Aerial of the study area showing the Bangus Quarry in the mid-distance.

ABORIGINAL ARCHAEOLOGICAL IMPACT ASSESSMENT

BANGUS QUARRY LANDFILL

COOTAMUNDRA GUNDAGAI LGA

OCTOBER 2019

Report prepared by

OzArk Environment & Heritage

for Salvestro Planning

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Acknowledgement

OzArk acknowledge Traditional Owners 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.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Salvestro Planning and Insitu Advisory (the clients), on behalf of MH Earthmoving Pty Ltd (the proponent) to complete an Aboriginal Archaeological Impact Assessment (AAIA) of the Bangus Quarry over Lot 7004 DP1028797 and Lot 7300 DP11449008, with the stockpile area on Lot 10 DP1210362. The Bangus Quarry is proposed to be used as a general solid waste (non-putrescible) landfill site (the proposal). The proposal is in the Cootamundra Gundagai Local Government Area.

The assessment of the study area was undertaken by OzArk on the Friday, 27 September 2019. Peter Bulger from Bungle Tumut Local Aboriginal Land Council was present for the survey.

No Aboriginal sites were recorded as a result of the field survey. In addition, due to the extent of past landform modification in some portions of the study area and the sloping nature of the unmodified landforms, it was assessed that there was a low possibility for subsurface archaeological deposits in the study area.

Recommendations concerning Aboriginal cultural values within the study area are as follows:

1. No Aboriginal objects will be harmed by the proposal. As such, an Aboriginal Heritage Impact Permit is not required, and the works can proceed without further archaeological investigation.
2. As no Aboriginal cultural heritage values will be impacted by the proposal, undertaking the *Aboriginal cultural heritage consultation requirements for proponents* or the development of an *Aboriginal Cultural Heritage Assessment Report* are not required.
3. This assessment is confined to within the assessed study area. Should the parameters of the proposed work extend beyond these assessed locations, the further archaeological assessment may be required.
4. All staff involved with the Bangus Quarry landfill activities should be aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol* (**Appendix 3**).
5. In the event of skeletal remains being identified during the works, the *Unanticipated Skeletal Remains Protocol* (**Appendix 4**) should be followed.
6. All staff involved with the Bangus Quarry landfill activities should undergo cultural heritage induction to ensure they recognize Aboriginal artefacts. A sample guide is provided in **Appendix 5**.

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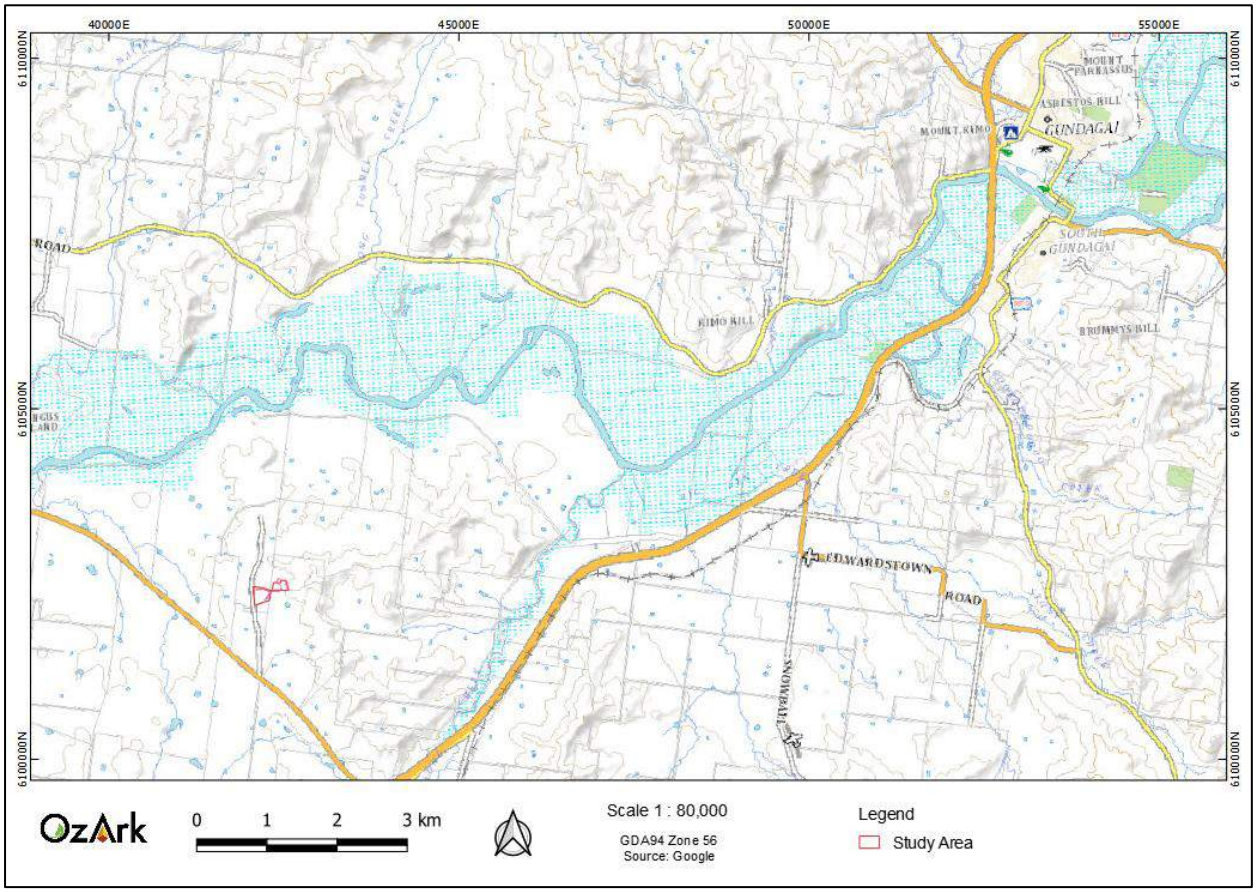
1 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by Salvestro Planning and Insitu Advisory (the clients), on behalf of MH Earthmoving Pty Ltd (the proponent) to complete an Aboriginal Archaeology Impact Assessment (AAIA) of the Bangus Quarry. The Bangus Quarry is proposed to be used as a general solid waste (non-putrescible) landfill site (the proposal). The proposal is in the Cootamundra Gundagai Local Government Area (LGA) (**Figure 1-1**).

The proponent requires development consent in accordance with the provisions of Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act).* The development application will be accompanied by an *Environmental Impact Stations* (EIS) as the proposal is classified as "Designated Development".

Figure 1-1: Map showing the location of the proposal.

