are mudstone (tuff) and silcrete
- Sites on slopes are generally in a secondary context having been displaced by erosional processes. The exception is where there is outcropping rock as this feature may have attracted occupation or use.

Figure 6-1. AHIMS sites near the study area.



6.7 PREDICTIVE MODEL FOR SITE LOCATION

Previous studies in the district indicate that sites are largely located along drainage depressions, stream channel banks and/or their associated flats. Sites have also been located on ridge lines and slope landforms, although these often have a low artefact density and are typically isolated artefacts. It has been discussed that archaeological sites tend to be associated with permanent sources of water as can be seen in the clustering of sites around Bowmans Creek and the scattering of sites near minor creek systems such as Yorks Creek. However, such watercourses are absent from the Survey Boundary.

The land immediately surrounding the Survey Boundary is currently used for mining operations, and the Survey Boundary has been subjected to widespread vegetation clearing and long-term grazing. This agricultural land use has likely caused soil loss, and potentially the loss of archaeological deposits, across the Survey Boundary.

6.8 PREDICTIVE MODEL FOR THE SURVEY BOUNDARY

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including plant and animal foods, stone and ochre resources and rock shelters, as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes, or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of colonial farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

Based on knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded:

Isolated finds may be indicative of a random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.

- As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Survey Boundary. As the Survey Boundary is within landforms distant to water, the likelihood of recording this site type, as opposed to artefact scatters, is increased.

Open artefact scatters are here defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Stone artefact distributions of variable artefact densities are the most common Aboriginal object found within the region. A general correlation between landform and the nature of the evidence of past Aboriginal occupation is evident. Higher artefact density sites are located on elevated landforms adjacent to watercourses. The Survey Boundary contains no locations close to permanent or semi-permanent watercourses, and should artefact scatters be present, they will likely have a low artefact density and display a low complexity of artefact types.

Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed

as a consequence of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any particular example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematic because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- The Survey Boundary has been cleared for agricultural activities and review of historical aerial imagery (**Figure 1-3**) indicates that any trees currently in the Survey Boundary are regrowth vegetation. As such, this site type is unlikely to be recorded in the Survey Boundary.

Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.

- This site type is unlikely to be recorded within the Survey Boundary as quarry sites are not commonly recorded in the district. It is noted that there is exposed sandstone in the Survey Boundary, however, this stone type is not used for tool manufacture and evidence of quarrying is not expected.

Grinding grooves are most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have been recorded on fine-grained granite outcrops.

- This site type has not been identified near the Survey Boundary and there are no watercourses present that are often associated with this site type. As such, this site type is unlikely to be recorded in the Survey Boundary. It is noted that there is exposed sandstone in the Survey Boundary, and while not associated with a waterway, it is possible evidence of grinding activities will be recorded in association with this exposed sandstone.

Burials are generally found in soft sediments such as aeolian sand, alluvial silts, and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.

- This site type is unlikely to be recorded both due to the limited extent of the Survey Boundary, as well as the historic land use that may have disturbed and/or dispersed burials (had they been present). It is recognised that the region has seen frontier violence

in the early days of colonial settlement, however, extensive investigations in surrounding landforms have failed to record any burials associated with these events.

Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

- The distribution of ceremonial sites and Bora grounds across the landscape is somewhat unpredictable as the choice of their location is based on spiritual reasons rather than simply landscape features and resources. Given the limited extent of the Survey Boundary, and the fact that this site type is rare in the region, this site type is predicted to be rare in the Survey Boundary.

6.9 FACTORS LIMITING THE RECORDING OF SITES

The Survey Boundary is within areas disturbed by historical agricultural land use. Soil loss related to vegetation clearing and long-term grazing, suggests that intact archaeological deposits (had they existed) are likely to have been dispersed.

There is also a lack of watercourses within the Survey Boundary. As the distance from water increases, the likelihood of archaeological sites being present decreases.

6.10 RESEARCH QUESTIONS

Several research questions were applied to the investigation of the Survey Boundary. These research questions included:

- What resources were available to the Aboriginal people using the land within the Survey Boundary and what tasks were Aboriginal people undertaking at the sites?
- Is there potential for burials to be present in the landscape?
- Can dates be obtained for the Aboriginal use of the area? Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene?
- Establish how the findings within the Survey Boundary (if any) accord with the regional archaeological context examined in **Section 6.4**.

The assessment methodology (**Appendix 3**) advanced these questions to guide the forthcoming survey, however, it was noted that these questions could only be addressed should sites of sufficient significance be encountered. However, based on the results of previous assessments, the limited size of the Survey Boundary, and past disturbances, it was not expected that the Survey Boundary would contain sites of sufficient significance to help answer those research questions that require a robust data set.

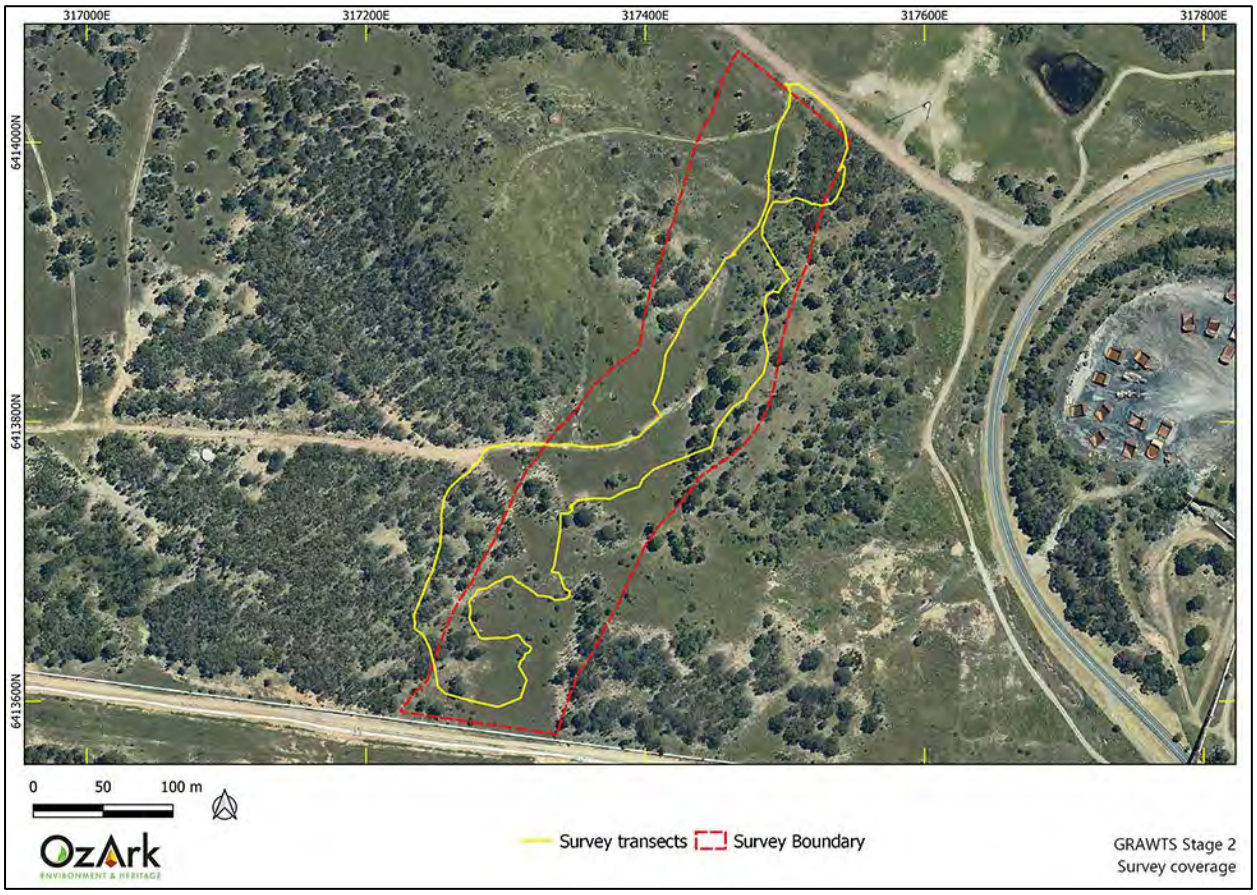
7 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

7.1 SAMPLING STRATEGY AND FIELD METHODS

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

Given the small size of the Survey Boundary, the entire area was able to be surveyed on foot. **Figure 7-1** shows the survey transect from the survey.

Figure 7-1: Aerial of the Survey Boundary showing the survey transect.



7.2 PROJECT CONSTRAINTS

There were no constraints to the successful completion of the survey. As the survey took place during a wet season, ground surface visibility (GSV) was very low, apart from along tracks and in woodlands where the ground cover was less. The low GSV hampered the efficacy of the survey, although there were sufficiently frequent exposures to allow a reasonable assessment to be made of the ground surface.

7.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are GSV and ground surface exposure (GSE). These factors are quantified to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For

the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice.

GSV is defined as:

> *… the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals'* (DECCW 2010: 39).

GSE is defined as:

> *… different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals'* (DECCW 2010: 37).

Table 7-1 calculates the effective survey coverage within the study area. In general, **Table 7-1** presents an approximation of the amount of ground surface able to be seen at any location within specific landform units. For example, at any one location within Survey Unit 1, approximately 4% of the ground surface could be seen as much of the surface was obscured by thick grass growth. The amount of visible ground increased in the sloping landforms of Survey Unit 2 as there were more exposures around trees in this landform.

Table 7-1: Effective survey coverage within the Survey Boundary.

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
Survey Unit 1	Undulating, generally flat landforms	32,881	40	10	1,315	4
Survey Unit 2	Sloping landforms with a moderate gradient	18,389	60	20	2,207	12

Table 7-2 demonstrates that the survey efficacy within Survey units 1 and 2 was generally low and no sites were recorded. However, it is not assessed that this result is due to low GSV but rather the type of landform within the Survey Boundary and the previous impacts from mining and agricultural activities.

Table 7-2: Effective survey coverage and incidences of site recording.

Landform	Landform area (sq m)	Area Effectively Surveyed (sq m) (= Effective Coverage Area)	% of Landform Effectively Surveyed (= Area Effectively Surveyed / Landform x 100)	Number of Sites	Number of Artefacts or Features
Survey Unit 1	32,881	1,315	4	0	0
Survey Unit 2	18,389	2,207	12	0	0

7.4 ABORIGINAL SITES RECORDED

No Aboriginal objects were recorded within the Survey Boundary. Further, it was assessed that there are no landforms within the Survey Boundary likely to contain subsurface archaeological deposits.

7.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

There are no previously recorded sites in the Survey Boundary.

7.6 DISCUSSION OF SURVEY RESULTS

The predictive model (**Section 6.8**) noted that there was a low likelihood of recording low-density artefact scatters or isolated finds within the Survey Boundary.

However, no Aboriginal objects were recorded and the potential for the Survey Boundary to contain subsurface archaeological deposits was assessed as low. This result is due to the restricted size of the Survey Boundary, the lack of archaeologically sensitive landforms, and the level of previous disturbance, particularly in the northern portion.

In those portions of the Survey Boundary where disturbances were lower, the sloping landscapes would have been unsuitable for camping activities and the creation of site types such as artefact scatters.

The exposed sandstone in the shallow escarpment in the south of the Survey Boundary was inspected for evidence of quarrying or grinding but nothing was noted.

All trees in the Survey Boundary are recent regrowth and no evidence for cultural modification was evident.

In conclusion, the Survey Boundary is modified by mining and agricultural activities and consists of landforms, some with slopes, distant to water sources. As noted in investigations of identical landforms in the GCOP study area (OzArk 2019), the landforms of the Survey Boundary have low archaeological potential and are unlikely to have ever contained large or complex sites.

