



View west across Duval Creek in the western portion of the development footprint.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

TILBUSTER 2 SOLAR FARM

ARMIDALE REGIONAL LOCAL GOVERNMENT AREA, NSW

SEPTEMBER 2024

Report prepared by
OzArk Environment & Heritage
for GHD Pty Ltd
on behalf of Enerparc Australia Pty Ltd

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Heritage NSW



ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

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Acknowledgement

OzArk acknowledge the 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 <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> . Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
AHIMS	Aboriginal Heritage Information Management System. Administered by the DCCEEW, AHIMS is the central register of all Aboriginal sites within NSW.
AHIP	Aboriginal Heritage Impact Permit. Issued by Heritage NSW to allow harm to Aboriginal objects.
Assemblage:	All artefacts recorded at a location. In this report, assemblage refers to stone artefacts as this was the only artefact class recorded.
BP	Years before present
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> 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.
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water. DCCEEW contains the Environment and Heritage Group including Heritage NSW.
DPHI	NSW Department of Planning, Housing and Infrastructure. DPHI contains the Planning agency.
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. A measure of factors that may reveal surface artefacts such as erosion scalds.
GSV	Ground surface visibility. A measure of factors that may obscure the detection of surface artefacts such as leaf litter.

Heritage NSW	Government department tasked with ensuring compliance with the NPW Act. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC).
Holocene:	Geological epoch which lasted from around 12,000 years ago (10,000 BCE) to the present. This period is generally warmer and wetter than the preceding Pleistocene period.
LGA	Local Government Area.
NPW Act	<i>National Parks and Wildlife Act 1974</i> . 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 project.
SEARs	Secretary's Environmental Assessment Requirements issued by DPHI.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd (GHD), on behalf of Enerparc Australia Pty Ltd (the proponent), to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Tilbuster 2 Solar Farm (the proposal).

The proponent is developing the Tilbuster Solar Farm (State Significant Development [SSD] 9619), which was approved under Section 2.22 and Clause 20 of Schedule 1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 3 March 2022. Due to design refinements made in response to ecological and heritage constraints identified during the preparation of the environmental impact statement (EIS), the project was approved with a lower megawatt (MW) capacity than originally anticipated. As a result, the proponent acquired adjacent land and proposes developing Stage 2 of the project to maximise the generation potential of the site (the proposal).

The proposal site is located at Lot 4 DP800611, 11915 New England Highway, Black Mountain NSW, in the Armidale Regional Local Government Area (LGA). The proposal site has an area of approximately 250 hectares (ha), with the proposed development to be constructed on approximately 190 ha of this land (referred to as the development footprint).

OzArk was initially engaged in 2023 to assess the proposal in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence; DECCW 2010a), however the survey was completed at a level suitable to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (the Code of Practice; DECCW 2010b). During the 2023 survey, three Aboriginal sites were recorded including two isolated finds and an artefact scatter with potential archaeological deposits (PAD). Additionally, four areas of PAD were identified. The proposal has since been classified as an SSD and therefore an ACHAR has now been completed to meet the requirements of the industry-specific *Secretary's Environmental Assessment Requirements* (SEARs) issued for the proposal (SSD-69799460). No additional Aboriginal sites were identified during a subsequent field assessment completed on 9 July 2024 and no amendments were made to the areas of delineated PAD.

The proponent has taken into consideration the location of the recorded Aboriginal sites and PADs. In doing so, the proponent has redesigned the proposal impacts to avoid harm to all recorded Aboriginal sites and areas of PAD across the development footprint. As such, all recorded Aboriginal sites and PADs will be conserved in the landscape and no test excavation is warranted.