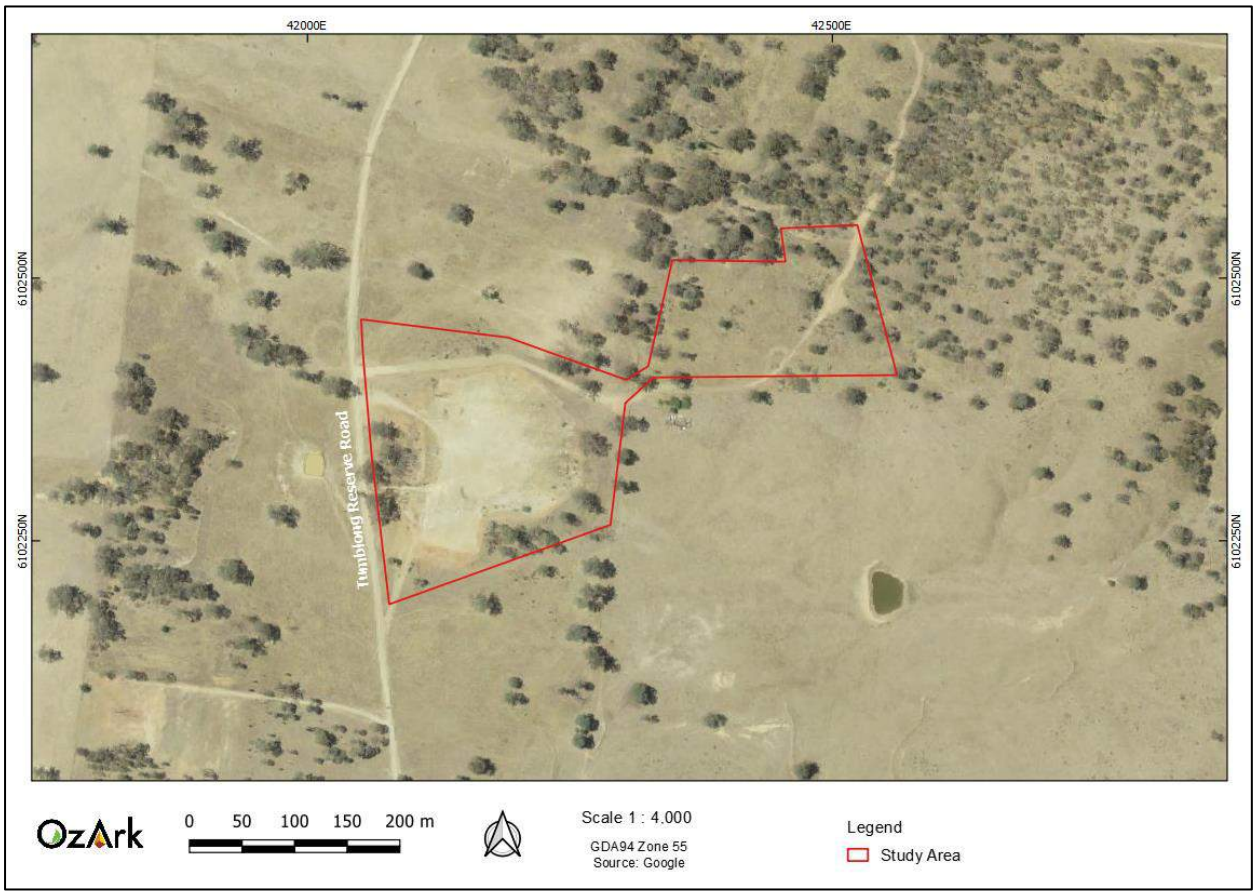


1.2 STUDY AREA

The study area covers the entirety of the Bangus Quarry over Lot 7004 DP1028797 and Lot 7300 DP11449008 (Survey Unit 1); and some of Lot 10 DP1210362 where the proposed stockpile is proposed (Survey Unit 2). The combined study area is approximately 7.6 hectares.

The study area consists of two portions: the existing quarry, along with a small area of land around it (Survey Unit 1); and a neighbouring block to the northeast that is a proposed temporary stockpile area (Survey Unit 2). The study area is generally within lower slope landforms overlooking a broad plain to the west. The study area has been completely cleared of standing timber in the past but now supports a low density of regrowth trees. The proposed stockpile area contains some localised gullies and there is evidence of sheet wash erosion on the moderately steep slopes bordering these gullies.

Figure 1-2: Aerial showing the study area.



2 THE ARCHAEOLOGICAL ASSESSMENT

2.1 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk on the Friday, 27 September 2019.

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; BA [Hons], Dip Ed).

2.2.2 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report Author: Ben Churcher (OzArk Principal Archaeologist; BA [Hons], Dip Ed).
- Contributor: Adelia Gower (background research).

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
    - Division 4.7: Approvals process for state significant development

- Part 5: Environmental impact assessment on any heritage items which may be impacted by activities undertaken by a state government authority or a local government acting as a self-determining authority
    - Division 5.2: Approvals process for state significant infrastructure.

National Parks and Wildlife Act 1974 (NPW Act)

Amended during 2010, 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.

As of 1 October 2010, 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 the Department of Premier and Cabinet (DPC).

2.3.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act, administered by the Commonwealth Department of the Environment and Energy, 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* 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.

The *Protection of Movable Cultural Heritage Act 1986* includes legislation that prevents objects of cultural heritage significance, such as those that are sacred to Aboriginal peoples' heritage, from being exported out of Australia.

2.3.3 Applicability to the proposal

The current proposal will be assessed under Part 4 of the EP&A Act.

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

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 SEARS

The Planning Secretary's Environmental Assessment Requirements (SEARs) were issued for the proposal on 2 April 2019.

The most relevant sections of the SEARs as they apply to Aboriginal cultural heritage are:

- The EIS [Environmental Impact Statement] must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the proposal. This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH 2010), and should be guided by the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011) and consultation with OEH

regional branch officers. The Due Diligence process is not appropriate to use as an assessment here.

- Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.

2.6 PURPOSE AND OBJECTIVES

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

2.6.1 Aboriginal archaeological assessment objectives

The current assessment will apply the Code of Practice in the completion of an Aboriginal archaeological 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 objects or sites of Aboriginal heritage significance within the study area, as well as any landforms likely to contain further archaeological deposits

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

2.7 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	
Requirement 1a	Previous archaeological work	**Section 5.2**
Requirement 1b	AHIMS searches	**Section 5.3.1**
Requirement 2	Review the landscape context	**Section 4**
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	**Section 5.4**
Requirement 4	Predict the nature and distribution of evidence	**Section 5.4**
Requirement 4a	Predictive model	**Section 5.4**
Requirement 4b	Predictive model results	**Section 5.4**
Requirement 5	Archaeological survey	**Section 6**

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 5a	Survey sampling strategy	**Section 6.1**
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	**Section 6.1**
Requirement 6	Site definition	**Section 6**
Requirement 7	Site recording	Not applicable to this report as no new sites were recorded.
Requirement 7a	Information to be recorded	Not applicable to this report as no new sites were recorded.
Requirement 7b	Scales for photography	Not applicable to this report as no new sites were recorded.
Requirement 8	Location information and geographic reporting	
Requirement 8a	Geospatial information	Not applicable to this report as no new sites were recorded.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 55.
Requirement 9	Record survey coverage data	**Section 6.3**
Requirement 10	Analyse survey coverage	**Section 6.3**
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	
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	Not applicable. No test excavation was undertaken.
Requirement 15	Pre-conditions to carrying out test excavation	Not applicable. No test excavation was undertaken.
Requirement 15a	Consultation	Not applicable. No test excavation was undertaken.
Requirement 15b	Test excavation sampling strategy	Not applicable. No test excavation was undertaken.
Requirement 15c	Notification	Not applicable. No test excavation was undertaken.
Requirement 16	Test excavation that can be carried out in accordance with this Code	Not applicable. No test excavation was undertaken.
Requirement 16a	Test excavations	Not applicable. No test excavation was undertaken.
Requirement 16b	Objects recovered during test excavations	Not applicable. No test excavation was undertaken.
Requirement 17	When to stop test excavations	Not applicable. No test excavation was undertaken.

3 ABORIGINAL COMMUNITY CONSULTATION

3.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal cultural heritage assessment of the proposal has not followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs) (DECCW 2010b).

As noted in **Section 2.5**, the SEARs for the proposal advocate a two-stage approach to the assessment of Aboriginal cultural heritage:

- Step 1: Undertake an assessment following the Code of Practice and the Guide
- Step 2: If any Aboriginal cultural values are noted, then initiate full Aboriginal community consultation under the ACHCRs guidelines. This would also involve the development of an Aboriginal Cultural Heritage Assessment Report (ACHAR).

As no Aboriginal cultural heritage values were identified in the study area, the ACHCRs were not initiated.

3.1.1 Aboriginal community participation

Although the ACHCRs were not initiated, an invitation was extended to the Brungle Tumut Local Aboriginal Land Council (BTLALC) to participate in the fieldwork (**Appendix 1**). This enabled the cultural values of the study area to be understood.

Peter Bulger from BTLALC attended the fieldwork. On 27 September 2019 after the fieldwork had been completed, Peter Bulger noted that:

> *There are some modified trees in the neighbouring TSR – they are not located within the study area. No other issues with the fieldwork.*

4 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.

4.1 TOPOGRAPHY

The study area is in the NSW South Western Slopes bioregion, and in the upper slopes subregion (NPWS 2003). It is also in the landform type Adelong Granite Ranges as defined by Mitchell (2002). The Adelong Granite Ranges consists of steep hills and peaks with a general elevation of 500 to 760 metres (m), and the local relief of 20 m.

Representative landforms of the study area landforms are shown in **Figure 4-1**. The landform type is described below:

- Moderate to gentle lower slopes. Most of the study area is within moderate to gentle slopes. This landform includes moderate slopes covering most of the eastern portion of the study area (Survey Unit 2). The western section of the study area where the quarry is located has gentler slopes (Survey Unit 1).

Figure 4-1: Topography of the study area.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>1. View of a gentle slope landform unit within Survey Unit 1.</td><td>2. View of a gentle slope landform unit within Survey Unit 1.</td></tr>
</table>

	
3. View of a moderate slope landform unit within Survey Unit 2.	4. View of a moderate slope landform unit within Survey Unit 2.

4.2 GEOLOGY AND SOILS

The geology of the area is classified as Silurian gneissic granite and Devonian massive granite (Mitchell 2002). The two main type of soils in the region are coarse loamy sand between rock outcrops and gritty gradational profiles developing to yellow harsh texture-contrast soils on lower slopes (Mitchell 2002).