In **Section 6.10** some research questions were posed that guided the field assessment. However, as no Aboriginal objects were recorded, these research questions cannot be addressed.

8 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE

8.1 ASSESSMENT OF SIGNIFICANCE

8.1.1 Introduction

The appropriate management of cultural heritage items is usually determined based on their assessed significance, as well as the likely impacts of any proposed developments. Cultural, scientific, aesthetic, and historical significance are identified as baseline elements of significance assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

All assessment of cultural significance is guided by the Burra Charter 2013.

8.1.2 Significance of the Survey Boundary

The Survey Boundary is within a cultural landscape that has meaning to the local Aboriginal community. Although this landscape has been fragmented through extensive mining and agriculture, the landscape retains significance in general, and particularly along waterways that are understood to be pathways through the country. In addition, some in the Aboriginal community hold cultural significance toward the landscape as a place where early colonial conflict occurred, including perhaps killings. While the Survey Boundary is within this landscape, there are no known tangible cultural places within the Survey Boundary. In addition, landscape features such as waterways that have cultural significance are absent from the Survey Boundary.

As a result of the ACHCRs, no cultural values associated with the Survey Boundary were made known to OzArk.

As no Aboriginal objects or potential archaeological deposits are known to exist in the Survey Boundary, there are no scientific values present.

The Survey Boundary has been impacted by long-term agricultural land use and more recent mining activities. As it is difficult to appreciate the Survey Boundary in its pre-disturbed state, it is assessed that the Survey Boundary has low aesthetic values. Further, sensory landscape features such as flowing water or vistas are absent from the Survey Boundary.

There are no known historical associations with the Survey Boundary, and it is concluded that there are no historical values present.

8.2 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE MODIFICATION

As no Aboriginal objects or potential archaeological deposits are known to exist in the Survey Boundary there will be no impacts to tangible heritage values.

Although the Survey Boundary is within a cultural landscape that has value to members of the Aboriginal community (**Section 8.1.2**), the proposed works will not impact tangible cultural places or landforms.

The Specified Area as defined in the Section 10 application under the ATSIHP Act includes the Survey Boundary (see **Sections 2.3.3** and **4.2.1**). OzArk was aware at the time of the survey of the values that have been identified in the Specified Area and took care to observe any attributes associated with these values within the Survey Boundary. No tangible items associated with these values were observed, and it is concluded that the project will not impact the values ascribed to the Specified Area. As the impacts are occurring within areas previously cleared and farmed, it is assessed that these actions have removed or altered the aesthetic values ascribed to the Specified Area. The specific values within the Specified Area that are identified as significant and the impacts to these values from the Modification are discussed in **Table 8-1**.

Table 8-1: Analysis of impacts to the identified values of the Specified Area.

Significance identified in the Specified Area	Likely impact from the Modification
Represents an area where the conflicts occurred during the early colonisation of the Hunter Valley", including how it "contains a landscape of an open massacre of the Wonnarua people"	The history of resistance and conflict associated with the colonial occupation of the Hunter Valley has been documented by Dr Mark Dunn (Dunn 2020). The massacre identified in the significance associated with the Specified Area has been extensively researched and an exact location for this event is unknown. While this does not preclude the possibility that it occurred in or near the Survet Boundary, there is no evidence to suggest that it did. During the survey, no evidence of this early colonial conflict was noted in the Survey Boundary.
Represents [an] area where ceremonies were carried out by the Wonnarua people" and is thus "sacred to our people", including "several places" used for rituals associated with "bora" (male initiation) ceremonies or with "women's business ceremonies"	It has not been made known to OzArk that ceremonial places are located within the Survey Boundary (apart from the generalised statements in the ATSIHP Act application).
"It is a spiritual place to us that must be protected so we can pass on to our children (future generations) for an understanding of our people's practices of the past there is an "obligation ... to preserve for future generations the story line that flows through the river, creeks and tributaries of the whole area·: including how "forefathers ... followed the creek lines and carried out ceremonial rituals along the route"	The Survey Boundary impacts minor areas associated with the Specified Area and does not impact waterways. The Modification will therefore not impact this value any more than has already occurred through the historic agricultural and mining use of this area.
"The area is part of a transit route"; along Bowmans Creek there are "two fish traps" and a "women's birthing place"	The Modification will not additionally impact Bowmans Creek and this value will not be impacted. The sites mentioned in the Specified Area are not known to exist within the Survey Boundary.
"Our people have used the area for thousands of years", including recently by "members of the [native title] claimant group", and, "As such, this is one of the few in Wonnarua Country that can demonstrate ongoing occupation and use by a hunter-gatherer society"	This intangible value will not be impacted by the Modification as it exists in an area that has been within private ownership for a long period of time and has been subjected to long-term grazing and landform modification. While occupation of the area by traditional Aboriginal people is undisputed, the survey results indicate that the Survey Boundary was not intensively occupied and no evidence of recent occupation (i.e. knapped glass objects etc.) were recorded.
"To ensure that our cultural and heritage values are protected"	A major aim of the survey was to ensure that this value was understood, and every effort made to ensure cultural values were conserved in the landscape. There is no harm to known Aboriginal objects arising from the Modification.
"We have a responsibility [to] do all we can, to stop the never ending destruction, of our Country" by "uncontrolled agricultural and coal mining practices". As such, the "area contains a landscape of ongoing conflict"	OzArk understands this point of view, however, it is considered that the Modification does not impact significant Aboriginal cultural heritage values.

8.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

The goal of ecologically sustainable development (ESD) is:

> Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The Core Objectives of ESD are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- To provide for equity within and between generations
- To protect biological diversity and maintain essential ecological processes and life-support systems.

As such, the ESD principles have limited applicability to cultural heritage although the notion of inter-generational equity is relevant. This is understood to refer to future generations being able to enjoy, interact with and study aspects of cultural heritage that are available to current generations.

8.3.1 Applicability to the Modification

As no known Aboriginal cultural values will be impacted, the Modification will adhere to the ESD principles with regards Aboriginal cultural heritage. Importantly, there will be no loss of intergenerational equity as the Modification will not harm known Aboriginal objects and there will be no impact to the region's Aboriginal cultural heritage values.

8.4 UPDATE OF THE ACHMP

The MOC *Aboriginal Cultural Heritage Management Plan* (ACHMP) will be updated following approval of the Modification to include management procedures aimed at conserving Aboriginal cultural heritage values at the MOC and within the Modification study area. Any update to the ACHMP will be done in consultation with the RAPs.

8.5 MANAGEMENT OF UNEXPECTED FINDS

The protocols related to the discovery of any new Aboriginal sites contained in Sections 6.2.1 of the current MOC ACHMP are sufficient to cover this eventuality and will be implemented for the Modification.

9 RECOMMENDATIONS

Under Section 89A of the NPW Act it is mandatory that all newly-recorded Aboriginal sites be registered with AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that no Aboriginal sites were recorded during the assessment.

The following recommendations are made based on these impacts and regarding:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without the prior written consent of Heritage NSW
- The findings of the current investigations undertaken within the study area
- The interests of the Aboriginal community.

As Aboriginal objects will not be harmed, there are no further requirements for archaeological investigation.

Regarding the Modification, the following recommendations are made:

1. This ACHAR concludes that no Aboriginal cultural heritage objects or values will be harmed by the Modification. Therefore, no specific management measures to conserve Aboriginal objects are required.
2. The MOC ACHMP will be updated following approval of the Modification to include management procedures aimed at conserving Aboriginal cultural heritage values at the MOC and within the Modification study area.
3. The protocols related to the discovery of any new Aboriginal sites contained in Sections 6.2.1 of the MOC ACHMP are deemed sufficient to cover this eventuality and will be implemented for the Modification.

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APPENDIX 1: ABORIGINAL COMMUNITY LOG

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
14.4.21	The Singleton Argus	Rebecca Hardman (RH) rang - newspaper is printed on a Thursday and cut off is by 3pm the Wednesday prior	phone
14.4.21	The Singleton Argus	RH sent ad off to the newspaper	email
14.4.21	Heritage NSW	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	Wanaruah Local Aboriginal Land Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	Office of The Registrar, ALRA	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	National Native Title Tribunal	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	NTSCORP	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	Singleton Shire Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	Hunter Local Land Services	RH sent stage1 agency letter requesting potential stakeholders. Closing date 28/04/2021	email
14.4.21	The Singleton Argus	RH received proof	email
14.4.21	The Singleton Argus	RH approved proof and requested tear sheet and receipt	email
14.4.21	The Singleton Argus	RH received receipt	email
14.4.21	The Singleton Argus	RH thanked	email
14.4.21	Hunter Local Land Services	RH received acknowledgement email	email
14.4.21	National Native Title Tribunal	"RH received notification. Based on the records held by the National Native Title Tribunal as at 14 April 2021 it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area."	email
15.4.21	Heritage NSW	RH received list of stakeholders	email
26.4.21	The Singleton Argus	RH followed up for tear sheet	email
26.4.21	The Singleton Argus	RH received tear sheet	email
26.4.21	The Singleton Argus	RH thanked	email
26.4.21	Wanaruah Local Aboriginal Land Council	RH received list of stakeholders	email
27.4.21	Wanaruah Local Aboriginal Land Council	RH thanked	email
27.4.21	A1 Indigenous Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Aboriginal Native Title Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	AGA Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Aliera French Trading	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Awabakal Traditional Owners Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Cacatua Culture Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Carol Ridgeway- Bissett	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Corroboree Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Crimson-Rosie	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
27.4.21	Culturally Aware	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	D F T V Enterprises	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Deslee Talbott Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Didge Ngunawal Clan	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Divine Diggers Aboriginal Cultural Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Gidawaa Walang & Barkuma Neighbourhood Centre Inc.	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Hunter Traditional Owner	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Hunter Valley Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Hunter Valley Cultural Surveying	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Hunters & Collectors	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Indigenous Learning	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Jarban & Mugrebea	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Jumbunna Traffic Management Group Pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Kauma Pondee Inc.	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Kawul Pty Ltd trading as Wonn1 Sites	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Lower Hunter Aboriginal Incorporated	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Lower Hunter Wonnarua Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Lower Wonnaruah Tribal Consultancy Pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Mayaroo	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Michael Green Cultural Heritage Consultant	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Murra Bidgee Mullangari Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Myland Cultural & Heritage Group	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Nunawanna Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Robert Syron	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Stephen Talbot	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Tocomwall Pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Ungooroo Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Wallagan Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Wanaruah Local Aboriginal Land Council	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Wattaka Wonnarua C.C. Service	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Widescope Indigenous Group pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
27.4.21	Wonnarua Culture Heritage	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Wonnarua Elders Council	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Wonnarua Nation Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Yinarr Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Black Creek Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Bullen Bullen	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Carrawonga Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Giwiirr Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Hunter Valley Cultural Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Hunter Valley Environment Land & Mining Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Hunter Valley Natural & Cultural Resources	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Indigenous Outcomes	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Kawul Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Kayaway	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Mingga Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Mooki Plains Management	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Mooki Plains Management	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Muswellbrook Cultural Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Ngarramang-Kuri Aboriginal Culture & Heritage Group	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Roger Noel Matthews Consultancy	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	St Clair Singleton Aboriginal Corporation	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Ungooroo Cultural & Community Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Upper Hunter Heritage Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Upper Hunter Wonnarua Council Inc	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Valley Culture	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Wanaruah Custodians	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Wonn 1 Contracting	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	DRM Cultural Management	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Esther Tighe	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Griffiths Group	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Murrawan Cultural Consultants Pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Moreeites	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Waabi Gabinya Cultural Consultancy	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
27.4.21	Warrigal Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Smith Dhagaans Cultural group	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Thawan Heritage Consultant	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Wurrumay Consultants	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	J & A Leonardi	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Wonnarua Traditional Custodian	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	JLC Cultural Services	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Waabi Gabinya Cultural Consultancy	email RTS	RTS
27.4.21	Waabi Gabinya Cultural Consultancy	RH phoned mobile, N/A	phone
27.4.21	Waabi Gabinya Cultural Consultancy	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Indigenous Outcomes	email RTS	RTS
27.4.21	Indigenous Outcomes	RH phoned mobile, N/A	phone
27.4.21	Indigenous Outcomes	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Robert Syron	email RTS	RTS
27.4.21	Robert Syron	RH phoned and updated email	Phone
27.4.21	Robert Syron	RH re sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Michael Green Cultural Heritage Consultant	email RTS	RTS
27.4.21	Michael Green Cultural Heritage Consultant	RH phoned mobile, N/A	phone
27.4.21	Michael Green Cultural Heritage Consultant	RH received call back and updated email address	Post
27.4.21	Michael Green Cultural Heritage Consultant	RH re sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Lower Wonnaruah Tribal Consultancy Pty Ltd	email RTS	RTS
27.4.21	Lower Wonnaruah Tribal Consultancy Pty Ltd	RH phoned landline, N/A	phone
27.4.21	Lower Wonnaruah Tribal Consultancy Pty Ltd	RH phoned mobile, N/A	phone
27.4.21	Lower Wonnaruah Tribal Consultancy Pty Ltd	RH sent stage 1 round 2 community EOI letters. RSVP 13.5.21	Post
27.4.21	Aboriginal Native Title Consultants	email RTS	RTS
27.4.21	Aboriginal Native Title Consultants	RH phoned mobile, updated email	phone
27.4.21	Aboriginal Native Title Consultants	RH re sent stage 1 round 2 community EOI letters. RSVP 13.5.21	email
27.4.21	Didge Ngunawal Clan	Registered as a RAP	email
27.4.21	Tocomwall Pty Ltd	Registered as a RAP	email
27.4.21	Stakeholder 1	Registered as a RAP	email
27.4.21	Stakeholder 2	Registered as a RAP	email
27.4.21	Wattaka Wonnarua C.C. Service	Registered as a RAP	email