Recommendations concerning Aboriginal cultural values within the development footprint are as follows:

1. Following development consent of the proposal, the proponent will develop an *Aboriginal Cultural Heritage Management Plan* (ACHMP) in consultation with the Registered Aboriginal Parties (RAPs) and Heritage NSW (**Section 9.2**). The ACHMP will include management measures to ensure the protection of the recorded Aboriginal sites and PADs, an unanticipated finds protocol, unanticipated skeletal remains protocol, and procedures for cultural awareness training. Construction cannot commence until the ACHMP has been approved by the Department of Planning, Housing and Infrastructure (DPHI).
2. The proponent has undertaken to avoid harm to all recorded Aboriginal sites and PADs. Site 21-1-0574 (Stage 2 Tilbuster OS1) and the areas of PAD should be protected during the construction of the proposal through temporary fencing (**Section 9.2.1**) and consideration should be given to retaining fencing during the operation of the proposal.
3. Erosion control measures should be implemented, if required, to ensure the PADs are not indirectly impacted during the construction of the proposal (**Section 9.2.1**).
4. Contractors should be made aware of the location of all recorded Aboriginal sites and PADs across the development footprint and the locations of these should be marked on all relevant plans for construction workers.
5. All land-disturbing activities must be confined to within the approved disturbance footprint. Should the parameters of the proposed work extend beyond this, then further archaeological assessment may be required.

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1 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd (GHD), on behalf of Enerparc Australia Pty Ltd (the proponent), to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Tilbuster 2 Solar Farm (the proposal).

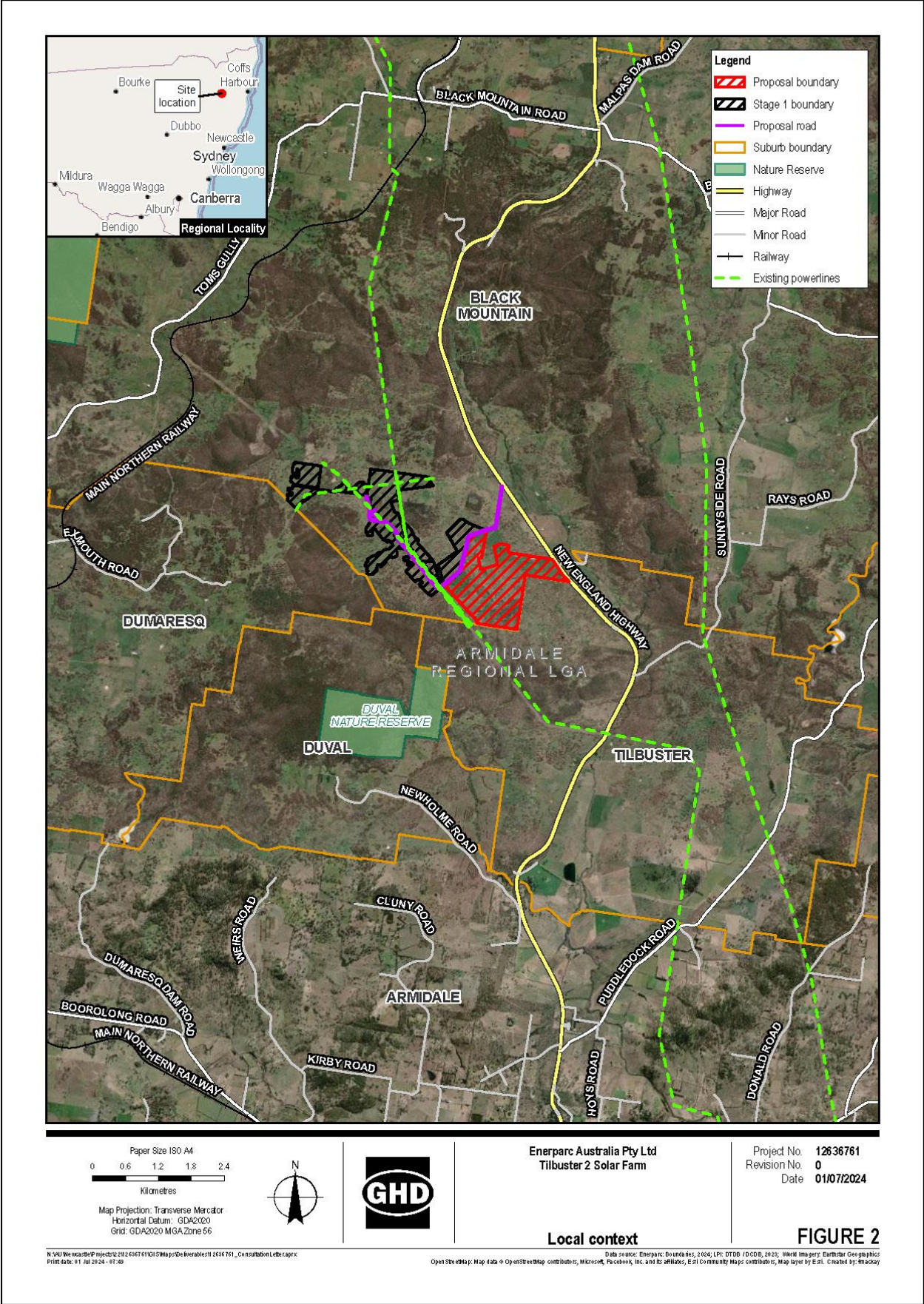
The proponent is developing the Tilbuster Solar Farm (State Significant Development [SSD] 9619), which was approved under Section 2.22 and Clause 20 of Schedule 1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 3 March 2022. The Tilbuster Solar Farm (the project) is located approximately 15 kilometres (km) north of Armidale in the Armidale Regional local government area (LGA), see **Figure 1-1**.