4.3 HYDROLOGY

No watercourses run through the study area. The closest permanent source of water is the Murrumbidgee River, located approximately two kilometres (km) north of the study area, and Adelong Creek, located approximately 2.6 km southeast of the study area.

4.4 VEGETATION

Prior to colonial settlement, vegetation within the region of the study area was predominantly Box-Gum woodlands comprising Eucalyptus albens (White Box), E. melliodora (Yellow Box) and/or E. blakelyi (Blakely's Red Gum) with E. bridgesiana (Apple Box), E. microcarpa (Grey Box), E. mannifera (Brittle Gum), E. rubida (Candlebark), E. cinerea (Argyle Apple) and E. macrorrhyncha (Red Stringybark). Colonial land use practices cleared the majority of Box-Gum woodlands within the region with only small pockets of remnant woodlands remaining.

Vegetation in the study area consists of a mixture of box, gum trees and some scrubs. Much of the vegetation in the study area has been cleared and disturbed by grazing and quarrying activities.

4.5 CLIMATE

The climate in the region is temperate, with hot dry summers and cold winters. Climate statistics from the Australian Government's Bureau of Meteorology indicate that the temperatures range from a mean maximum temperature of 32.8 degree Celsius in January and a mean minimum

temperature of 2.6 degrees Celsius in July. November has the highest mean rainfall of 67.3 millimetres (mm) and April has the lowest mean rainfall of 29.6 mm (BoM 2019).

4.6 LAND–USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Bangus Quarry is a council operated gravel quarry, which covers almost all of Survey Unit 1. Survey Unit 2 has been affected by previously clearing, grazing and has varying levels of erosion throughout.

4.7 CONCLUSION

The topography, hydrology and climate of the study area would not have been very conducive for use by Aboriginal people. No water sources are close by and little of the landform is flat.

The ongoing use of the land for quarrying purposes in Survey Unit 1 means that any sites in this area, had they existed, have been removed. The visible sheet wash erosion on the moderately sloping landforms in Survey Unit 2 has removed topsoils revealing skeletal subsoils. It is likely that this soil loss would have impacted any sites had they existed in this area.

The former tree clearing that has taken place indicates that culturally modified trees will be very rare if not non-existent.

5 ABORIGINAL ARCHAEOLOGY BACKGROUND

5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

The study area is within the southern boundaries of the territory of the Wiradjuri tribal and linguistic group (Tindale 1974). The Wiradjuri tribal area is situated within the Murray Darling Basin and extends across three general physiographic regions: the highlands or central tablelands in the east, the riverine plains in the west, and the transitional western slopes zone in between.

The Wiradjuri is one of the largest language groups within New South Wales, extending across the districts of Condobolin, Booligal, Carrathool, Wagga Wagga, Cootamundra, Cowra, Parkes, Trundle, Boorowa, Wellington, Mudgee, Bathurst, Mossgiel, Hay, Albury and Tumbarumba (Tindale 1974). While the area had a single language, various dialects were found throughout the region most notably in Albury and Bathurst. The study area is located near the southeast boundary of the Wiradjuri territory, next to the Ngunnawal territory.

It is important to recognise the use and meaning of the term ‘tribe’ and the designation of lines on a map as ‘tribal boundaries’ as being controversial issues (Bowdler 1983: 22). There is no doubt that there were distinctive groups, which can be defined by their linguistic traits, but the designation of lines on a map as boundaries, although useful, must also be accepted as problematic. Unlike Tindale’s map, the map (from NSW NPWS) reproduced in Bowdler (1983: 17, Figure 2) shows a more general relationship of the language groups known to exist in NSW.

Prior to colonial settlement, the eastern margins of the Murrumbidgee River basin supported woodland and forest habitats that provided home to a wide range of exploitable resources for the Aboriginal population. These resources included possums, which provided a ready source of meat and fur for cloaks (Kabaila 1998: 12). Also used were vegetables including the roots of daisy yams (Myrrnong), the tubers of lilies and orchids, stands of bracken fern, and Kurrajong roots. The frequent floods of the Murrumbidgee provided the local Aboriginal population with an abundance of resources: as the flood waters receded, they left the drying pools stocked with freshwater mussels, yabbies, fish and waterfowl as well as aquatic plants (Kabaila 1998: 12).

The first colonial explorers to visit what is known today as the Gundagai region were Hamilton Hume and William Hovell In 1824. In October of 1824, they departed the limits of white settlement at Yass to make their way towards the emerging settlement of Port Phillip (Melbourne). For much of their expedition they travelled along the length of the Murrumbidgee River, passing to the east and south of present-day Gundagai (O'Keefe et al. 2002: 5). From their journals, we have the first eyewitness accounts of the earliest contact with Aboriginal people in the area.

Thursday, 4 November 1824:

> *The natives appear to be numerous; in the course of the day, their fires were seen in different directions, and their huts or camps (which are constructed in the same*

> *manner as those in that part of the country which we inhabit) have been frequently met with; they were several times hailed, but could not, although they replied, be induced to approach.*

Monday, 15 November 1824:

> *The natives, it would seem from their tracks, are here numerous. Kangaroos are becoming plentiful; they succeed in killing one, as also a yellow snake.*

There is also much mention by the two explorers of the swift flow of the Murrumbidgee River and its propensity for flooding:

> *The river, at this ford, is at least 150 feet wide, the current strong, and the water about two feet and a half deep. From the marks on its banks, and on the trees, this river is evidently subject at times to floods, when the water must occasionally rise at least ten or fifteen feet higher than its present level.*

Following close behind the 1824–1825 expedition by Hume and Hovell were squatters looking for land to settle and farm. By 1828, suitable land along the Murrumbidgee River as far south as Gundagai had been claimed and a number of stations started. In 1825, Henry O'Brien selected land near present day Juglong. Further, down in 1826 at the confluence of the Tumut and Murrumbidgee rivers, Ben Warby established 'Mingay' station (Crooks 1989). Two other southbound settlers established land holdings near present day Gundagai. "Sugar" O'Brien established "Gundagai Station" in close proximity to ‘the crossing’ (later to become the site of Old Gundagai town) and Peter and Henry Stuckey began Willie Ploma and Tomblong respectively around 1828 (Crooks 1989).

When Charles Sturt set out on his expedition in 1830, the Stuckey's were the southernmost settlers in the region. Sturt contacted the Stuckey’s when he forded the Murrumbidgee River using their crossing point at 'Stuckey’s Crossing' (Crooks 1989). Stuckey’s Crossing was established in 1838, as the only way to cross the Murrumbidgee River on the route between Sydney and Melbourne (NMA 2019).

> *Although the fires of the natives had been frequent upon the river, none had, as yet, ventured to approach us, in consequence of some misunderstanding that had taken place between them and Mr. Stuckey's stockmen.*
>
> Sturt 1830

The evidence above of distrust between the Aboriginal people and white settlers probably came about as a result of the Aboriginals realisation that they were being deprived of land and access to food and water (O'Keefe et al. 2002: 5). Sturt directly encountered Wiradjuri people downstream at present day Wantabadgery, known to the Wiradjuri as Pontebadgery (Butcher 2002: 1).

> *About noon, we fell in with a large tribe of natives, but had great difficulty in bringing them to visit us. If they had heard of white men, we were evidently the first they had ever seen. They approached us in the most cautious manner, and were unable to subdue their fears as long as they remained with us. Collectively, these people could not have amounted to less than one hundred and twenty in number.*
>
> Sturt 1830

Another account recorded by Sturt at the same location seems to indicate that not all the Wiradjuri were wary of Europeans.

> *One of the blacks being anxious to get an opossum out of a dead tree, every branch of which was hollow, asked for a tomahawk, with which he cut a hole in the trunk above where he thought the animal lay concealed. He found, however, that he had cut too low, and that it had run higher up. This made it necessary to smoke it out; he accordingly got some dry grass, and having kindled a fire, stuffed it into the hole he had cut. A raging fire soon kindled in the tree, where the draft was great, and dense columns of smoke issued from the end of each branch as thick as that from the chimney of a steam engine. The shell of the tree was so thin that I thought it would soon be burnt through, and that the tree would fall; but the black had no such fears, and, ascending to the highest branch, he watched anxiously for the poor little wretch he had thus surrounded with dangers and devoted to destruction; and no sooner did it appear, half singed and half roasted, than he seized upon it and threw it down to us with an air of triumph. The effect of the scene in so lonely a forest, was very fine. The roaring of the fire in the tree, the fearless attitude of the savage, and the associations which his colour and appearance, enveloped as he was in smoke, called up, were singular, and still dwell on my recollection. We had not long left the tree, when it fell with a tremendous crash, and was, when we next passed that way, a mere heap of ashes.*
>
> *Sturt 1830*

White settlers moved into the area in ever increasing numbers. A drought from 1837–1838 is reported to have stopped the Murrumbidgee River flowing, resulting in fierce competition for food and other resources between Europeans and Aboriginal people. This culminated in an outbreak of hostilities further down river and to the west of Gundagai (O'Keefe et al. 2002). Killings are recorded on both sides and a number of stock losses are reported to have been caused by Wiradjuri spears. As settler migration increased, sheer numbers of Europeans led to the collapse of Wiradjuri resistance by 1840 or early 1841.