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
27.4.21	Hunter Valley Environment Land & Mining Services	Des advised this group is no longer active	email
27.4.21	Wonnarua Traditional Custodian	Des advised this group is no longer active	email
27.4.21	Aboriginal Native Title Consultants	Registered as a RAP	email
28.4.21	Mayaroo	"RH received email: Mayaroo has an interest in Aboriginal Cultural Heritage, however, Ravensworth is outside our targeted area."	email
28.4.21	Mayaroo	"RH responded: Thanks for letting me know, I will take you off the RAP list for this one. Look forward to the next"	email
28.4.21	AGA Services	Registered as a RAP, asked that we email them through cacatua email at Donna as she does paperwork	email
28.4.21	Cacatua Culture Consultants	Registered as a RAP	email
28.4.21	Cacatua Culture Consultants	RH thanked	email
28.4.21	Kawul Pty Ltd trading as Wonn1 Sites	Registered as a RAP	email
28.4.21	Kawul Pty Ltd trading as Wonn1 Sites	RH thanked	email
28.4.21	Culturally Aware	Registered as a RAP	email
28.4.21	Culturally Aware	RH thanked	email
28.4.21	Hunter Traditional Owner	Registered as a RAP	email
28.4.21	Hunter Traditional Owner	RH thanked	email
28.4.21	Black Creek Aboriginal Corporation	email RTS	RTS
29.4.21	Black Creek Aboriginal Corporation	RH phoned, number disconnected	Phone
29.4.21	Black Creek Aboriginal Corporation	RH posted EOI instead	Post
29.4.21	AGA Services	RH thanked	email
29.4.21	Widescope Indigenous Group pty Ltd	Registered as a RAP	email
29.4.21	Widescope Indigenous Group pty Ltd	RH thanked	email
29.4.21	Wattaka Wonnarua C.C. Service	RH thanked	email
29.4.21	Aboriginal Native Title Consultants	RH thanked	email
29.4.21	Awabakal Traditional Owners Aboriginal Corporation	RH received email notifying is out of their area and won't be registering	email
3.5.21	Gomery	Registered as a RAP	phone
3.5.21	Awabakal Traditional Owners Aboriginal Corporation	RH thanked	email
6.5.21	A1 Indigenous Services	Registered as a RAP	email
10.5.21	A1 Indigenous Services	RH thanked	email
10.5.21	Stakeholder 1	Registered as a RAP - 2nd time	email
10.5.21	Stakeholder 2	Registered as a RAP - 2nd time	email
12.5.21	Upper Hunter Wonnarua Council Inc	Sheridan Baker (SB) received registration from Rhonda Perry	phone

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
13.5.21	Wanaruah Local Aboriginal Land Council	"RH received email: I hope this email finds you well 😊 I am just getting in touch to confirm that a representative from the Land Council is recorded to attend the 2-day meeting taking place next week?"	email
13.5.21	Wanaruah Local Aboriginal Land Council	"RH responded: Thanks for your email but I am a bit confused. To my knowledge OzArk have not organised a meeting next week for this project???"	email
13.5.21	St Clair Singleton Aboriginal Corporation	letter RTS	Post
13.5.21	Indigenous Outcomes	letter RTS	Post
13.5.21	Roger Noel Matthews Consultancy	letter RTS	Post
18.5.21	Wanaruah Local Aboriginal Land Council	RH sent notification of RAPs	email
18.5.21	Heritage NSW	RH sent notification of RAPs	email
27.5.21	Wanaruah Local Aboriginal Land Council	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Didge Ngunawal Clan	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Tocomwall Pty Ltd	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Stakeholder 1	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Stakeholder 2	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Widescope Indigenous Group pty Ltd	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	AGA Services	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Cacatua Culture Consultants	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Kawul Pty Ltd trading as Wonn1 Sites	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Culturally Aware	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Hunter Traditional Owner	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Wattaka Wonnarua C.C. Service	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Aboriginal Native Title Consultants	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Gomery	RH sent stage 2 methodology. Feedback ends 27.6.21	Post
27.5.21	A1 Indigenous Services	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Upper Hunter Wonnarua Council Inc	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Wonn 1 Contracting	RH received call from Arthur registering Wonnarua Elders Council and updating email address. Also requested to know who the groups listed as stakeholder are. RH advised cannot pass on details	Phone
27.5.21	Wonnarua Elders Council	RH sent stage 2 methodology. Feedback ends 27.6.21	email
27.5.21	Aboriginal Native Title Consultants	"RH received email: ANTC would like to be consulted on the project Ravensworth, Aboriginal native title consultants holds cultural knowledge and values to the area"	email
2.6.21	Wanaruah Local Aboriginal Land Council	RH sent updated notification of RAPs	email
2.6.21	Heritage NSW	RH sent updated notification of RAPs	email
3.6.21	Giwiirr Consultants	RH received RTS	Post
8.6.21	Aliera French Trading	late registration as a RAP	email
15.6.21	Aliera French Trading	RH sent copy of stage 2 for feedback	email

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
15.6.21	Wanaruah Local Aboriginal Land Council	RH received call to make sure they are registered	email
22.6.21	AGA Services	"RH received feedback: staff had a meeting on Friday 18th June 2021, at this meeting the Greater Ravensworth area water and tailings scheme was tabled. After a discussion with regards to all its contents both Cacatua and AGA support the documentation the was sent with regards to the Subject."	email
22.6.21	Cacatua Culture Consultants	"RH received feedback: staff had a meeting on Friday 18th June 2021, at this meeting the Greater Ravensworth area water and tailings scheme was tabled. After a discussion with regards to all its contents both Cacatua and AGA support the documentation the was sent with regards to the Subject."	email
23.6.21	Aliera French Trading	RH phoned landline - disconnected	phone
23.6.21	Aliera French Trading	RH phoned mobile - disconnected	phone
23.6.21	Aliera French Trading	RH sent email asking for call today ASAP	email
23.6.21	Culturally Aware	RH phoned N/A	phone
24.6.21	Culturally Aware	RH phoned discussed availability, RH to send formal Invite, Tracey confirmed will have someone available	phone
24.6.21	Culturally Aware	RH sent invite to fieldwork	email
5.7.21	Wanaruah Local Aboriginal Land Council	RH sent 2nd updated notification of RAPs	email
5.7.21	Heritage NSW	RH sent 2nd updated notification of RAPs	email
9.7.21	Culturally Aware	Culturally Aware (Tracey Skene) was contacted to attend the field survey. Tracey said that Sue Cutmore would attend. Culturally Aware were informed on 28/6/21 that the survey would be delayed by one week due to COVID 19 restrictions. Culturally Aware were contracted through the week prior to the survey and on 8/7/21 Tracey informed Ben Churcher that neither she nor Sue would be able to attend the survey scheduled for the next day. Ben Churcher undertook the survey on 9/7/21 without any RAP attendees.	Note
12.1.22	Wanaruah Local Aboriginal Land Council	Catherine Burrowes (CB) sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Didge Ngunawal Clan	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Tocomwall Pty Ltd	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Stakeholder 1	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Stakeholder 2	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Widescope Indigenous Group pty Ltd	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	AGA Services	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Cacatua Culture Consultants	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Kawul Pty Ltd trading as Wonn1 Sites	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Culturally Aware	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Hunter Traditional Owner	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Wattaka Wonnarua C.C. Service	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Aboriginal Native Title Consultants	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Gomery	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	Post
12.1.22	A1 Indigenous Services	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Upper Hunter Wonnarua Council Inc	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email

Aboriginal Consultation Log - GRAWTS Stage 2			
Date	**Organisation**	**Comment**	**Method**
12.1.22	Wonnarua Elders Council	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
12.1.22	Aliera French Trading	CB sent stage 4 draft ACHAR. Feedback ends 10.2.22	email
13.1.22	Upper Hunter Wonnarua Council Inc	CB received call from Rhonda asking about recently received draft ACHAR. Rhonda had concerns on the report being so long and confirming who if anyone actions feedback from the RAPs. I acknowledged her concerns asking to receive feedback by 10.2.22. All correspondence would be filed and included in the FINAL ACHAR.	Phone

APPENDIX 2: CONSULTATION DOCUMENTS

Appendix 2 Figure 1: Singleton Argus advertisement.

12 THE SINGLETON ARGUS Thursday, April 22, 2021 singletonargus.com.au

Connect with Classifieds

The Singleton Argus

Phone: 02 6572 2611

Email: classifiedshunter@austcommunitymedia.com.au

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The Singleton Argus
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classifiedshunter@austcommunitymedia.com.au
Save time, submit online 24/7
addirect.com.au
Print and online packages available throughout Australia
Advertising self service enquiries: acmadonline@austcommunitymedia.com.au
ACM
Self Service

Funeral Notices

PB SINCE 1927
HATCHER
Ross Bernard
Of the Elizabeth Gates Nursing Home, Singleton and formerly of Polo Avenue Hunterview passed away at the Elizabeth Gates Nursing Home Singleton on 20 April 2021, aged 83 years.
Relatives and friends of Ross are respectfully invited to attend his funeral prayers commencing in St Brigid's Catholic Church, Branxton at 11:00am Tuesday 4th May 2021. Following the service a private cremation will take place.
Partridge Bros, Singleton
FDA of NSW
Ph: 02 6572 2917
www.partridgebrothers.com.au

ANZAC Remembrances

ANZAC DAY
LEST WE FORGET
COMPANY SERGEANT MAJOR (WOII) CHARLES HARVEST ANDREWS
Charles Harvest Andrews (Charlie) born in 1897 at Singleton, his father was Mr Charles Thomas Andrews. Joined the Australian Imperial Force (AIF) (ARMY) on the 17-8-1915, was promoted 1-2-1918 to Company Sergeant Major, as Warrant Officer Class II, killed in action on 24-3-1918 at "Irish House" near Warneton, Belgium, is buried at Irish House, south of Ypres, Belgium.