The project involves the construction, operation and decommissioning of a new solar farm with a generating capacity of 150 megawatts (MW) and 15 MW / 30 MW per hour (MWh) of battery energy storage. The solar farm will connect to the existing Transgrid 330 kilovolt (kV) transmission line, which traverses the site and connects Dumaresq substation to Armidale substation.

Due to design refinements made in response to ecological and heritage constraints identified during the preparation of the environmental impact statement (EIS), the project was approved with a lower MW capacity than originally anticipated. As a result, the proponent acquired adjacent land and proposes developing Stage 2 of the project to maximise the generation potential of the site (the proposal).

The proposal is located on land adjoining the project and would make use of transmission, storage and construction facilities on that site.

Figure 1-1: Map showing the location of the proposal and the project in relation to Armidale.



1.2 BACKGROUND

In 2023, OzArk was engaged to assess the proposal in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence; DECCW 2010a), prior to the approval pathway for the proposal being determined.

The entire development footprint for the proposal was subject to survey at a level suitable to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (the Code of Practice; DECCW 2010b). During the field assessment, three Aboriginal sites were recorded including two isolated finds and an artefact scatter with potential archaeological deposits (PAD). Additionally, four areas of PAD were identified.

The proposal has since been classified as an SSD and therefore an ACHAR has now been completed to meet the requirements of the industry-specific *Secretary's Environmental Assessment Requirements* (SEARs) issued for the proposal (SSD-69799460) (see **Section 2.1.2.3**).

This ACHAR utilises the results of the 2023 field assessment, as well as the additional fieldwork undertaken as part of the current investigation (see **Section 6**).

1.3 PROPOSAL OVERVIEW

The proposal involves the construction, operation and decommissioning of a ground-mounted photovoltaic (PV) solar array, which would generate approximately 140 MW, in addition to the 150 MW generated by the project.

The proposal site is located at Lot 4 DP800611, 11915 New England Highway, Black Mountain NSW 2365. The proposal site has an area of approximately 250 hectares (ha), with the proposed development to be constructed on approximately 190 ha of this land.

In total, the construction phase of the proposal is expected to take nine months, and the facility is expected to operate for around 30 years or extended pending further approvals. The proposal would be constructed as part of the overall construction of the approved project. This would reduce the construction period for the proposal and minimise impacts on the community.

The primary access point for light and heavy vehicles during construction and operation would be via an existing access off the New England Highway, currently under construction for the project. Temporary construction compounds and laydowns areas would also be located on the project site.

Construction of the proposal is anticipated to take nine months, with work commencing, pending approval, in early 2025. Up to 100 construction workers would be required.

Up to five full time equivalent operations and maintenance staff and service contractors would operate the proposal, as part of the operation of the approved project. Existing transmission and

storage infrastructure within the approved project footprint would be used to connect the proposal to the national electricity grid.

Figure 1-2 shows the indicative layout for the proposal, including the location of solar PV panels, associated infrastructure and internal access roads.