There is no record or evidence that the same kind of hostilities erupted in Gundagai (O'Keefe, et al. 2002) and the town census of 1851 just prior to the catastrophic flood of 1852 records the

population of Gundagai at 1,019 people with 137 buildings, fourteen of stone and brick and 122 built from timber (O'Keefe et al. 2002:15).

5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Within the Wiradjuri region, the presence of Aboriginal people in the Darling Basin has been dated to 40,000 years ago (Hope 1981 as cited in Haglund 1985). A spread east into the mountains was thought to have occurred between 14,000 to 12,000 years ago. Systematic, regional based archaeological studies have not been undertaken in this area. Development driven studies have however, comprised the bulk of archaeological assessment within the Gundagai district over the past 30 years.

Koettig 1986

Koettig conducted an archaeological assessment in relation to options for a new water treatment plant at Gundagai. One site was located during the survey on the lower waning slopes of north west Brummys Hill, south of the Murrumbidgee River (AHIMS # 56-3-0005). The site consisted of a low-density scatter of stone artefacts (4) made from quartz and fine-grained materials (Koettig 1986: 6). The site was located in a heavily disturbed context from domestic livestock use and other farming practices (1986: 7).

Navin Officer Archaeological Resource Management 1994

Navin Officer conducted an archaeological survey for the Sheahan Bridge duplication at Gundagai. Sheahan Bridge crosses the Murrumbidgee River and associated floodplain along the Hume Highway at Gundagai. Four archaeological sites were identified during the survey consisting of two open artefact scatters and two carved trees (AHIMS # 56-3-0075, 0076, and 0078). Both open artefact scatters were located in disturbed contexts from recent agricultural land use. Identified artefacts included flakes, broken flakes and manuports made from rhyolite and quartz (Navin Officer 1994: 10).

Charles Dearling Archaeological and Cultural Heritage Consultant 2002

Dearling conducted an Aboriginal heritage study for NSW National Parks and Wildlife Service (NPWS) in selected National Parks and Nature Reserves in the South West Slopes Region of NSW. The study incorporated five Nature Reserves and three National Parks including Minjary National Park to the southeast of the study area. Over 15 km of fire trails and tracks and six block surveys (totalling 5.14 hectares) were conducted on foot within Minjary National Park (Dearling and Grinberg 2002: 48–49). Six open artefact scatters, three carved trees and one potential archaeological deposit (PAD) were recorded in the Park. Open artefact scatters were generally low with just 39 artefacts in total being recorded, primarily debitage or waste material created during knapping activities. Raw material consisted of quartz (77.5%) and volcanic (22.5%) (2002: 50). Carved trees were concentrated along the Meadow Creek corridor.

KNC 2015

An Aboriginal archaeological survey assessment was undertaken of the Gocup Road Upgrade in 2012 (KNC 2015: 13). A full coverage survey was carried out between 17–19 October 2012 by a team of five people comprising two representatives from the BTLALC, a representative from RMS and two archaeologists from Kelleher Nightingale Consulting Pty Ltd.

The team closely inspected exposed ground, such as unsealed tracks or eroded surfaces, for artefacts and any old growth trees for evidence of Aboriginal bark removal. Generally, surface visibility was poor with a resulting low level of effective coverage. Where surface visibility was high it was usually related to erosional or one-off disturbance events (e.g. trenching, dam construction).

As a result of the survey, nine archaeological sites and one PAD were identified within the Gocup Road study area. The sites comprised eight artefact scatters and one isolated artefact. The predominant raw material observed was quartz; however, a range of other materials including tuff, chert and fine grained siliceous were also present. Numerous quartz nodules were noted near site Gocup Road 07 which may have been a source of the quartz raw material used at the sites.

5.3 CULTURAL LANDSCAPE

Aboriginal cultural sites form interlinked elements within a larger cultural landscape that connects a range of ceremonial areas and a significant ancestral being lying within the landscape. The cultural landscape identified during an assessment of the Gocup Road upgrade to the southeast of the study area (KNC 2015) identified places within a cultural landscape described as containing four key areas of ceremonial or spiritual significance: Mudjarn which generally relates to the area of Mudjarn Nature Reserve; Minjary which generally relates to the area of Minjary National Park; the Bogong Peaks; and the Gundagai Ceremonial and Burial Areas.

The mountains at Mudjarn and Minjary are seen as interconnected and are two of the most important cultural features in the local landscape. Both areas are associated with ceremonial business and the Goolgul, a being connected with the Bogong Moths.

5.4 LOCAL ARCHAEOLOGICAL CONTEXT

5.4.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously-recorded heritage within the study area. The results of this search are summarised in **Table 5-1** and presented in detail in **Appendix 2**.

Table 5-1: Aboriginal cultural heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	3 October 2019	Cootamundra Gundagai LGA	No places listed on either the National or Commonwealth heritage lists are located within the study area
National Native Title Claims Search	3 October 2019	NSW	No Native Title Claims cover the study area.
DPC AHIMS	3 October 2019	10 km x 10 km centred on the study area	No AHIMS sites are within the study area.
Local Environment Plan (LEP)	3 October 2019	Cootamundra Gundagai LEP of 2013	None of the Aboriginal places noted occur near the study area.

An extensive search of the DPC administered AHIMS database returned 34 records for Aboriginal heritage sites within the designated search area. The majority of the AHIMS sites are modified trees (96%), followed by and isolated find and an open campsite. **Figure 5-1** shows the location of the AHIMS sites that have been recorded near the study area.

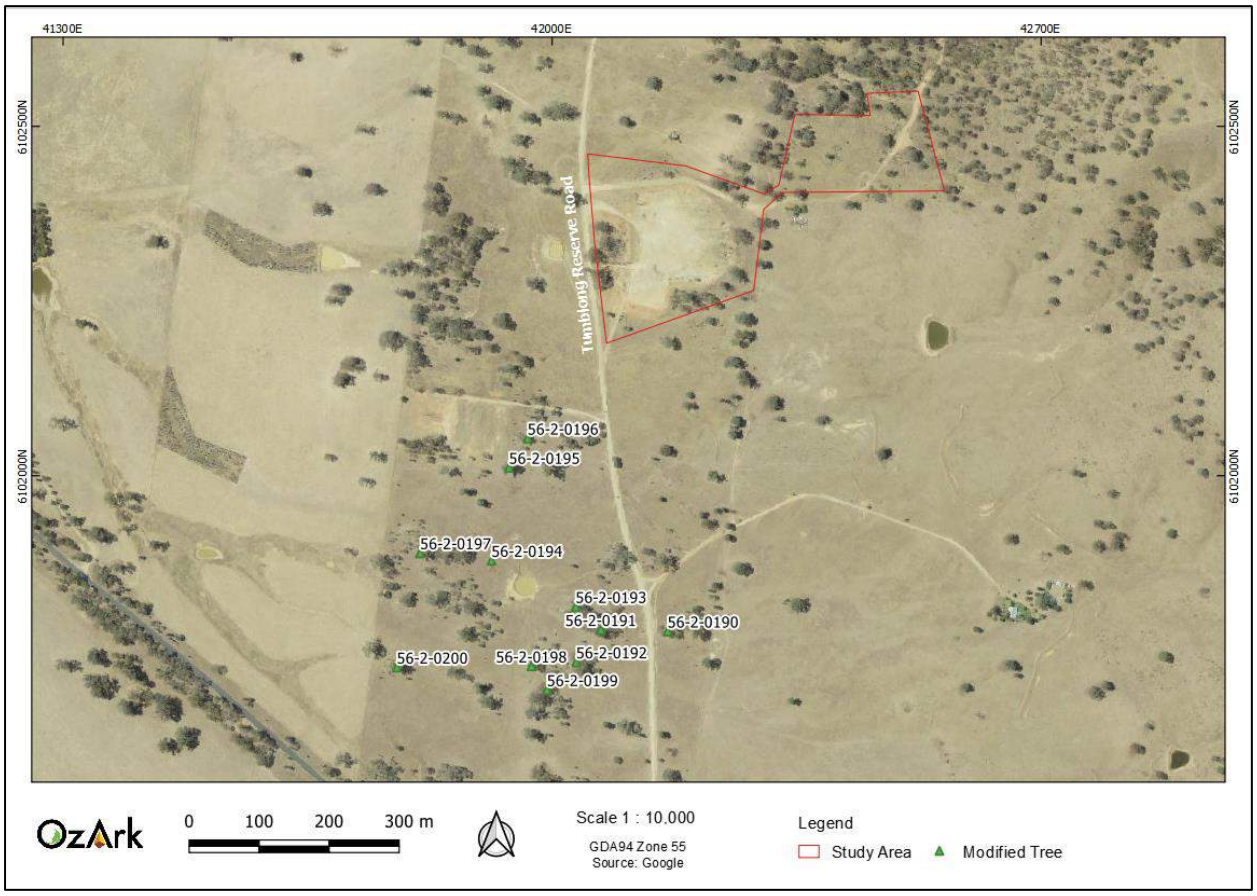
94 per cent of the AHIMS sites recorded near the study area have been recorded by one individual and all are scarred trees. OzArk ground-truthed some of the recordings in the Bangus Travelling Stock Reserve (TSR) near the study area, and of the trees inspected, none would meet the criteria for cultural modification. Therefore, the large majority of scarred trees shown in **Table 5-2** should be treated with extreme caution.