Wanted to Buy

DOWNSIZES/De-ceased Estate. Retro items & collectibles. We pay cash! 0412 922 857
PRIVATE BUY 2-3 bed-room, small home in Newcastle area. Ph: 0467 319 444
TOOLS old tools, guitars fishing items, old model trains, cars, jewellery, Dvd/Cd. Riz 0431296741

Fertiliser

BULK Chicken Manure & Spent Mushroom 50m³ & 70m³ loads. Simmons Bulk Haulage. 02 4964 8958/ 0428 496 312

Motor Vehicles

OLD CARS - If you have old cars that need to go, give me a call and I'll give you some dough! Commercial ve-chicles. 0487 810 022
WANTED to BUY: Reliable vehicle, suita-ble for a student. Phone 0417 879 601.

Motor Vehicles

Singleton & Surrounding Car Removals
Unwanted Cars, Vans, Trucks, etc.
Top cash on the spot $$$
100% Free towing
Fast pick up
Call Jim now
0404 045 993
We are local
conditions apply

Caravans & Camping

WANTED TRAILERS
Old/new, any cond. We pick up & pay cash! 0431682188/4339 4207 waterfun188@gmail.com

To Let & Wanted

HAMILTON NTH Lrg fully furn room with fridge in quiet, clean, friendly over 55's share home, $190 pw incl exp, wifi. Ph 0408 419 890.

Boats and Accessories

WANTED BOATS
Old/new, any cond. We pick up & pay cash! 0431682188/4339 4207 waterfun188@gmail.com

Cattle

RED ANGUS BULLS
Reg'd, 12mths. Grassfed. Quiet. Well bred.
Hunter Valley.
0459 397 905

Accessories and Spare Parts

TYRES
Secondhand
1000's IN STOCK
12" to 22"
Car, LT & 4WD
★ BP New Lambton
4957 5327
Greg/Ian

Livestock

HORSES WANTED
All types. Also suspect cattle. Ph: 49391492, 49381592 - 0428 680 443

Connect with Classifieds

Public Notices

Expression of Interest
Cultural Heritage Management
OzArk Environment & Heritage has been engaged on behalf of Glencore's Mount Owen Complex and seeks registration of Aboriginal groups or individuals who are interested in being consulted over an Aboriginal Cultural Heritage Assessment for Stage 2 of the proposed Greater Ravensworth Area Water and Tailings Scheme (the Modification) in the Singleton Local Government Area. The Modification involves the construction of additional pipelines within the project area for the Mt Owen Continued Operations Project.
This consultation will assist the proponent in the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR) and to assist Heritage NSW in their assessment of the Modification.
If you hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places in the proposed study area, please register your interest. We will continue to consult with this group.
Registrations can be made by:
OzArk EHM PO Box 2069 Dubbo NSW 2830;
rebecca@ozarkehm.com.au or by
OzArk on 02 6882 0118.
All submissions should be received no later than Thursday 6th May 2021.

YANCOAL 兖煤澳大利亚有限公司
PUBLIC NOTICE
For updated blast times please phone free call 1800 099 669.
Mount Thorley Warkworth wishes to advise of the following road closures on Thursday 22nd April 2021, Friday 23rd April 2021, Monday 26th April 2021, Tuesday 27th April 2021, Wednesday 28th April 2021, Thursday 29th April 2021 for the purposes of blasting. Closure will occur between 9am and 5pm depending upon weather conditions and will be for approximately 10 minutes.
Through traffic will not be possible while road closures are in place.
PUTTY ROAD will be closed between the Jerrys Plains Road and to a point 600m West of Charlton Road.
CHARLTON ROAD will be closed between Putty Road and Cobcroft Road.
JERRYS PLAINS ROAD may be closed from Putty Road to Wallaby Scrub Road.
GOULDSVILLE ROAD may be closed from Jerrys Plains Road to Long Point Road intersection.
If weather conditions are poor, blasting will be delayed until a day of suitable weather. Mount Thorley Warkworth apologises for any inconvenience caused.

Public Notices

Public Notice
Proposed termination of Strata Scheme SP20883 being situated at 10 Rocky Point Road, Fingal Bay NSW 2315
Notice is given of an intention to apply to Registrar General for an order terminating the above Strata Scheme and the consequent winding up of the Owners Corporation, pursuant to section 142 of the *Strata Schemes Development Act 2015* (NSW).
Any person having claim against the Owners Corporation of the above Strata Scheme or any estate or interest in or claim against any of the lots comprised in the Strata Scheme is required, on or before 7 May 2021, to send particulars of the estate, in interest or claim to:
Steven T. Parrott Solicitor and Attorney of 4/29 Stockton Street, Nelson Bay NSW 2315.

UNITED WAMBO
JOINT VENTURE
PUBLIC NOTICE
Temporary Road Closures
Golden Highway (Jerrys Plains Road)
United Wambo wishes to advise that Jerrys Plains Road may be closed the weeks of 26th April to 1st May 2021, and 3rd May to 8th May 2021 between 9:00am - 5:00pm for the purposes of blasting. The closure could be up to 15 minutes in duration and will affect the road between Lemington Road and Comleroi Road. If weather conditions are poor, blasting will be delayed until the first day of suitable weather.
United Wambo apologises for any inconvenience caused. For further information contact the Community Response Line at 1800 801 440.

QR codes, the new way customers can search for your business, make sure it's in your ad today.
ACM
Self Service

EXTRA EXTRA!!!
Read all about it with ONE simple click
WE NOW HAVE CLICK & GO
See something you like online?
Want more info?
Simply click on the Ad & we'll direct you to their page
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ACM

Appendix 2 Figure 2: Example of Stage 1 agency letter.

OzArk Environment & Heritage
Dubbo
Queanbeyan
Newcastle
T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au
ABN 59 104 582 354
145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

14 April 2021

Heritage NSW
Department of Premier and Cabinet
Locked Bag 5020
Parramatta NSW 2124
heritagemailbox@environment.nsw.gov.au

ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED GREATER RAVENSWORTH AREA WATER AND TAILINGS SCHEME (GRAWTS) MODIFICATION.

Dear Sir / Madam,

OzArk Environment & Heritage (OzArk) has been engaged by Glencore's Mount Owen Complex to undertake Aboriginal community consultation as per the '*Aboriginal cultural heritage consultation requirements for proponents 2010*'.

Glencore are proposing a modification to its Development Consent to facilitate the construction of additional water and tailings pipelines in the Greater Ravensworth Area, located in the Singleton Local Government Area (**Figures 1** and **2**).

We are therefore seeking Expressions of Interest from relevant Aboriginal groups and individuals in the area to form a consultation group. This consultation is to assist OzArk and the proponent in preparing the Aboriginal Cultural Heritage Assessment Report and to assist Heritage NSW in their assessment of the Modification.

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining the impacts to the cultural significance of the Modification, please advise our office. We would appreciate it if you could provide any feedback, by responding to this email, regarding these Aboriginal stakeholder groups by **Wednesday 28th April 2021,** or sooner if possible.

Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

Kind regards,

Rebecca Hardman
Office Manager

Figure 1. Location of the study area.

Figure 2. Detail of the study area.

Appendix 2 Figure 3: Example of Stage 1 potential stakeholder letter.

OzArk Environment & Heritage
Dubbo
Queanbeyan
Newcastle
T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au
ABN 59 104 582 354
145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

27 April 2021

Members
Wanaruah Local Aboriginal Land Council
19 Maitland Street
Muswellbrook NSW 2333
admin@wanaruahlandcouncil.com.au

ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED GREATER RAVENSWORTH AREA WATER AND TAILINGS SCHEME (GRAWTS) MODIFICATION

Dear Members,

OzArk Environment & Heritage is undertaking Aboriginal community consultation as per the "*Aboriginal cultural heritage consultation requirements for proponents 2010*", on behalf of the proponent; Glencore's Mount Owen Complex (Glencore).

Glencore intends to seek development consent under the *Environmental Planning and Assessment Act 1979* (EP&A) to propose a modification to its Development Consent for facilitating the construction of additional water and tailings pipelines in the Greater Ravensworth Area, located in the Singleton Local Government Area (**Figures 1 and 2**).

Accordingly, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the area, to form a consultation group. This consultation is to assist OzArk and the proponent, in preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR) and to assist Heritage NSW in their consideration and determination of the Project.

If you hold cultural knowledge relevant to determining the impacts to the cultural significance of this project area, please register your interest by contacting our office. The closing date for expressions of interest is **COB Thursday 13th May 2021.**

If you wish to register interest it is noteworthy that as per the Heritage NSW guidelines we are required to provide your details to Heritage NSW and the Local Aboriginal Lands Council unless we are advised that you do not wish your details to be released.

Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

Kind regards,

Rebecca Hardman
Office Manager

Figure 1: Location of the study area.

Figure 2. Detail of the study area.

APPENDIX 3: ASSESSMENT METHODOLOGY

Appendix 3 Figure 1: Example of Stage 2/3 letter inviting review of the assessment methodology.

OzArk Environment & Heritage ABN 59 104 582 354
Dubbo T: 02 6882 0118 145 Wingewarra St
Queanbeyan enquiry@ozarkehm.com.au PO Box 2069
Newcastle www.ozarkehm.com.au DUBBO NSW 2830

27 May 2021

Members
Wanaruah Local Aboriginal Land Council
19 Maitland Street
Muswellbrook NSW 2333
admin@wanaruahlandcouncil.com.au

ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED GREATER RAVENSWORTH AREA WATER AND TAILINGS SCHEME (GRAWTS) MODIFICATION.

Dear Members,

Thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) to be consulted for the proposed modification to Glencore's Development Consent to facilitate the construction of additional water and tailings pipelines in the Greater Ravensworth Area.

The purpose of this letter is to invite you to comment on the enclosed draft methodology for the Aboriginal Cultural Heritage Assessment Methodology, Stage 2. Greater Ravensworth Area Water and Tailings Scheme, Ravensworth NSW, May 2021. This consultation is to assist OzArk and the proponent in preparing the Aboriginal Cultural Heritage Assessment Report and to assist Heritage NSW in their assessment of the Modification.

In addition to comments on the draft report, if you can share any Aboriginal cultural heritage knowledge relevant to the proposed study area, we welcome this input so as to improve our assessment outcomes and to ensure Aboriginal cultural values are considered. OzArk is required to give you 28 days to supply feedback on the attached documents. This period closes **5pm on Sunday 27th June 2021.**

If you need any help supplying feedback or have any queries in relation to the enclosed information, please do not hesitate to contact our office.

Kind regards,

Rebecca Hardman
Office Manager

Representative view of the landforms near the study area.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT METHODOLOGY

STAGE 2. GREATER RAVENSWORTH AREA WATER AND TAILINGS SCHEME

RAVENSWORTH, NSW

JUNE 2021

Report prepared by

OzArk Environment & Heritage

for James Bailey & Associates

OzArk
Environment & Heritage
145 Wingewarra St
(PO Box 2069)
Dubbo NSW 2830
Phone: (02) 6882 0118
Fax: (02) 6882 0630
enquiry@ozarkehm.com.au
www.ozarkehm.com.au

OzArk Environment & Heritage

DOCUMENT CONTROLS

Proponent	Glencore Coal Assets Australia
Client	James Bailey and Associates
Document Description	*Aboriginal Cultural Heritage Assessment Methodology. Stage 2. Greater Ravensworth Area Water and Tailings Scheme (GRAWTS)*
File Location	OzArk Job No.
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Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this assessment will take place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture, and hopes of local Aboriginal people.