1.4 PROPOSAL SITE

The proposal site includes the entirety of Lot 4 DP800611 at 11915 New England Highway, Black Mountain, located approximately 6 km northwest of the township of Tilbuster (**Figure 1-3**).

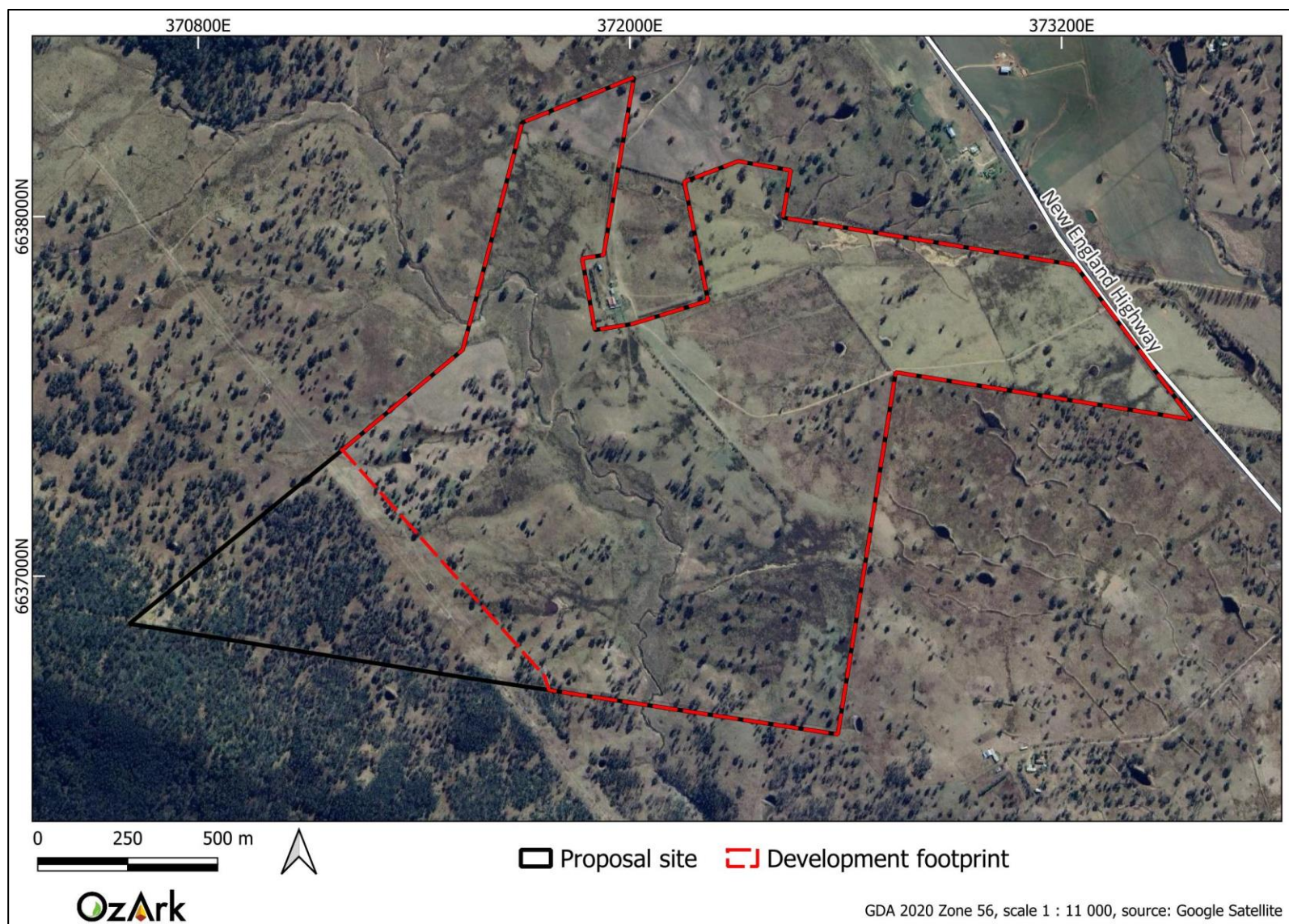
The proposal site is zoned as RU1: Primary Production under the Armidale Regional Local Environmental Plan (LEP) 2012 and is currently used for agricultural purposes.