No AHIMS sites have been recorded within the study area.

Table 5-2: Site types and frequencies of AHIMS sites near the study area.

Site Type	Number	% Frequency
Modified Tree	32	94%
Isolated Find	1	3%
Open Campsite	1	3%
Total	**34**	**100**

Figure 5-1: Location of previously recorded AHIMS sites in relation to the study area.



The spatial distribution of AHIMS registered sites in the region illustrates the limited extent of previous archaeological investigations in this area. Where archaeological investigations have occurred, artefact scatters, isolated artefacts and culturally modified trees have been identified.

Artefact scatters and isolated artefacts have generally been found adjacent to creeks or rivers. Water sources would have been focal points for Aboriginal people due to the accessibility of resources at these locations. Culturally modified trees have been documented near creeks and rivers in the region; however, the spatial distribution of this site type may be distorted due to colonial farming practices and the mis-recording prevalent with this site type.

5.5 PREDICTIVE MODEL FOR SITE LOCATION

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, shells, 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 European farming practices including grazing and cropping, land degradation, and farm related infrastructure. Scarred trees, due to their nature, may survive for up to several hundred years but rarely beyond.

5.5.1 Settlement strategies

The archaeological studies undertaken within the vicinity of the study area provide information to obtain a limited understanding of the nature and distribution of archaeological sites within the area. Although there is some conjecture about the relationship between stream order, site numbers and densities, the general pattern is that most sites are close to watercourses. This indicates that water was a valuable resource and was used to navigate the landscape.

5.5.2 Past land use

Crucial for the preservation of archaeological deposits is the history of past land use in an area. The study area has been used as a council owned gravel quarry and conducting this activity has cleared most of the western portion of the study area and has had significant impact on the ground surface. In the eastern portion, vegetation clearing and grazing has led to soil depletion and sheet wash erosion. This activity is likely to have significantly impacted sites had they existed.

5.5.3 Previously recorded sites

The results of past archaeological investigations near the study area indicates that the most common site type will be modified trees although, as noted, this finding needs to be treated with caution. Looking further afield to the more-scientifically conducted assessments associated with the Gocup Road upgrade (KNC 2015), it is clear that low-density artefact scatters and isolated finds are some of the more common site types in the district.

5.5.4 Landform modelling

A consideration of the landforms within the study area enables a prediction regarding the type and distribution of sites to be made. The slopes in the study area are not ideal camp or settlement locations, and as there is no water source in or near the study area, Aboriginal sites are unlikely to be recorded in the landforms of the study area. If they are present, they are likely to be low-

density artefact scatters or isolated finds as the landforms of the study area are unlikely to have encouraged long-term camping.

5.5.5 Previous studies

No known previous studies have been conducted in or around the study area; apart from the informal recordings within the Bangus TSR. Further afield, the small number of archaeological assessments that have taken place conform to the general picture that large, complex sites are near permanent water and there is a dramatic drop-off in site density away from water. Confounding this image is the fact that historical disturbances have been more-intense near the region's main waterways and this activity has probably destroyed many of the large base camps that would have undoubtedly existed along systems such as the Murrumbidgee River to the north of the study area.

5.5.6 Conclusion

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 that may be recorded within the study area:

- Isolated finds may be indicative of: 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 study area.
- 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 because 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 example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical 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.
    - Modified trees, including scarred trees, are the most represented site type within 10 km of the study area. Due to this, it is possible there will be modified trees present, especially in the unlikely event that remnant and undisturbed mature native vegetation is present within the study area.

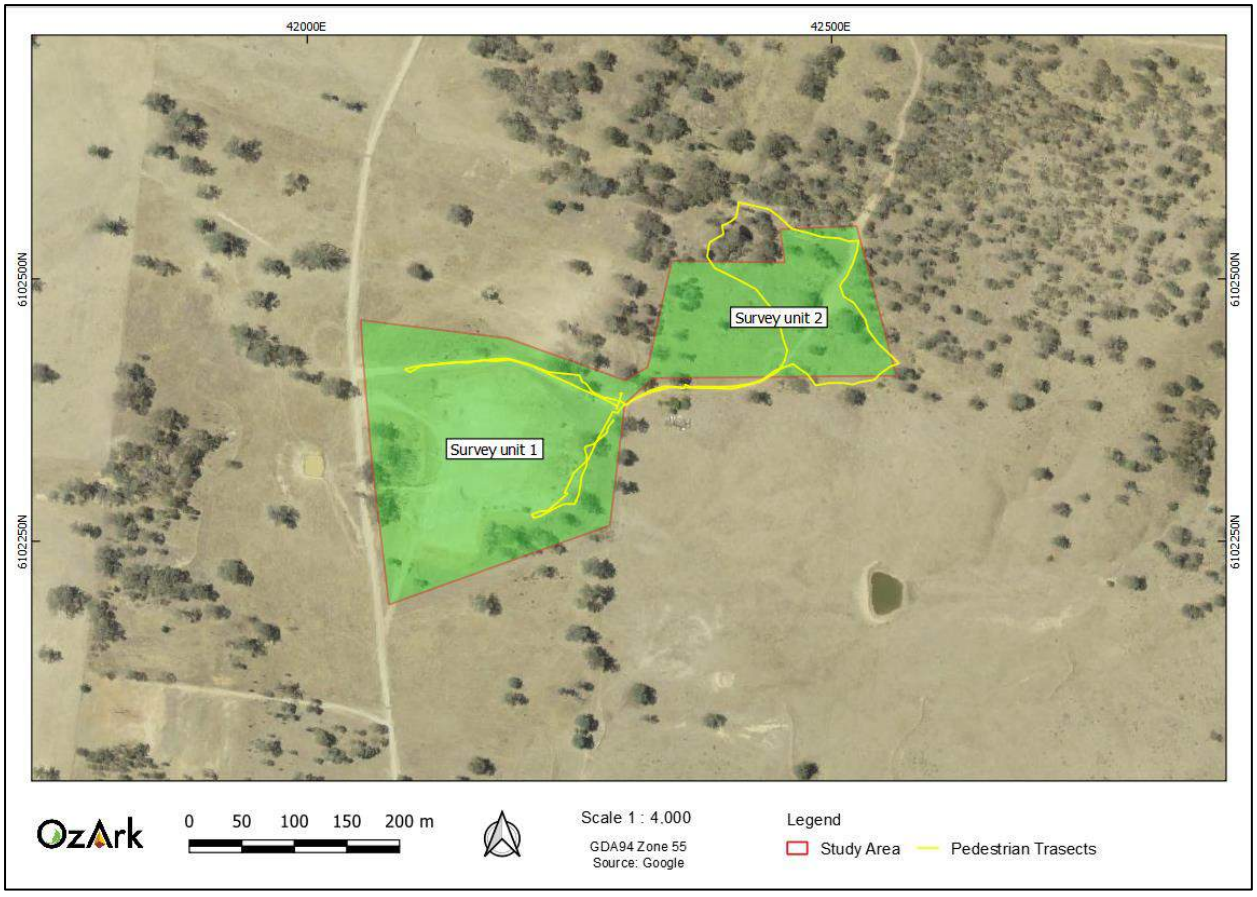
6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

6.1 SAMPLING STRATEGY AND FIELD METHODS

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

The survey included a full assessment of the impact area where the landfill is planned. This is shown in **Figure 6-1**. Survey Unit 1 has been highly modified from earthworks as a result of quarrying. Most of the Survey Unit 1 has been cleared. Survey Unit 2 has been impacted by clearing, grazing and erosion. The survey inspected all of the trees for cultural modification and areas of erosion for any artefacts.