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1 INTRODUCTION

OzArk Environment & Heritage (OzArk) has been engaged by James Bailey & Associates on behalf of Glencore (the proponent) to prepare an assessment methodology for the proposed Stage 2 of the Greater Ravensworth Area Water and Tailings Scheme (GRAWTS) (the Modification).

The Modification is located in the Greater Ravensworth area and within the Singleton Local Government Area (**Figure 1-1**).

The project information provided in this methodology complies with Stage 2 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010b). The assessment methodology is in accordance with Stage 3 of the ACHCRs.

Figure 1-1: Aerial showing the location of the Modification.

1.1 MODIFICATION OVERVIEW

Liddell Mine, Mount Owen Complex (MOC) and Ravensworth Operations are neighbouring coal mining developments located in the Upper Hunter region of New South Wales. These mines are located within a mining precinct known as the Greater Ravensworth Area (GRA).

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Liddell Mine is managed by Liddell Coal Operations Pty Limited (LCOPL) in accordance with Development Consent DA 305-11-01, which allows mining operations to take place until 31 December 2028.

MOC is managed by Mt Owen Pty Limited (MOPL) in accordance with Development Consent SSD-5850 which enables mining activities to be conducted until 31 December 2037.

Ravensworth Operations is managed by Ravensworth Operations Pty Ltd (ROPL) in accordance with Project Approval PA 09_0176, which enables mining to be undertaken until 31 December 2039.

There are synergies between the GRA operations including a network of water and tailings management infrastructure referred to as the GRAWTS. The GRAWTS enables the transfer of water and tailings from between Liddell Mine, MOC and Ravensworth Operations.

MOPL, LCOPL and ROPL (the proponents) propose to modify their respective planning approvals to facilitate Stage 2 of the GRAWTS. The proposed Modification includes the following activities:

- Transfer of tailings from Ravensworth Operations and MOC to Liddell Mine for emplacement within the Liddell South Cut Void
- Continued transfer of tailings from Ravensworth Operations and Liddell Mine to the West Pit Void at MOC (i.e. removing the timeframe limitation on the transfers approved in Stage 1)
- Changes to the conceptual final landform for the Liddell Mine to reflect the emplacement of additional tailings in the Liddell South Cut Void and a strategy to offset the final voids from one another to enhance the stability of the Main Northern Rail Line
- Construction and use of minor ancillary infrastructure including:
    - An end-of-pipe flocculation plant and associated power supply in the vicinity of the Liddell South Cut Void
    - A water reticulation staging station near the Liddell South Cut Void to supply water to the flocculation plant and other infrastructure within the GRAWTS
    - Additional tailings and water management infrastructure between the Liddell South Cut Void and Liddell Entrance Pit Void
    - Realignment of a short section of the existing tailings and water pipelines from the Mt Owen Coal Handling and Preparation Plant to the Liddell voids (South Cut Void and Entrance Pit Void)
    - Additional powerlines, access roads and other minor supporting infrastructure.
- Receipt of tailings from other mining operations in the vicinity of the GRA and emplacement of such tailings within the Liddell South Cut Void (subject to those mining operations obtaining approval to transfer tailings to Liddell)

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- Transfer of water between mining operations in the vicinity of GRA (subject to those other mining operations obtaining approval to send and receive water).

The Modification is sought pursuant to Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 PROPOSED WORKS

The proposed ancillary infrastructure associated with the Modification will be located within areas that are approved for disturbance, except for the pipelines from the Mt Owen coal handling and preparation plant to the Liddell voids. This Aboriginal cultural heritage assessment considers the impacts of the additional disturbance required for the realignment of these pipelines.

1.3 STUDY AREA

The study area represents the area in which ground disturbance impacts associated with the Modification will occur (**Figure 1-2**). A large portion of the study area is within landforms previously modified by approved mining activity and where no archaeological potential remains (**Figure 1-3**). These areas do not require further survey. Only a small portion in the south of the study area is in largely unmodified landforms and requires assessment. This area will be referred to as the Survey Boundary.

1.4 SURVEY BOUNDARY

The Survey Boundary describes the unmodified landforms within the study area in which the impacts associated with the Modification will be located (**Figure 1-2**). The Survey Boundary is located approximately 5.5 kilometres (km) east of Lake Liddell, 2.5 km north of the New England Highway and 200 metres (m) west of Hebden Road.

The Survey Boundary covers an area of approximately 500 m x 100 m (five hectares [ha]).

This document sets out the methodology to be used to identify Aboriginal cultural values, both tangible and intangible, that exist in the Survey Boundary. The results of this investigation will be presented in an *Aboriginal Cultural Heritage Assessment Report* (ACHAR).

Figure 1-2: Aerial showing the relationship between the Study Area and the Survey Boundary.

Figure 1-3: The Study Area and the Survey Boundary superimposed on a 1987 aerial.

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1.5 CONSULTATION ON THIS METHODOLOGY

Consultation for this Modification has followed the guidelines established in the ACHCRs (DECCW 2010b) whereby an advertisement was placed in the local press and relevant agencies were contacted to ascertain if they were aware of groups or individuals who may have cultural knowledge of the region containing the Modification.

On 14 April 2021 an advertisement was placed in the 'Singleton Argus' inviting expressions of interest in being consulted about the Modification. In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Wanaruah Local Aboriginal Land Council (LALC); the Office of The Registrar, ALRA; the National Native Title Tribunal; NTSCORP; Singleton Shire Council; and the Hunter Local Land Services.

As a result, the following individuals/groups registered to be consulted about the Modification (two individuals/groups asked that their names not be made public and will be referred to as Stakeholder 1 and Stakeholder 2):

- Wanaruah Local Aboriginal Land Council
- Didge Ngunawal Clan
- Tocomwall Pty Ltd
- Widescope Indigenous Group Pty Ltd
- AGA Services
- Cacatua Culture Consultants
- Kawul Pty Ltd (trading as Wonn1 Sites)
- Culturally Aware
- Hunter Traditional Owner
- Wattaka Wonnarua C.C. Service
- Aboriginal Native Title Consultants
- Gomery
- A1 Indigenous Services
- Upper Hunter Wonnarua Council Inc
- Stakeholder 1
- Stakeholder 2

These individuals/groups constitute the Registered Aboriginal Parties (RAPs) for the Modification.

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1.5.1 RAP responses to the assessment methodology

A draft of this assessment methodology was sent to all RAPs on 25 May 2021 with a closing date for any comments of 27 July 2021. During this time, responses were received from AGA Services and Cacatua Culture Consultants. Both responses stated: *After a discussion with regards to all its contents both Cacatua and AGA support the documentation the was sent with regards to the Subject.*

1.6 LANDSCAPE CHARACTERISTICS OF THE STUDY AREA

An understanding of the environmental contexts of a study area is requisite in any Aboriginal archaeological investigation (DECCW 2010).

The Survey Boundary is located wholly within the Hunter Subregion of the Sydney Basin Bioregion (SBB). The Hunter subregion is situated at the far north of the SBB and contains the townships of Scone, Muswellbrook, Singleton, Cessnock, Maitland, and the city of Newcastle. The Hunter subregion is predominantly comprised of rolling hills, wide valleys, and the meandering system of the Hunter River on a wide floodplain. A wide range of environments are present within the greater subregion including coastal, dune, estuarine, rainforest, plateau, lowland, riparian, and swamp ecosystems; not all of which are represented in the Project Boundary. The Hunter subregion encompasses the catchments of the Goulburn, Hunter, and Paterson Rivers (NPWS 2003).

Within this bioregion, the study area is located within the Central Hunter Foothills Mitchell Landscape Context. This landscape comprises of undulating lowlands, rounded to steep hills with rock outcrop on ridges. Soils generally consist of red-brown to yellow-brown harsh texture contrast soils on slopes, dark coloured clays in valleys, and limited accumulations of sand and gravel in streams. Vegetation prior to colonial intervention largely consisted of woodlands to open forests of Eucalypts and Kangaroo Grass.

No watercourses intersect the study area, however, there are several nearby. The closest major watercourse is Bowmans Creek, located roughly 560 m west of the study area while Yorks Creek, a minor watercourse, would have been located approximately 185 m east of the study area, although this portion of the creek has been artificially diverted closer to the study area and is now within modified landforms without archaeological potential (**Figure 1-1**).

In NSW there is a strong correlation between the location of Aboriginal sites and the distance to water. The general proximity of watercourses to the study area suggests a heightened potential to reveal archaeological sites, however, as none of the waterways are within the study area, the archaeological sensitivity is diminished slightly.

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2 CULTURAL VALUES

2.1 INTRODUCTION TO CULTURAL VALUES

No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Fundamentally, culture is living and is not static:

- Culture is acquired - we learn about culture from others in our community, including our parents
- Culture is shared - culture does not exist in a vacuum, it is shared amongst a group of people
- Culture defines core values - because we have been taught our culture and share it with our cultural group, we tend to form the same core values
- Cultures resist change but are not static - culture does and can change, but change is usually slow and gradual.

2.1.1 Connection to Country

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups.

Although in the past (and sometimes into the present) there have been conflicts between different tribal groups, these were rarely over land. Aboriginal and Torres Strait Islander people have such a strong sense of belonging to country; they have no desire to own the land of others.

Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

> *"When we say Country we might mean homeland, or tribal or clan area and in saying so we may mean something more than just a place; somewhere on the map. We are not necessarily referring to place in a geographical sense. But we are talking about the whole of the landscape, not just the places on it."*
>
> Professor Mick Dodson AM, August 2007

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2.1.2 Managing Country

Living on this land for more than 60,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area. Aboriginal and Torres Strait Islander people don't see themselves as 'owning' land, animals, plants, or nature, but rather belonging with these things as equal parts of creation.

The rights of different groups to live in and manage certain areas of land are clear and recorded through art, stories, songs, and dance.

Deep cultural and spiritual values like totemism have also played an important part in Aboriginal and Torres Strait Islander resource management. Totemism is a belief and value system that connects human beings to other animals, plants, and aspects of nature. Groups and individuals are assigned a particular animal that they are related to and must care for. This gives them a profound sense of connection to and responsibility for the natural world.

Aboriginal and Torres Strait Islanders people have a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting, and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

Even before 1788 there were complex relationships for long distance trade between Aboriginal and Torres Strait Islander communities especially for coastal shells and stone hatchets. When people from different groups met socially to share resources, for ceremonies or to settle disputes, they brought items to exchange. Items included stones for hatchets, kangaroo skins, timber for spears, ochre or clay for paint, and marine shells for decoration.

The exchange of objects was not motivated by a desire for wealth accumulation but a social system to build connection between people and groups.

2.1.3 Recognising lore

In Aboriginal and Torres Strait Islander communities, codes of conduct cover behaviour around:

- Leadership and etiquette
- Property
- Laws around special events like marriage, coming of age and death
- Sacred knowledge.

In much of eastern Australia, Aboriginal communities live their lives like most Australians without resorting to tribal lore. However, in certain crucial areas, particularly associated with family,

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leadership roles, and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

2.2 IDENTIFYING CULTURAL VALUES

A major aim of this assessment is to identify any cultural values associated with the landscape in which the Modification is located so that those values can be recognised and incorporated into the Modification's management recommendations.

Any cultural values relating to the Survey Boundary will be captured by the OzArk archaeologists (if such information is provided by RAPs during the survey) and included in the ACHAR.

In addition, should any RAPs have knowledge of cultural values regarding the study area that they wish to share or that may affect the survey methodology set out in **Section 5**, OzArk invites them to contact us so that these values can be recorded and/or responded to in the methodology.