1.5 DEVELOPMENT FOOTPRINT

The development footprint includes approximately 190 ha of land within the proposal site which will be developed for the proposal (**Figure 1-3**). This ACHAR assesses the development footprint.

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Figure 1-3: Aerial showing the proposal site and the development footprint.



2 THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT

2.1 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). 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.

2.1.1 Commonwealth legislation

2.1.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water, 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.

2.1.1.2 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

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.

Applicability to the proposal

It is noted there are no Commonwealth or National heritage listed places within or near the development footprint or the broader proposal site (see **Section 5.3.1**), and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

2.1.2 State legislation

2.1.2.1 *Environmental Planning and Assessment Act 1979*

The EP&A Act established requirements relating to land use and planning. The main parts of the EP&A Act that relate to development assessment and approval are Part 4 (development assessment) and Part 5 (environmental assessment). The purpose of the Part 5 assessment system is to ensure public authorities fully consider environmental issues before they undertake or approve activities that do not require development consent from a council or the Minister. The Minister responsible for the Act is the Minister for Planning.

The EP&A Act currently provides the primary legislative basis for planning and environmental assessment in NSW. The objects of the EP&A Act include encouragement of:

- The proper management, development, and conservation of natural resources
- The provision and coordination of the orderly and economic use and development of land
- Protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats
- Ecologically sustainable development.

The objects also provide for increased opportunity for public involvement and participation in environmental planning and assessment.

The EP&A Act includes provisions to ensure that the potential environmental impacts of a development or activity are rigorously assessed and considered in the decision-making process.

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

Applicability to the proposal

The proposal will be assessed under Part 4 Division 4.7 of the EP&A Act.

As the proposal is SSD, if approved, Section 4.41 of the EP&A Act would apply and therefore an *Aboriginal Heritage Impact Permit* (AHIP) under section 90 of the *National Parks and Wildlife Act 1974* (NPW Act) to harm Aboriginal objects would not be required. Instead, all management related to Aboriginal cultural heritage within the proposal site would be governed by the policies within an approved *Aboriginal Cultural Heritage Management Plan* (ACHMP).

2.1.2.2 *National Parks and Wildlife Act 1974*

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 Aboriginal 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 AHIP under Section 90 of the Act
- The defendant exercised ‘due diligence’ to determine whether the action would harm an Aboriginal object
- 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 NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) 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.

Applicability to the proposal

Any Aboriginal sites within the development footprint are afforded legislative protection under the NPW Act.

The Secretary of DCCEEW will be notified of the location of an Aboriginal object recorded by sending the relevant details to the AHIMS register.

2.1.2.3 *Secretary’s Environmental Assessment Requirements*

Industry-specific SEARs were issued by the NSW Department of Planning, Housing and Infrastructure (DPHI) on 18 April 2024. In relation to Aboriginal cultural heritage, the SEARs state:

Cultural Heritage and Aboriginal Cultural Heritage – including:

- *Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, including the results of any*

archaeological test excavations (if required) and identifying, describing and assessing any impacts (including from road upgrades) to any Aboriginal cultural heritage sites or values associated with the site.

No additional requirements from Heritage NSW are contained in the SEARs. Additional correspondence regarding the proposal was forwarded to Heritage NSW on 1 July 2024. They replied that they would only respond once documents are submitted to the Planning Portal.

2.2 ASSESSMENT APPROACH

The archaeological assessment followed the Code of Practice (DECCW 2010b).

The Aboriginal cultural heritage assessment followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (the Guide; OEH 2011) and the *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs) (DECCW 2010c).

2.3 PURPOSE AND OBJECTIVES

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

The study will apply the Code of Practice, the Guide, and the ACHCRs in the completion of the Aboriginal cultural heritage assessment to meet the following objectives:

- Objective One:** Undertake background research on the development footprint to formulate a predicative model for site location within the development footprint
- Objective Two:** Identify and record Aboriginal cultural heritage values within the development footprint. This includes intangible cultural values, Aboriginal objects, and any landforms likely to contain further archaeological deposits
- Objective Three:** To assess the significance of any recorded Aboriginal cultural values, Aboriginal objects, or sites in consultation with Registered Aboriginal Parties (RAPs)
- Objective Four:** Assess the likely impacts of the proposed work to Aboriginal cultural heritage values and provide management recommendations.