Figure 6-1: Aerial showing pedestrian transects and survey units.



6.2 PROJECT CONSTRAINTS

The only constraint during the field survey was ground surface visibility. Although most of the study area has been cleared from the activities relating to quarrying practices, some areas had grass and leaf litter cover, lowering the visibility.

6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are ground surface visibility (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).

Survey Unit 1 in the areas outside of the quarry had reasonable visibility with 70% GSV and 25% GSE. Most of the landscape has been cleared in this survey unit due to quarrying activities, and there was evidence of significant earthmoving at several locations. The moderate slopes in Survey Unit 2 had good visibility with 60% GSV and 45% GSE. Visibility was poorer in areas with higher grass and leaf litter cover. Exposures were due to erosion, vehicle tracks and a small dam.

Figure 6-2 is an aerial image of the less disturbed Survey Unit 2. As can be seen, sheet wash erosion is widespread and GSE over this portion almost constitutes half the study area. While the level of GSE indicates that survey efficacy was high in Survey Unit 2, it also illustrates the high degree of soil loss and other disturbances that have occurred in this area.

Photographs representing both survey units are presented in **Plates 1** to **6**.

Figure 6-2: Aerial of the eastern portion of the study area denoted by the red dotted line.

6.4 ABORIGINAL SITES RECORDED

No Aboriginal sites were recorded during the field survey. In addition, due to the extent of past landform modification in some portions of the study area and the sloping nature of the unmodified landforms, it was assessed that there was a low possibility for subsurface archaeological deposits in the study area.

6.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

No previously recorded Aboriginal sites are located in the study area.

6.5.1 Discussion

The results of the survey partially conform to the predictive model (**Section 5.5**). The most common site type predicted to occur in the area was modified trees, however, none were recorded in the study area due to the lack of mature trees. Isolated finds and low-density artefact scatters were also predicted to occur, however, the it was predicted that the lack of a water source near the study area would make such sites rare.

The results of the survey concluded that the study area has a low integrity and has been modified by current and past quarrying activities, vegetation clearance, grazing and soil loss.

7 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 with regard to:

- 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 BCD, or its equivalent
- The findings of the current investigations undertaken within the study area
- The interests of the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the study area are as follows:

1. No Aboriginal objects will be harmed by the proposal. As such, an AHIP is not required, and the works can proceed without further archaeological investigation.
2. As no Aboriginal cultural heritage values will be impacted by the proposal, undertaking the *Aboriginal cultural heritage consultation requirements for proponents* or the development of an *Aboriginal Cultural Heritage Assessment Report* are not required.
3. This assessment is confined to within the assessed study area. Should the parameters of the proposed work extend beyond these assessed locations, the further archaeological assessment may be required.
4. All staff involved with the Bangus Quarry landfill activities should be aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol* (**Appendix 3**).
5. In the event of skeletal remains being identified during the works, the *Unanticipated Skeletal Remains Protocol* (**Appendix 4**) should be followed.
6. All staff involved with the Bangus Quarry landfill activities should undergo cultural heritage induction to ensure they recognize Aboriginal artefacts. A sample guide is provided in **Appendix 5**.

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PLATES

Plate 1: View of survey unit 1, Bangus Quarry section. View over the quarry pit.

Plate 2: View of survey unit 1, Bangus Quarry section showing earthmoving activity beyond the quarry pit.

Plate 3: View of survey unit 1, Bangus Quarry section. View of the areas around the quarry pit.

Plate 4: View of survey unit 2, temporary stockpile location. View of the flat landform in the south of this portion.

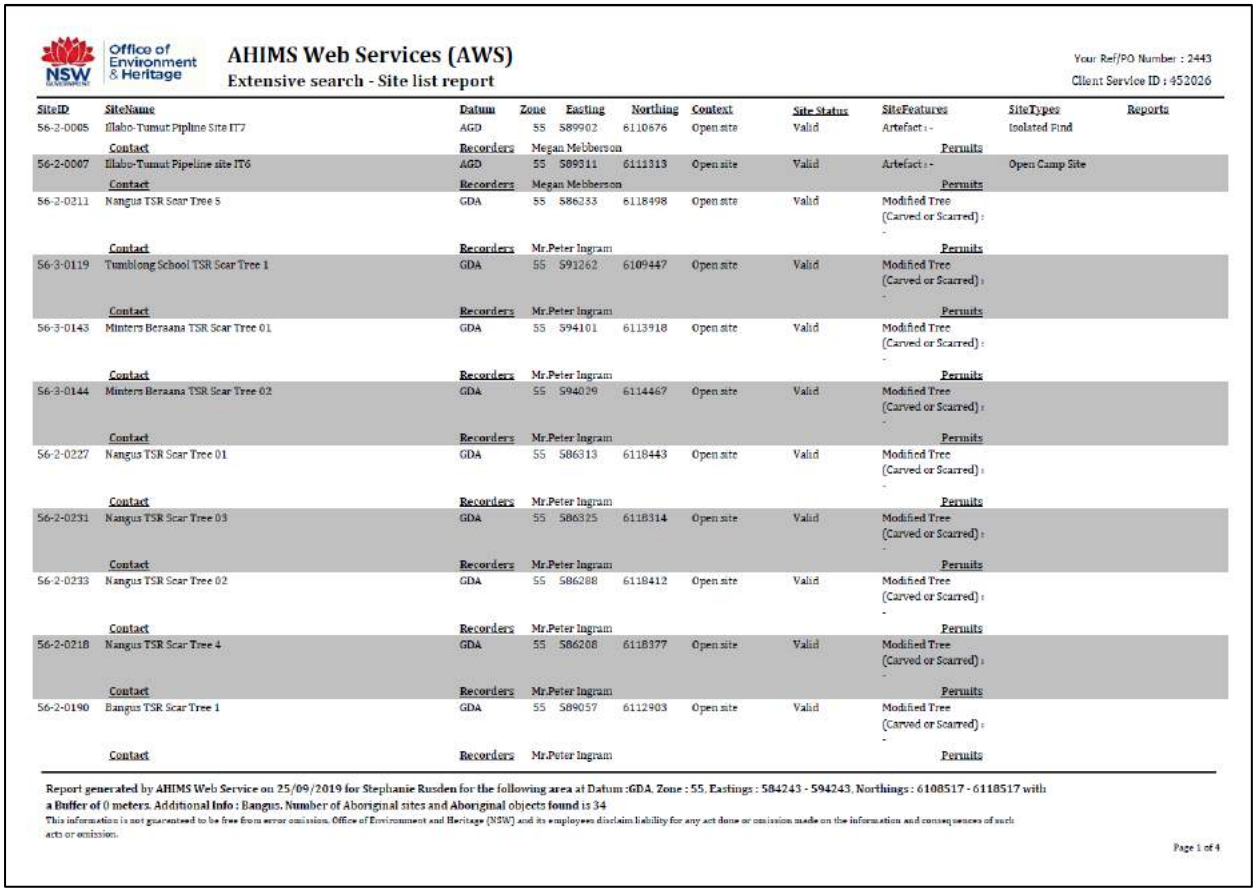
Plate 5: View of survey unit 2, temporary stockpile location. View showing the sheet wash erosion on the sloping landforms in this area.

Plate 6: View of survey unit 2, temporary stockpile location. View showing the sheet wash erosion on the sloping landforms in this area.