Understanding cultural landscapes can only come from the views of a particular community, in this case, the Aboriginal community. Unless informed, OzArk will not know of the community's feelings towards the cultural landscape in which the Modification is located. OzArk, therefore, invites any information on the cultural landscape within and surrounding the study area to be forwarded to OzArk, either by telephone, mail, or e-mail. Any information received will be treated according to the conditions set out below.

2.2.1 Use of information collected

An ACHAR will be prepared for the Modification which articulates Aboriginal cultural values and associated conservation methods across the study area, as identified during the consultations. The ACHAR will be circulated to all RAPs for comment as is set out in the ACHCRs. The ACHAR will be considered by Heritage NSW in its assessment of the Modification. The report will be publicly available.

2.2.2 Public / confidential information

Information will be treated in accordance with instructions received by Aboriginal participants. Information described as confidential (culturally sensitive) will not be detailed in the publicly available report. Confidential information should be made available to the proponent, its heritage consultants, and Heritage NSW so that significant cultural values can be conserved. On advice from the provider of the information, a redacted ACHAR would be made available to the wider public where any sensitive cultural information is removed.

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2.2.3 Copyright

Information collected for this assessment remains the property of the Aboriginal informants and the author. Without written permission from individual informants and the author information may not be used for purposes other than those outlined above.

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3 ARCHAEOLOGICAL CONTEXT

3.1 ABORIGINAL PEOPLE OF THE PROJECT BOUNDARY

The study area is in the Wonnarua tribal area of the upper Hunter Valley (Tindale 1974).

The Wonnarua people lived in an environment rich in food resources. Freshwater fish, shellfish, reptiles, mammals, birds, and plant food provided a diverse diet (see Brayshaw 1981). Brayshaw (1986: 82) suggests that inland groups visited the coast during the summer when marine resources were plentiful, and coastal groups travelled inland to participate in the winter kangaroo hunts. Trade and/or exchange also occurred between the coastal and inland groups. Reed spears and shells were traded inland for possum skin rugs and fur cord (Brayshaw 1986: 41).

The only known ethnographic information on the use of stone artefacts relates to the use of stone hatchets as multi-purpose tools and of the attachment of quartz flakes as barbs on spears (Brayshaw 1986: 66, 68). There is also little ethnographic evidence concerning the locations of regional Aboriginal camping places, however, the factors of proximity to fresh water and of elevation for visibility are mentioned as important considerations (Fawcett 1898).

3.2 COLONIAL OCCUPATION

Due to its proximity to Sydney, its nutrient rich alluvial soils, grazing pastures for livestock and cedar trees on the higher terraces of the valley, the Hunter Valley was a desirable location for early colonial settlement. Within a short timeframe, the Aboriginal people of the area had to deal with the depletion of their resources and major changes to the environment caused by ill-informed colonial farming practices.

The early colonial settlers observed valleys of grassland and rich alluvial soils adjacent to the major waterways that were ideal for agriculture and cattle/sheep grazing, and soon the prime land was occupied. But the allure of the area continued and as more colonists settled in the Hunter Valley the more marginal hill slopes were occupied and cleared of standing timber.

As noted by Tocomwall (2017: 35):

> *By 1825 more land was owned by the new settlers and the original Aboriginal inhabitants became increasingly disenfranchised from their traditional lands. The invasion by the European settlers changed the distribution of vegetation, with increasing landscape instability as a result of the logging of the forested areas around the higher elevations and the clearing of the brush around the understorey and along the tributaries for agriculture and pastoral farming. Aboriginal dependence of the Hunter River for many staples meant that the Wonnarua suffered severely when the Europeans settled: they immediately lost access to water and the raw materials in the river and on the banks. They also lost their game to the intruders who chased kangaroos in hunts to reduce competition for their introduced grazing animals;*

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shellfish and fish populations also declined. Breton (1833) wrote that he only noted 16 kangaroos, in contrast to a previous visit to the area when they had numbered in the hundreds. The loss of fish for protein and the loss of managed plains for game hunting and seed gathering destroyed long established hunting and gathering practices of the Aboriginal community. This exclusion and alteration of the landscape by the Europeans brought them into conflict with the local Wonnarua People.

Conflict between the Wonnarua and colonial settlers is documented in the wider region of the study area. AHIMS site 37-3-0390 (Upper Hunter Valley Massacre Site) is located on the western side of the New England Highway approximately 4.5 km south of the study area. This site recording registers the historic account of the murder of 18 Aboriginal people in 1827, however, primary source historic information has this event occurring in September 1826. While the exact location of this massacre may now be extremely difficult to pin-point, the historical accounts show that the wide-spread frontier war that accompanied the first colonial settlement of Aboriginal lands across Australia (i.e. Gapps 2018), also occurred in the Hunter Valley.

Further details on the history of early colonial settlement of the Hunter Valley have been extensively researched by Dr Mark Dunn (Dunn 2020).

3.3 ARCHAEOLOGICAL CHARACTERISTICS OF THE REGION

Evidence from the Central Lowlands sub-region of the Hunter Valley (broadly between Murrurundi in the north and Cessnock in the southeast), suggests that archaeological material is scattered almost continuously, but in varying density, along most creek banks and flats. It has been suggested that archaeological material is primarily contained in a corridor approximately 100 m wide on either side of a creek channel (Koettig 1990: 13).

In broad terms, these open artefact scatters appear to be confined to the A-Horizon of the soil (topsoil) profile which is generally less than 50 centimetres (cm) in depth (Hughes 1981; Stern 1981). These sites are often disturbed, and stratification is unclear (Hughes 1984: 8). Artefacts are generally manufactured from indurated mudstone, sometimes called tuff, and silcrete, with quartz, petrified wood, and chert occurring less frequently (Hiscock and Koettig 1985). Features found at open surface scatters include hearths, pits, ovens, and heat treatment areas (Burton et al. 1990). These sites are generally detected where some form of ground disturbance has occurred, for example erosion due to both cultural and non-cultural processes, and thus the extent of the site is often difficult to determine. Often the density of artefacts on the surface do not relate to the amount of subsurface archaeological material (see Koettig 1990: 15).

Archaeological excavations have so far determined that human occupation of the Hunter Valley has occurred since the last Glacial Maximum approximately 27,000–17,000 years before present (HLA 2005). It is hypothesised that evidence predating this period will likely be discovered in the future.

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A review of GHD (2005), HLA (2005) and Umwelt (2007a) provides the following regional synthesis:

- Archaeological sites, even where surface evidence is not present, occur on most landforms. This was confirmed by an HLA-Envirosciences (2005) excavation program, in which Aboriginal sites were encountered on alluvial terraces, flats, slopes, bench areas, spurs, and ridgelines. HLA-Envirosciences acknowledges that the sample areas were biased somewhat as they were all near creek lines
- Site frequency and density are dependent on their location in the landscape. This theme is consistent throughout NSW and is influenced by a range of factors, the most relevant of which the existing level of disturbance. More specifically, the potential for undisturbed in situ deposits remaining in the upper Hunter Valley on a mining property is generally low
- The highest concentration of Aboriginal sites on the floor of the Hunter Valley is associated with creeks and other watercourses
- Few scarred trees are recorded reflecting the high degree of tree clearing in the region
- The most frequently recorded raw material is indurated mudstone (tuff) (a fine gained siliceous material) associated with Hunter River gravels. Other frequently recorded materials include locally sourced silcrete, quartz, and volcanic stones
- Assemblages recorded in the region consist largely of unmodified flakes with few formed tools. Backed blades comprise the characteristic diagnostic artefact in the region. The mid- to late-Holocene appears to have witnessed this move to smaller tools, perhaps as an impetus to conserve raw material during tool manufacture or due to new functionality requirements. This impetus seems to have driven the development of what Hiscock (1993) calls the Redbank A Strategy (RAS, after three sites along Redbank Creek at the United Colliery south of Singleton) of backed blade production. It is noted that RAS reduction has been infrequently recorded at other sites in the district, including at a recent large archaeological investigation at the United Wambo Open Cut mine (OzArk 2021).

3.4 REGIONAL ARCHAEOLOGICAL CONTEXT

A very large amount of archaeological assessment has been undertaken in the Hunter Valley and a comprehensive review of this is beyond the scope of this methodology. Consequently, only a brief local archaeological context that focuses on recent work near the study area is provided below.

Umwelt 2001: Aboriginal Archaeological Assessment Liddell Colliery Continued Operations

Umwelt (2001) completed an archaeological survey of 1,374 ha for the continuation of open cut mining at the Liddell Mine, on the western side of Bowmans Creek. Twelve isolated finds and 25 artefact scatters were recorded during the survey. The survey found that the most extensive sites were recorded along the major drainage lines of Bayswater Creek, Chain of Ponds and Bowmans Creek, and their tributaries. Most sites were located on drainage depressions, stream channel banks, and/or their associated flats.

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Indurated mudstone was the dominant raw material (58%), followed by silcrete (31%). Other materials represented in lower numbers included quartz, chert, volcanics, petrified wood, hornfels, quartzite, river pebble, chalcedony, sandstone, and siltstone.

OzArk 2013: Aboriginal and Historic Heritage Assessment, Liddell Coal Operations, Modification 5 to Development Consent DA 305-11-01

OzArk's assessment of the Development Modification 5 at Liddell Coal Operations (2013) is located west of the study area. New recordings were made and the findings from the assessment indicated a strong association between sites and watercourses such as Bowmans Creek and Chain of Ponds. There were, however, a number of sites on ridge lines and slopes, on the western side of Bowmans Creek. Sites in this type of landscape were either low density artefact scatters or isolated finds with little or no subsurface deposit.

OzArk 2015: Aboriginal Due Diligence Archaeological Assessment: Greater Ravensworth Tailings Pipeline

The OzArk assessment included areas to the immediate south of the study area. While the overall assessment recorded no Aboriginal sites, several areas of archaeological sensitivity were recorded near Bowmans Creek in relatively undisturbed areas. The closest sensitive area to the study area, Sensitive Area 2, is a 100 m to 150 m area to the east of Bowmans Creek, on a roughly level area on the mid-slope of a hill. Sensitive Area 2 is bound on the north by an ephemeral watercourse and to the south by the fence line that marked the southern edge of the 2015 study area. The eastern and western extents are defined by the break of slope uphill and downhill. While this area was avoided by works associated with the Greater Ravensworth Tailings Pipeline and has been fenced, no Aboriginal objects were recorded, and the area is not registered on the Aboriginal Heritage Information Management System (AHIMS). At its closest, Sensitive Area 2 is approximately 330 m west of the study area.

OzArk 2019: Aboriginal Archaeology Impact Assessment. Glendell Continued Operations Project

The fieldwork component of this assessment consisted of survey and test excavation undertaken by OzArk, RAPs, and Wonnarua Knowledge Holders over the course of several weeks in April, May, and September 2018. The 2019 OzArk study area was adjacent to but not within the southern portions of the study area.

Sixty-nine previously unrecorded sites were recorded during the survey consisting of 39 artefact scatters, 29 isolated finds, and one scarred tree. Of the artefact scatters, 32 sites recorded less than 10 artefacts and no site contained more than 70 artefacts. At nine locations it was assessed that there are subsurface deposits. None of the recorded sites were remarkable in their manifestation; either in terms of the types of artefacts recorded, the raw material the artefacts were manufactured from, or the density and nature of the surface artefact manifestation.

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The test excavation program involved excavation of 152 excavation squares (0.5 m x 0.5 m) at 12 separate localities: a total of 38 square metres. From this area of excavation, 180 artefacts were recovered: an average of 4.7 artefacts per square metre or 1.18 artefacts per excavation square. This density of artefacts was noted as being extremely low, and only two excavation squares recorded more than 15 artefacts. Most of the squares had what can be described as a very truncated A1-Horizon and a leached A2-Horizon, and the implication drawn was that the landscape has been subject to the stripping of the A1-Horizon and the exposure of the A2-Horizon. The implicit conclusion is, therefore, that the landscape has undergone a high general disturbance from soil loss that has compromised the archaeological deposits across the 2019 OzArk study area. As such, the general condition of the archaeological landscape within the general area was assessed to be poor.