2.4 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 1a	Review previous archaeological work	Section 5
Requirement 1b	Review 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
Requirement 4a	Develop predictive model	Section 5.4
Requirement 4b	Present predictive model results	Section 5.4.3
Requirement 5a	Archaeological survey sampling strategy	Section 6.1
Requirement 5b	Archaeological survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Archaeological survey units	Section 4.1.1
Requirement 6	Site definition	Section 5.4.1
Requirement 7a	Site recording information to be recorded	Section 0
Requirement 7b	Site recording: scales for photography	All artefact photographs employed a centimetre scale bar.
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	Section 6.1
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 13a	Notifying Heritage NSW of breaches	Not applicable
Requirement 13b	Providing Heritage NSW with information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	Not applicable as test excavation was not warranted
Requirement 15a	Consultation regarding test excavation	Not applicable
Requirement 15b	Developing a test excavation sampling strategy	Not applicable
Requirement 15c	Providing Heritage NSW with notification of the test excavation	Not applicable
Requirement 16a	Test excavation that can be carried out in accordance with the Code of Practice	Not applicable
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable
Requirement 18–20	Artefact recording	The procedures for artefact recording were adhered to during the investigation.

2.5 DATE OF ARCHAEOLOGICAL ASSESSMENT

The initial field assessment was undertaken by OzArk over three days on 9 to 11 August 2023.

The additional field assessment was undertaken by OzArk on 9 July 2024.

2.6 OzARK INVOLVEMENT

2.6.1 Fieldwork

The initial field assessment was undertaken by:

- Fieldwork Director: Dr Jodie Benton (OzArk Director, PhD [Archaeology], University of Sydney)
- Archaeologist: Sophia Grubnic (OzArk Archaeologist, BA University of Melbourne, BA[Hons] University of Queensland).

The additional field assessment was undertaken by:

- Fieldwork Director: Stephanie Rusden (OzArk Senior Archaeologist, BSc University of Wollongong, BA University of New England)
- Archaeologist: Eleanore Martin (OzArk Archaeologist, BA [Hons] University of Queensland).

2.6.2 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report author: Sophia Grubnic
- Reviewer: Stephanie Rusden.

3 ABORIGINAL COMMUNITY CONSULTATION

3.1 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.

australianstogether.org.au

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 50,000 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. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

3.2 ABORIGINAL COMMUNITY CONSULTATION

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

The Aboriginal cultural heritage assessment of the proposal has followed the ACHCRs (DECCW 2010c). 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.

3.2.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the RAPs who wish to be consulted about the proposal.

An advertisement was placed in the *Armidale Express* on 19 April 2024 to solicit expressions of interest (**Appendix 1 Figure 1**).

A letter seeking information from various agencies was sent on 19 April 2024 (**Appendix 1 Figure 2**). These agencies were: Office of the Registrar, *Aboriginal Land Rights Act 1983*; Heritage NSW; National Native Title Tribunal; National Native Title Services Corporation Ltd (NTSCORP); Armidale Local Aboriginal Land Council (LALC), Armidale Regional Council, and the Northern Tablelands Local Land Services.

Letters were sent to individuals and groups whose contact details had been provided by the government agencies (**Appendix 1 Figure 3**).

By the closing date for registration concerning this proposal, the following groups or individuals registered to be consulted as RAPs:

- Anaiwan Traditional Owners Aboriginal Corporation
- Armidale LALC
- Culturally Aware
- Guda Birgingira Aboriginal Corporation
- Gumbaingarr Traditional Owners Aboriginal Corporation
- Jeremy Duncan
- Long Gully Cultural Services
- Iwatta Aboriginal Corporation
- Nunawanna Aboriginal Corporation
- Nyakka Aboriginal Corporation
- Wailwan Aboriginal Group.

These individuals / groups constitute the RAPs for the proposal.