APPENDIX 1: ABORIGINAL CONSULTATION LOG

Aboriginal Consultation Log – Bangus Quarry			
Date	**Organisation**	**Comment**	**Method**
19.9.19	Brungle – Tumut Local Aboriginal Land Council	Rebecca Hardman (RH) phoned and left message asking to call back in regards to fieldwork in their area.	Phone
19.9.19	Brungle – Tumut Local Aboriginal Land Council	RH sent invite to fieldwork	Email
19.9.19	Brungle – Tumut Local Aboriginal Land Council	RH phoned, straight to message bank again	Email
19.9.19	Brungle – Tumut Local Aboriginal Land Council	Sheridan baker (SB) phoned and spoke to a lady on reception. She confirmed that the computers were down yesterday but pulled up the email while SB on the phone. The lady indicated that it should be fine for next week and that they would confirm in email with workers and compensation insurance.	Phone
23.9.19	Brungle – Tumut Local Aboriginal Land Council	RH phoned and spoke to Sue. Sue said they have a site officer attending and will send paperwork through today	Phone
24.9.19	Brungle – Tumut Local Aboriginal Land Council	RH phoned and spoke to Elsie to request workers comp. Was told needs to speak to sue, she is out until 330, will get her to call RH back then	Phone
24.9.19	Brungle – Tumut Local Aboriginal Land Council	RH phoned back at 4:50pm, spoke to sue, she said the book keeper will send a copy of the workers comp through tomorrow morning. RH also asked could they please send site officers name and contact number. Sue mentioned that 2 site officers will attend. One will be learning and confirmed the fee offered for 1 site officer is accepted even though 2 will attend	Phone
25.9.19	Brungle – Tumut Local Aboriginal Land Council	RH phoned back and spoke to Sue, she said she will send through the workers comp now.	Phone
25.9.19	Brungle – Tumut Local Aboriginal Land Council	RH received copy of workers comp and site officer's name and contact number	Email

APPENDIX 2: AHIMS EXTENSIVE SEARCH



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Extensive search - Site list report

Your Ref/PO Number : 2443
Client Service ID : 452026

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
56-2-0005	Illabo-Tumut Pipline Site IT7	AGD	55	589902	6110676	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Megan Mebberson					Permits		
56-2-0007	Illabo-Tumut Pipeline site IT6	AGD	55	589311	6111313	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Megan Mebberson					Permits		
56-2-0211	Nangus TSR Scar Tree 8	GDA	55	586233	6118498	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0119	Tumblong School TSR Scar Tree 1	GDA	55	591262	6109447	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0143	Minters Beraana TSR Scar Tree 01	GDA	55	594101	6113918	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0144	Minters Beraana TSR Scar Tree 02	GDA	55	594029	6114467	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0227	Nangus TSR Scar Tree 01	GDA	55	586313	6118443	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0231	Nangus TSR Scar Tree 03	GDA	55	586325	6118314	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0233	Nangus TSR Scar Tree 02	GDA	55	586288	6118412	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0218	Nangus TSR Scar Tree 4	GDA	55	586208	6118377	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0190	Bangus TSR Scar Tree 1	GDA	55	589057	6112903	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		

Report generated by AHIMS Web Service on 25/09/2019 for Stephanie Rusden for the following area at Datum :GDA, Zone : 55, Eastings : 584243 - 594243, Northings : 6108517 - 6118517 with a Buffer of 0 meters. Additional Info : Bangus. Number of Aboriginal sites and Aboriginal objects found is 34

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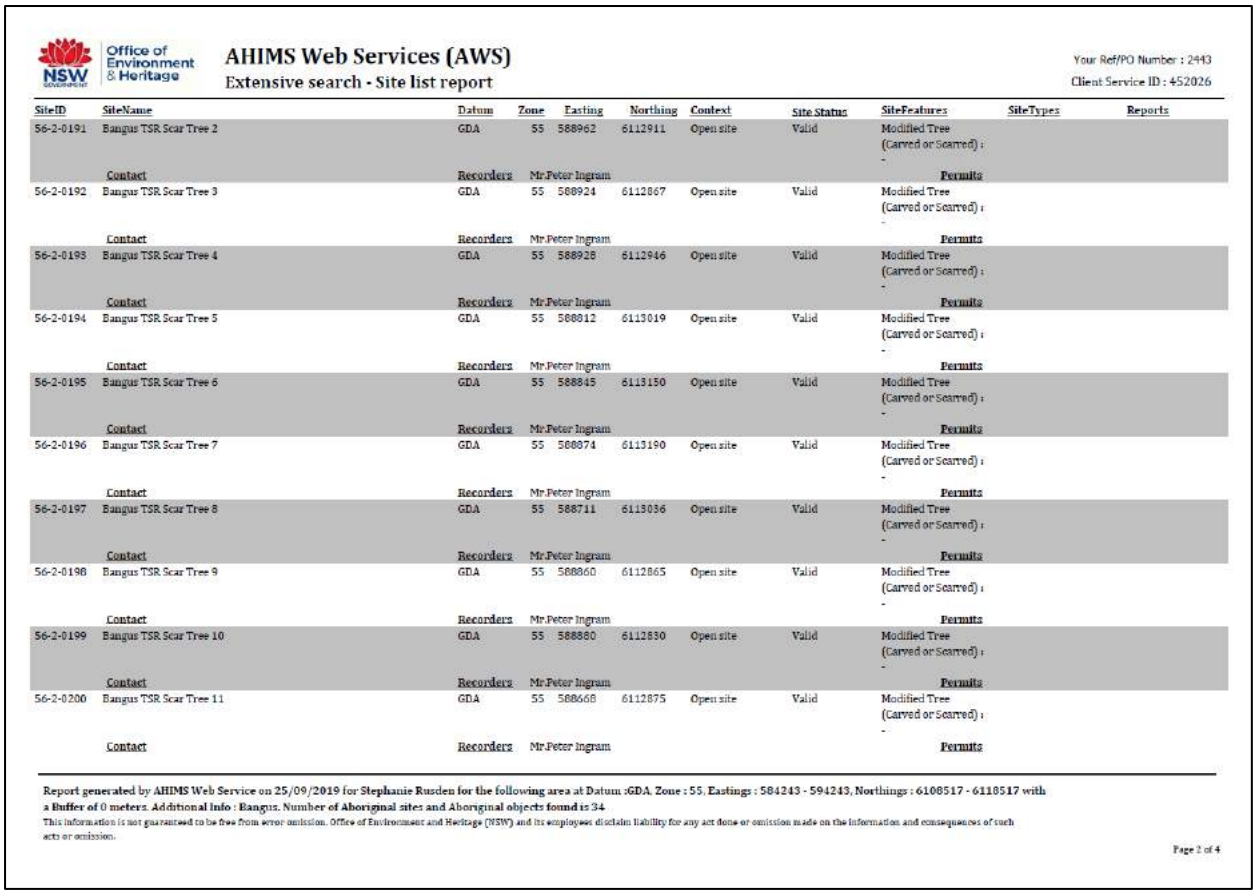

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Extensive search - Site list report

Your Ref/PO Number : 2443
Client Service ID : 452026

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56-2-0191	Bangus TSR Scar Tree 2	GDA	55	588962	6112911	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0192	Bangus TSR Scar Tree 3	GDA	55	588924	6112867	Open site	Valid	Modified Tree (Carved or Scarred) : -		
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56-2-0193	Bangus TSR Scar Tree 4	GDA	55	588928	6112946	Open site	Valid	Modified Tree (Carved or Scarred) : -		
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56-2-0194	Bangus TSR Scar Tree 5	GDA	55	588812	6113019	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0195	Bangus TSR Scar Tree 6	GDA	55	588845	6113150	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0196	Bangus TSR Scar Tree 7	GDA	55	588874	6113190	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0197	Bangus TSR Scar Tree 8	GDA	55	588711	6113036	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0198	Bangus TSR Scar Tree 9	GDA	55	588860	6112865	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0199	Bangus TSR Scar Tree 10	GDA	55	588880	6112830	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0200	Bangus TSR Scar Tree 11	GDA	55	588668	6112875	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		

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Client Service ID : 452026

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
56-2-0201	Bangus TSR Scar Tree 12	GDA	55	588689	6112673	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0122	Minters Bereena TSR Scar Tree 7	GDA	55	593677	6114080	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0123	Minters Bereena TSR Scar Tree 6	GDA	55	593763	6114437	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0124	Minters Beraana TSR Scar Tree 3	GDA	55	593846	6114467	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0125	Minters Bereena TSR Scar Tree 8	GDA	55	593630	6113967	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0202	Nangus TSR Scar Tree 2	GDA	55	586288	6118412	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-2-0203	Nangus TSR Scar Tree 1	GDA	55	586313	6118443	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0112	Minters Bereena TSR Scar Tree 4	GDA	55	593611	6114464	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0113	Minters Bereena TSR Scar Tree 5	GDA	55	593619	6114434	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0114	Minters Beraana TSR Scar Tree 1	GDA	55	594101	6113918	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		

Report generated by AHIMS Web Service on 25/09/2019 for Stephanie Rusden for the following area at Datum :GDA, Zone : 55, Eastings : 584243 - 594243, Northings : 6108517 - 6118517 with a Buffer of 0 meters. Additional Info : Bangus. Number of Aboriginal sites and Aboriginal objects found is 34

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Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 2443
Client Service ID : 452026