No evidence of colonial conflict or skeletal remains was identified during the survey or test excavation programs for the Glendell Continued Operations Project. As such, nothing in the OzArk 2019 archaeological assessment was able to corroborate or extend the scant information the written sources provide regarding colonial conflict in the area.

3.5 LOCAL ARCHAEOLOGICAL CONTEXT

A search of the AHIMS database on 17 May 2021 returned 58 results for Aboriginal sites within a 2 km radius of the Survey Boundary (GDA Zone 56 Eastings: 315790–319090; Northings: 6412290–6415610 with no buffer) (see **Table 3-1** for site types and frequencies and **Figure 3-1** for the location of sites in relation to the Project Boundary). No AHIMS sites are located within the study area.

The distribution of AHIMS sites shows that most AHIMS sites are associated with watercourses, and while low density artefact sites can be recorded in any landform, potential archaeological deposits (PADs) and modified trees are all closely associated with watercourses. The most frequently recorded site type is artefact scatters (94.8% of site types inclusive of sites listed as containing both surface artefacts and PAD). These also represent the site types of the four sites closest to the Survey Boundary. The next most frequent site type is areas of PAD (12%). Four such sites are located between 585 m and 930 m southwest of the Survey Boundary, along Bowmans Creek. The only other site type near the Survey Boundary are modified trees, and one modified tree site is located approximately 1.6 km south west of the Survey Boundary on the western bank of Bowmans Creek.

The AHIMS data therefore suggests that the most likely site type to be recorded within the Survey Boundary are artefact sites. While PAD sites and modified tree sites are present within the immediate search area, the likelihood of these sites occurring decreases in landforms such as the Survey Boundary that are distant to water.

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Table 3-1: AHIMS site types and frequencies.

Site Type	Number	% Frequency
Artefact Site	50	86.2
Artefact Site & Potential Archaeological Deposit (PAD)	5	8.6
Potential Archaeological Deposit (PAD)	2	3.4
Modified Tree (Carved or Scarred)	1	1.7
Total	**58**	**100**

3.6 ARCHAEOLOGICAL CONTEXT: CONCLUSION

The archaeological investigations surrounding the study area summarised in **Sections 3.3** to **3.5** indicate that:

- Stone artefact sites (isolated finds and artefact scatters) are the most recorded site types in the area and have potential to be recorded in the Survey Boundary. Other site types, such as PADs, are unlikely given the distance of the study area from permanent water sources
- Scarred trees can appear wherever appropriate mature aged trees are located, although it is noted that this site type will be rare as the Survey Boundary has been almost entirely cleared, and the trees that are present are regrowth vegetation (note the lack of trees in the 1987 aerial of the Project Boundary shown on **Figure 1-3**)
- The most likely indicator of potential sites is areas of exposure within proximity of fresh water
- The common stone types utilised for stone tool manufacture are mudstone (tuff) and silcrete
- Sites on slopes are generally in a secondary context having been displaced by erosional processes. The exception is where there is outcropping rock as this feature may have attracted occupation or use.

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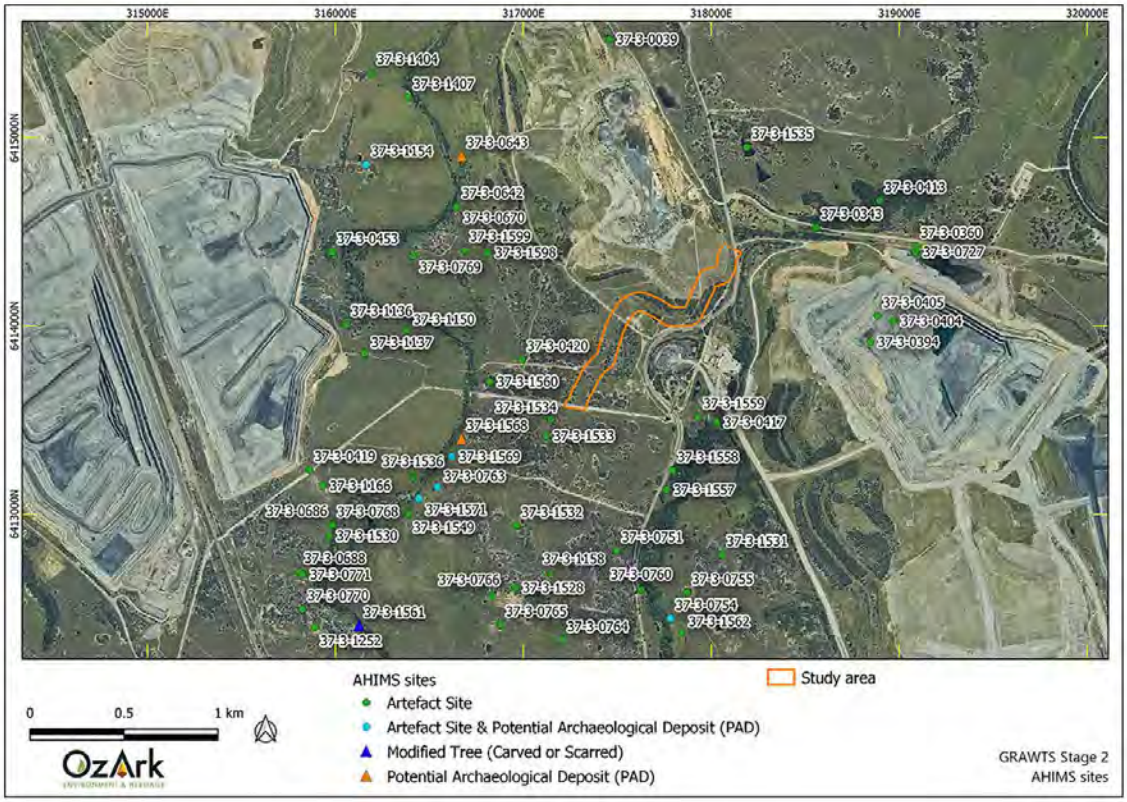
Figure 3-1. AHIMS sites in proximity to the Study Area.



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4 PREDICTIVE MODEL

4.1 LANDFORM MODELLING

Previous studies in the district indicate that sites are largely located along drainage depressions, stream channel banks and/or their associated flats. A number of sites have also been located on ridge lines and slope landforms, although these often have a low artefact density and are typically isolated artefacts. It has been discussed that archaeological sites tend to be associated with permanent sources of water as can be seen in the clustering of sites around Bowmans Creek and the scattering of sites near minor creek systems such as Yorks Creek. However, such watercourses are absent from the Survey Boundary.

The land immediately surrounding the Survey Boundary is currently used for mining operations, and the Survey Boundary has been subjected to widespread vegetation clearing and long-term grazing. This agricultural land use has likely caused soil loss, and potentially the loss of archaeological deposits, across the Survey Boundary.

4.2 PREDICTIVE MODEL FOR THE SURVEY BOUNDARY

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including plant and animal foods, stone and ochre resources and rock shelters, as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes, or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of colonial farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

The archaeological studies undertaken in the vicinity of study area provide an insight into the nature and distribution of archaeological sites within the area. However, the location of sites can

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only reflect what has been identified, usually because of infrastructure/development-driven projects, thus presenting the site data as clustered in areas that have been previously assessed.

Based on knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded:

Isolated finds may be indicative of a random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.

- As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Survey Boundary. As the Survey Boundary is within landforms distant to water, the likelihood of recording this site type, as opposed to artefact scatters, is increased.

Open artefact scatters are here defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Stone artefact distributions of variable artefact densities are the most common Aboriginal object found within the region. A general correlation between landform and the nature of the evidence of past Aboriginal occupation is evident. Higher artefact density sites are located on elevated landforms adjacent to watercourses. The Survey Boundary contains no locations close to permanent or semi-permanent watercourses, and should artefact

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scatters be present, they will likely have a low artefact density and display a low complexity of artefact types.

Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed as a consequence of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any particular example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematic because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- Large portions of the Survey Boundary have been cleared for agricultural activities and review of historical aerial imagery (**Figure 1-3**) indicates that any trees currently in the Survey Boundary are regrowth vegetation. As such, this site type is unlikely to be recorded in the Survey Boundary.

Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.

- This site type is unlikely to be recorded within the Survey Boundary as quarry sites are not commonly recorded in the district and aerial imagery does not indicate that there are rock outcrops in the Survey Boundary.

Grinding grooves are most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have been recorded on fine-grained granite outcrops.

- This site type has not been identified near the Survey Boundary and there are no watercourses present that are often associated with this site type. As such, this site type is unlikely to be recorded in the Survey Boundary.

Burials are generally found in soft sediments such as aeolian sand, alluvial silts, and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are generally only visible where there

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has been some disturbance of sub-surface sediments or where some erosional process has exposed them.

- This site type is unlikely to be recorded both due to the limited extent of the Survey Boundary, as well as the historic land use that may have disturbed and/or dispersed burials (had they been present). It is recognised that the region has seen frontier violence in the early days of colonial settlement, however, extensive investigations in surrounding landforms have failed to record any burials associated with these events.

Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

- The distribution of ceremonial sites and Bora grounds across the landscape is somewhat unpredictable as the choice of their location is based on spiritual reasons rather than simply landscape features and resources. Given the limited extent of the Survey Boundary, and the fact that this site type is rare in the region, this site type is predicted to be rare in the Survey Boundary.

4.3 FACTORS LIMITING THE RECORDING OF SITES

The Survey Boundary is within areas of some disturbance from historical agricultural land use. The implication is that, due soil loss related to vegetation clearing and long-term grazing, intact archaeological deposits (had they existed) are likely to have been dispersed.

There is also a lack of watercourses within the Survey Boundary. As the distance from water increases, the likelihood of archaeological sites being present decreases.

4.4 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the Survey Boundary. These research questions include:

- What resources were available to the Aboriginal people using the land within the Survey Boundary and what tasks were Aboriginal people undertaking at the sites?
- Is there potential for burials to be present in the landscape?
- Can dates be obtained for the Aboriginal use of the area? Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene?
- Establish how the findings within the Survey Boundary (if any) accord with the regional archaeological context examined in **Section 3.2**.

The survey methodology set out in **Section 5** will be framed to help answer these questions; should sites of sufficient significance be encountered. However, based on the results of previous assessments, the limited size of the Survey Boundary, and past disturbances, it not expected that the Survey Boundary will contain sites of sufficient significance to help answer those research questions that require a robust data set.

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5 SURVEY METHODOLOGY

5.1 ASSESSMENT APPROACH

The Aboriginal cultural heritage assessment of the Survey Boundary will follow the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010). The field inspection will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

Survey for Aboriginal cultural heritage values will concentrate on the Survey Boundary and not the broader study area. All impacts to unmodified landforms associated with the Modification will be located within the Survey Boundary.

5.2 SURVEY AIMS

The aim of any archaeological survey is not to locate every artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within the Survey Boundary are known. However, as the Survey Boundary is relatively small, the entire area will be inspected. Therefore, the aims of the survey will be to:

- Inspect the Survey Boundary so that archaeological potential can be determined
- Evaluate whether the predictive model set out in **Section 4.2** is valid
- Determine if the research questions set out in **Section 4.4** can be answered
- Determine if any landforms of the Survey Boundary require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment to satisfy Sections 2.2, 2.4, 2.5, 2.6, and 2.7 in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (the Guide; OEH 2011)
- Collect sufficient data so that the results can be presented in an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) as set out in Section 3 in the Guide
- Undertake survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

5.3 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004) and it will follow the Code of Practice.