3.2.2 ACHCRs Stage 2

The aim of Stage 2 is to provide information about the proposal to the RAPs.

Detailed information on the proposal was provided in the assessment methodology that was issued to all RAPs for their consideration on 3 June 2024 (**Appendix 1 Figure 4**).

3.2.3 ACHCRs Stage 3

The aim of Stage 3 is to acquire information regarding Aboriginal cultural values associated with the proposal through RAP consultation and field work.

To inform the RAPs of the assessment, an assessment methodology was issued to all RAPs for their consideration on 3 June 2024 (**Appendix 1 Figure 4** and **Appendix 2**). This document provided the archaeological context of the development footprint, details of the results of the 2023 field assessment, a description of the proposed additional field assessment and asked whether there were any cultural values that should be considered in the assessment.

RAPs were provided the stipulated 28 days in which to review and comment on the assessment methodology as per Stage 3 of the ACHCRs. The closing date for comment was 2 July 2024. Responses from RAPs are provided in **Appendix 1 Figure 5**.

One response was received from Long Gully Cultural Services on 3 June 2024 advising that they had reviewed and supported the methodology.

Gumbaingarr Traditional Owners Aboriginal Corporation responded on 4 June 2024 expressing criticism of the use of Tindale's Language Map due to its outdatedness. This group wished to have the Gumbaingarr people included as Traditional Owners in the ethnohistoric information provided in the ACHAR. This view has been duly incorporated into **Section 5.1**.

3.2.4 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 copy of the draft ACHAR was distributed to all RAPs for review on 22 August 2024 with a 28-day review period closing 19 September 2024 (**Appendix 1 Figure 6**).

No responses were received from any RAPs on the draft ACHAR.

3.3 CULTURAL VALUES IDENTIFIED THROUGHOUT THE ACHCR PROCESS

The strong cultural values of Aboriginal communities towards landscapes and cultural heritage sites are recognised.

No specific cultural values were identified by the RAPs regarding the development footprint, however, Nyakka Aboriginal Corporation and Iwatta Aboriginal Corporation advised during the field assessment on 9 July 2024 that women's sites are present to the west of the development footprint. It was confirmed that there are no women's sites within the development footprint itself.

No further information regarding these women's sites and their exact locations has been disclosed.

It is also noted that one Aboriginal ceremony and dreaming site has been registered on AHIMS in the surrounding area, located 2.4 km southwest of the development footprint on Mount Duval (see **Figure 5-2**).

3.4 ABORIGINAL COMMUNITY PARTICIPATION IN THE FIELD ASSESSMENT

The initial field assessment was attended by:

- Peter Moran representing Armidale LALC
- Blare Ahoy representing Iwatta Aboriginal Corporation
- Tyson Ahoy representing Nunawanna Aboriginal Corporation.

The additional field assessment was attended by:

- Rhonda Kitchener representing Nyakka Aboriginal Corporation
- Jocelyn Blair representing Iwatta Aboriginal Corporation.

Guda Birgingira was invited to participate in the additional field assessment, but they were unable to supply a site officer at the time of the survey.