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
56-3-0115	Minters Beraana TSR Scar Tree 2	GDA	55	594029	6114467	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0134	Minters Bereena TSR Scar Tree 10	GDA	55	593601	6114155	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		
56-3-0135	Minters Bereena TSR Scar Tree 9	GDA	55	593596	6114158	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Peter Ingram					Permits		

Report generated by AHIMS Web Service on 25/09/2019 for Stephanie Rusden for the following area at Datum :GDA, Zone : 55, Eastings : 584243 - 594243, Northings : 6108517 - 6118517 with a Buffer of 0 meters. Additional Info : Bangus. Number of Aboriginal sites and Aboriginal objects found is 34

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APPENDIX 3: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL

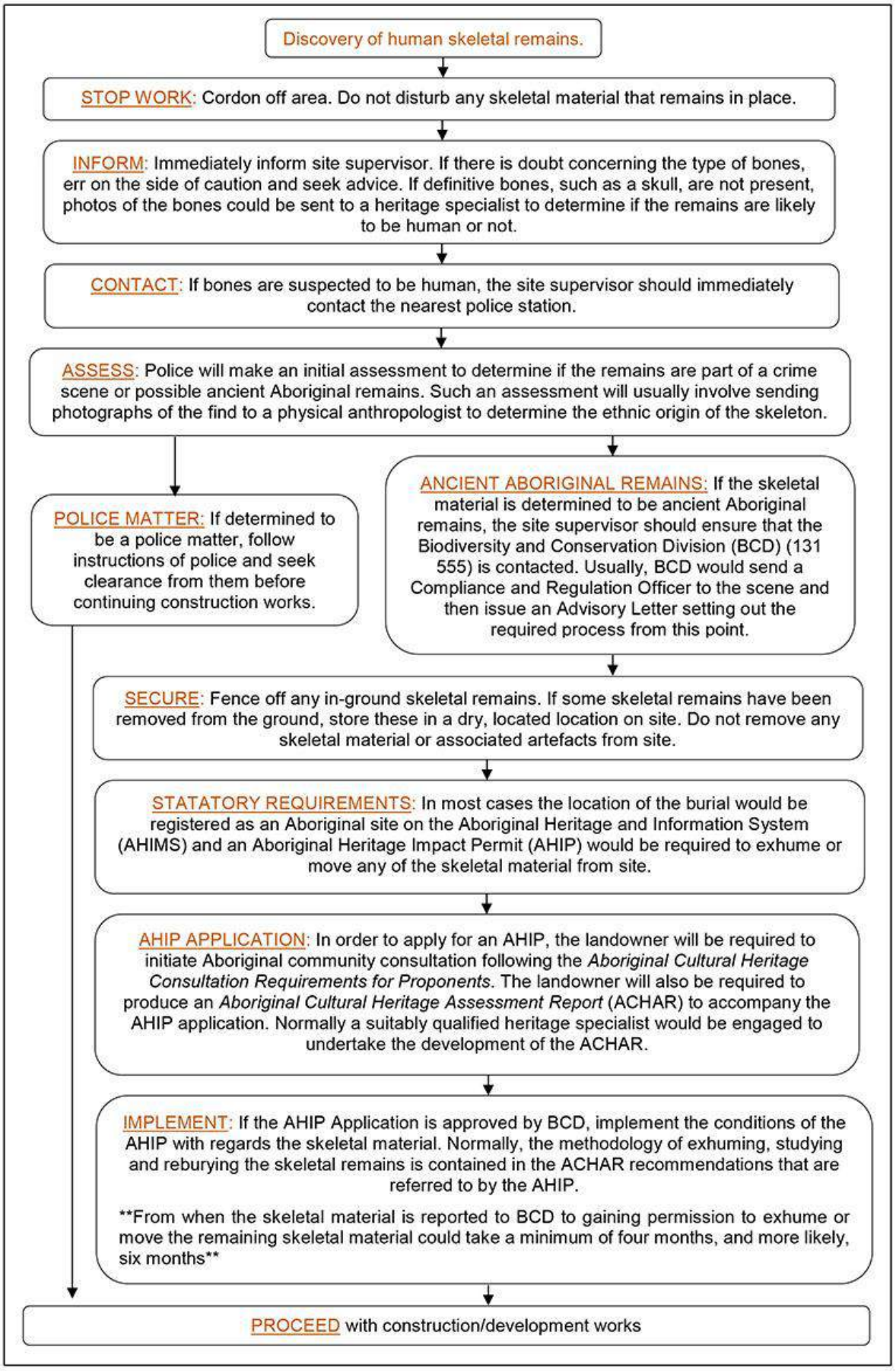
An Aboriginal artefact is anything that is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification; i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may take into account scientific and educational value.

Protocol to be followed in the event that previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the proponent must:
    a. Not further harm the object;
    b. Immediately cease all work at the particular location;
    c. Secure the area so as to avoid further harm to the Aboriginal object;
    d. Notify Biodiversity and Conservation Division (BCD) as soon as practical on 131 555, providing any details of the Aboriginal object and its location; and
    e. Not recommence any work at the particular location unless authorised in writing by BCD.
2. In the event that Aboriginal burials are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and BCD contacted.
3. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
    a. The recording and assessment of the find(s);
    b. The fulfilment of any legal constraints arising from the find(s), including complying with BCD directions; and
    c. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
4. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from BCD (normally an Aboriginal Heritage Impact Permit).

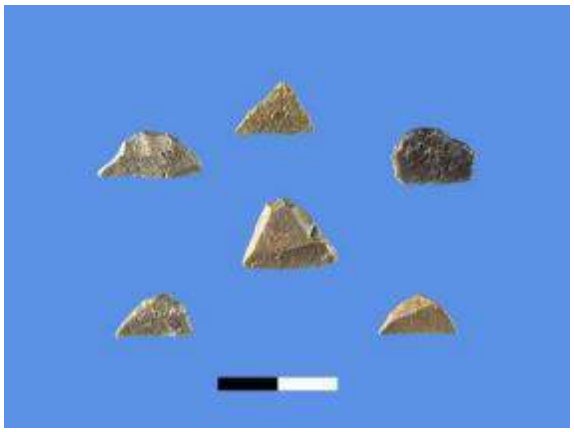
APPENDIX 4: UNANTICIPATED SKELETAL REMAINS PROTOCOL



APPENDIX 5: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

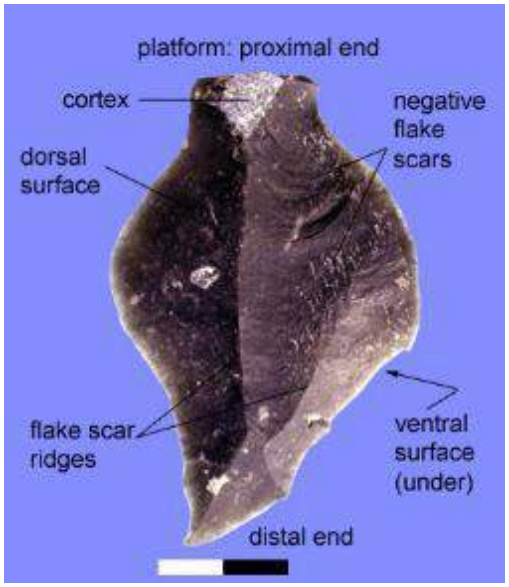
Retouched blades (scale = 1cm)

Flakes

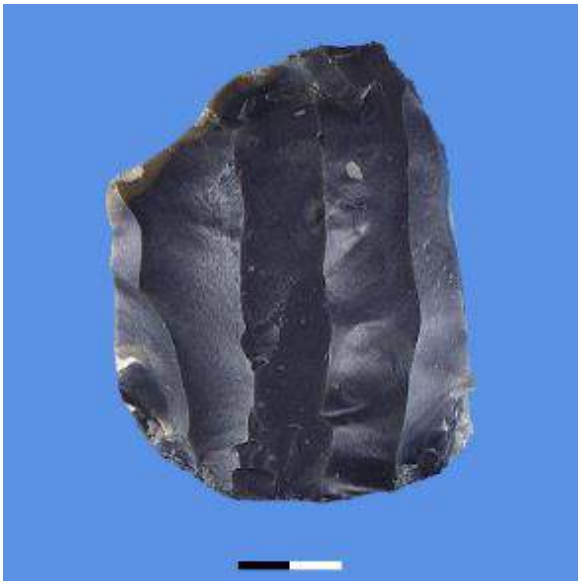


Microliths (scale = 1cm)

Scraper (scale = 1cm)



Flake characteristics (scale = 1cm)



Core from which flakes have been removed (scale = 1cm)