Survey will be restricted to the Survey Boundary and will consist of full pedestrian survey. This will include the survey team walking survey transects spaced no more than 10 m apart. Although not expected to be an issue in the Survey Boundary, deviations from the survey transect may be required due to thick vegetation or other physical barriers. It is envisioned that there would be three north–south survey transects to cover the 100 m wide Survey Boundary. This may be limited

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to two transects on the day of survey if agreed to by all in the survey team. Such a reduction may be due to there being low ground surface visibility to the point that an additional survey transect is unwarranted. Survey will focus on areas of exposure but will also include landforms outside of exposures to ensure that the full range of ground types within the Survey Boundary are assessed.

Survey will consist of one archaeologist and accompanying RAPs investigating the entirety of the Survey Boundary. The archaeologist will be responsible for recording landform type, ground surface visibility, visible disturbances, and recording any sites encountered to statutory and professional standards. RAPs will assist with site identification, as well as providing any cultural values they wish to share (see **Section 2**) regarding site recordings and/or the landforms within the Survey Boundary more broadly.

5.4 TEST EXCAVATION

It is possible that the survey may identify landforms where test excavation under the Code of Practice (Requirements 14–17) is required. Test excavation will take place under the circumstances noted in Section 3.1 of the Code of Practice:

> *Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity.*

Should such landforms be identified during the survey, the test excavation methodology will be prepared as a separate document that will be circulated to all RAPs for review and comment.

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APPENDIX 4: AHIMS SEARCH

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Extensive search - Site list report

Your Ref/PO Number : GRAWTS
Client Service ID : 591294

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-3-0727	Yorks Creek (Mt Owen Mine) 2	AGD	56	318980	6414200	Open site	Valid	Artefact : 12		100256
Contact	Searle	Recorders	Mr.Barry Anderson					Permits	2604	
37-3-1154	HAZ2-OS1 with PAD	GDA	56	316164	6414856	Open site	Valid	Artefact :-, Potential Archaeological Deposit (PAD) :-		
Contact		Recorders	Doctor Jodie Benton,OzArk Environmental and Heritage Management					Permits		
37-3-1136	LID ES1	GDA	56	316057	6414006	Open site	Partially Destroyed	Artefact : 3		
Contact		Recorders	Umwelt (Australia) Pty Limited - Individual users,Miss.Nicola Roche,Mr.Nicholas Ja					Permits	3765	
37-3-1137	LID ES2	GDA	56	316154	6413852	Open site	Destroyed	Artefact : 2		
Contact		Recorders	Umwelt (Australia) Pty Limited - Individual users,Miss.Nicola Roche,Mr.Nicholas Ja					Permits	3765	
37-3-1150	LID 34	GDA	56	316379	6413975	Open site	Partially Destroyed	Artefact : 3		
Contact		Recorders	Umwelt (Australia) Pty Limited - Individual users,Miss.Nicola Roche					Permits	3765	
37-3-0404	Ravensworth east 2	GDA	56	318969	6414024	Open site	Destroyed	Artefact :-	Isolated Find	
Contact		Recorders	Ms.Alison Nightingale					Permits		
37-3-0405	Ravensworth east 3	GDA	56	318885	6414052	Open site	Destroyed	Artefact :-	Open Camp Site	
Contact		Recorders	Ms.Alison Nightingale					Permits		
37-3-0413	rav east 30	GDA	56	318895	6414664	Open site	Destroyed	Artefact :-	Isolated Find	
Contact		Recorders	Adam Ford					Permits		
37-3-0417	rav east 25	GDA	56	318028	6413487	Open site	Destroyed	Artefact :-	Isolated Find	
Contact		Recorders	Adam Ford					Permits		
37-3-0419	rav east 24	GDA	56	315860	6413234	Open site	Destroyed	Artefact :-	Isolated Find	
Contact		Recorders	Adam Ford,OzArk Environmental and Heritage Management,Mr.Ben Churcher					Permits	3765	
37-3-0420	rav east 23	AGD	56	316885	6413629	Open site	Destroyed	Artefact :-	Isolated Find	
Contact		Recorders	Adam Ford,Ms.Alison Lamond					Permits		
37-3-0394	Ravensworth East 4	AGD	56	318739	6413721	Open site	Destroyed	Artefact :-	Open Camp Site	
Contact		Recorders	Ms.Alison Nightingale					Permits		
37-3-0642	Liddell Pipeline 1	GDA	56	316646	6414633	Open site	Destroyed	Artefact :-		100666
Contact		Recorders	Janice Wilson					Permits	2198	
37-3-0643	Bowmans Creek 1 PAD	AGD	56	316564	6414709	Open site	Valid	Potential Archaeological Deposit (PAD) :-		
Contact	S Scanlon	Recorders	Janice Wilson					Permits	2213	
37-3-0760	Yorks Creek 17	GDA	56	317626	6412595	Open site	Valid	Artefact : 1		
Contact		Recorders	Janice Wilson,OzArk Environmental and Heritage Management,Miss.Stephanie Rus					Permits		

Report generated by AHIMS Web Service on 17/05/2021 for Taylor Foster for the following area at Datum :GDA, Zone : 56, Eastings : 315790 - 319090, Northings : 6412290 - 6415610 with a Buffer of 0 meters. Additional Info : Archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 58

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Your Ref/PO Number : GRAWTS
Client Service ID : 591294

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-3-0763	Bowmans Ck 7	GDA	56	316542	6413142	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) :-		
Contact		Recorders	Janice Wilson,OzArk Environmental and Heritage Management,Mr.Thomas Dooley					Permits		
37-3-0764	Bowmans Ck 8	GDA	56	317205	6412329	Open site	Valid	Artefact : 4		
Contact		Recorders	Janice Wilson					Permits		
37-3-0765	Bowmans Ck 9	GDA	56	316878	6412410	Open site	Valid	Artefact : 2		
Contact		Recorders	Janice Wilson					Permits		
37-3-0766	Bowmans Ck 10	GDA	56	316833	6412566	Open site	Valid	Artefact : 7		
Contact		Recorders	Janice Wilson					Permits		
37-3-0768	Bowmans Ck_13	GDA	56	315982	6412940	Open site	Valid	Artefact : 5		
Contact		Recorders	Janice Wilson					Permits		
37-3-0769	Bowmans Ck 14	GDA	56	316413	6414370	Open site	Valid	Artefact : 1		
Contact		Recorders	Janice Wilson					Permits		
37-3-0770	Bowmans Ck 11	GDA	56	315824	6412493	Open site	Valid	Artefact : 50		
Contact		Recorders	Janice Wilson					Permits		
37-3-0771	Bowmans Ck 15	GDA	56	315825	6412677	Open site	Valid	Artefact : 55		
Contact		Recorders	Janice Wilson					Permits		
37-3-0751	York Creek 8	GDA	56	317496	6412805	Open site	Valid	Artefact : 1		
Contact		Recorders	Janice Wilson,OzArk Environmental and Heritage Management,Miss.Stephanie Rus					Permits		
37-3-0754	Yorks Creek 11	GDA	56	317782	6412443	Open site	Partially Destroyed	Artefact : 9, Potential Archaeological Deposit (PAD) :-		
Contact		Recorders	Janice Wilson,OzArk Environmental and Heritage Management,Mr.Thomas Dooley					Permits		
37-3-0755	Yorks Creek 12	GDA	56	317870	6412581	Open site	Valid	Artefact : 3		
Contact		Recorders	Janice Wilson,OzArk Environmental and Heritage Management,Miss.Stephanie Rus					Permits		
37-3-1166	LIDEE - IF3	GDA	56	315930	6413149	Open site	Valid	Artefact : 1		
Contact		Recorders	OzArk Environmental and Heritage Management					Permits		
37-3-1158	RPS DLW IF1	GDA	56	317148	6412677	Open site	Valid	Artefact : 1		
Contact		Recorders	Ms.Gillian Goode,RPS Australia East Pty Ltd - Hamilton					Permits		
37-3-1252	REA439	GDA	56	315891	6412396	Open site	Destroyed	Artefact :-		
Contact		Recorders	Ms.Alison Lamond,Ms.Alison Lamond					Permits		
37-3-1536	Glendell North OS7	GDA	56	316412	6413195	Open site	Valid	Artefact :-		
Contact		Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1549	Glendell North OS8	GDA	56	316386	6412999	Open site	Valid	Artefact :-		
Contact		Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
37-3-1557	Glendell North OS4	GDA	56	317761	6413127	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1558	Glendell North OS3	GDA	56	317792	6413230	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1559	Glendell North OS2	GDA	56	317930	6413515	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1560	Glendell North OS1	GDA	56	316820	6413702	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1561	Glendell North ST1	GDA	56	316124	6412405	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1568	Glendell North PAD1	GDA	56	316670	6413398	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,OzArk Environmental and Herita					Permits		
37-3-1569	Glendell North OS5	GDA	56	316619	6413304	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,OzArk Environmental and Herita					Permits		
37-3-1571	Glendell North OS6	GDA	56	316443	6413081	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,OzArk Environmental and Herita					Permits		
37-3-1528	Glendell North IF8	GDA	56	316956	6412606	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1530	Glendell North IF6	GDA	56	315966	6412883	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1531	Glendell North IF5	GDA	56	318054	6412783	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1532	Glendell North IF4	GDA	56	316962	6412937	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1533	Glendell North IF3	GDA	56	317120	6413414	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1534	Glendell North IF2	GDA	56	317146	6413503	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1535	Glendell North IF1	GDA	56	318189	6414948	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 17/05/2021 for Taylor Foster for the following area at Datum :GDA, Zone : 56, Eastings : 315790 - 319090, Northings : 6412290 - 6415610 with a Buffer of 0 meters. Additional Info : Archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 58

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Office of Environment & Heritage NSW

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : GRAWTS
Client Service ID : 591294

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-1562	Glendell North OS37	GDA	56	317843	6412369	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Stephanie Rusden					Permits		
37-3-0343	Mt Owen (1996) 1:MtO1:	AGD	56	318450	6414330	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Ms.Jill Ruig					Permits		
37-3-0360	Mt Owen (1996)_2:	AGD	56	318980	6414230	Open site	Valid	Artefact : -	Isolated Find	3569
	Contact	Recorders	Ms.Jill Ruig					Permits		
37-3-0039	Stringybark Creek:	AGD	56	317349	6415329	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	ASRSYS					Permits		
37-3-0453	LID2	AGD	56	315874	6414199	Open site	Valid	Artefact : -		100666,10088 6
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users					Permits		
37-3-0670	Liddell Pipeline	GDA	56	316646	6414633	Open site	Partially Destroyed	Artefact : -		
	Contact	Recorders	Janice Wilson					Permits		
37-3-0686	Bowmans Ck 13	AGD	56	315877	6412751	Open site	Valid	Artefact : 5		
	Contact T Russell	Recorders	Umwelt (Australia) Pty Limited - Individual users					Permits		
37-3-0688	G12	AGD	56	315700	6412500	Open site	Valid	Artefact : -		
	Contact T Russell	Recorders	Rex Silcox					Permits		
37-3-1404	Liddell Bowmans Ck OS2	GDA	56	316193	6415344	Open site	Valid	Artefact : -		103769
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Philippa Sokol					Permits		
37-3-1407	Liddell Bowmans Ck OS1	GDA	56	316386	6415213	Open site	Valid	Artefact : -		103769
	Contact	Recorders	OzArk Environmental and Heritage Management,Miss.Philippa Sokol					Permits		
37-3-1598	LTM-IF1	GDA	56	316810	6414388	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Mr.Harrison Rochford					Permits		
37-3-1599	LTM-IF2	GDA	56	316687	6414403	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Mr.Harrison Rochford					Permits		

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