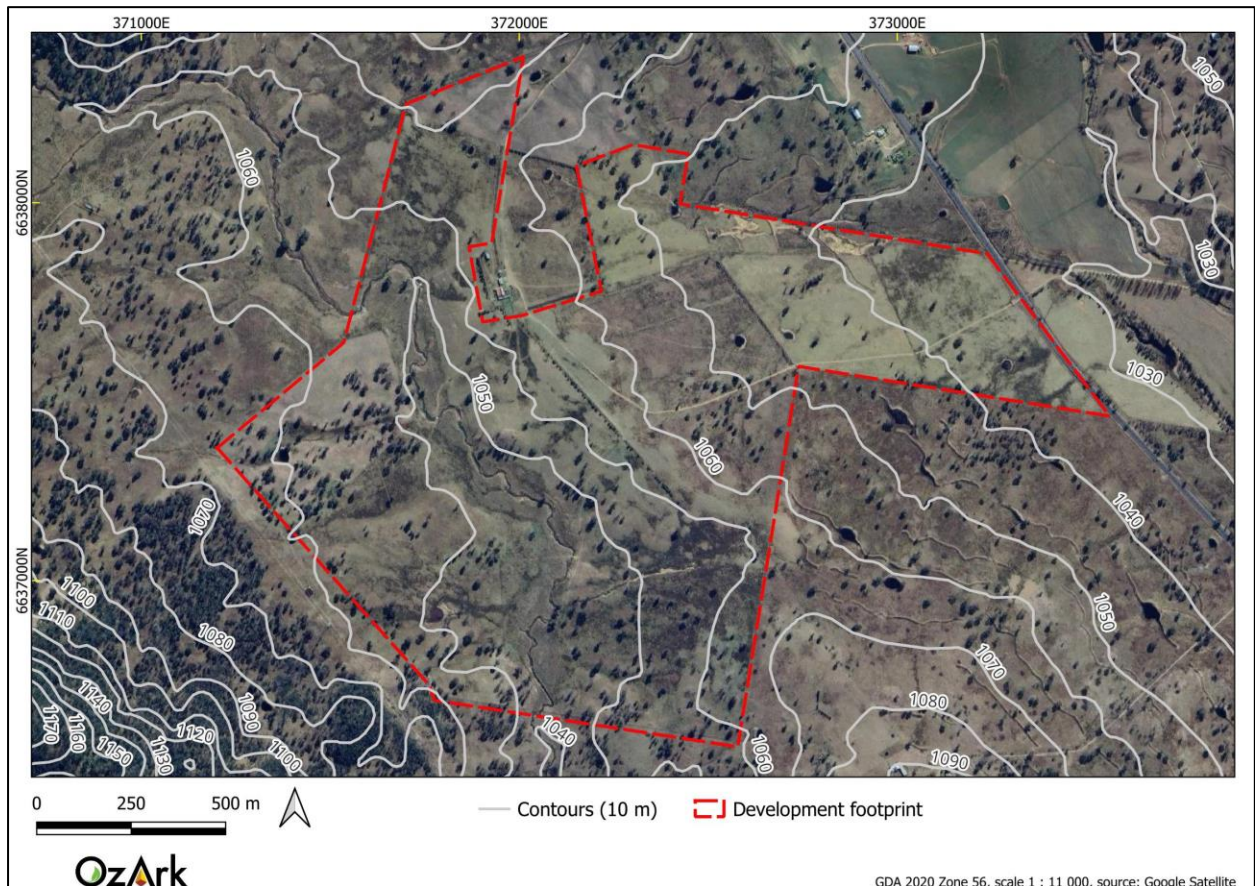
4 LANDSCAPE CONTEXT

An understanding of the environmental context of a development footprint is requisite in any Aboriginal archaeological investigation (DECCW 2010b). 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 human-activated landscape processes, influence the degree to which the remains of material culture 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 development footprint is located at the eastern edge of the NSW New England Tablelands bioregion, specifically, the Armidale Plateau sub-bioregion (NPSW 2003). The bioregion mainly occupies a temperate to cool temperate climate zone characterised by warm summers with uniform rainfall and a subhumid climate. Within the Armidale Plateau sub-bioregion, the development footprint is situated within the Dingo Spur Meta-sediments landscape as characterised by Mitchell (2002). This landscape is defined by steep ranges and hills which extend into the New England Tablelands. Elevations generally range between 300 to 1400 metres (m) above sea level (asl).

The topography of the development footprint consists of a central crest at 1060 m asl, with a gentle slope receding to the east in the eastern portion of the development footprint, while the western portion contains moderate and gentle slopes surrounding the alluvial plain associated with Dual Creek. The maximum elevation of the development footprint is 1070 m asl in the north and the minimum is 1040 m asl in the east along Duval Creek (**Figure 4-1**). The slopes across the development footprint contain numerous non-perennial drainages associated with Duval Creek and Tilbuster Ponds which is to the east, outside the development footprint.

Figure 4-1: Topography of the development footprint.

4.1.1 Survey units

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

Digital elevation modelling (DEM) has been used to analyse the gradient of slopes within the development footprint and provide specific identification of the slope classes present. **Figure 4-2** illustrates where slope inclines are either gentle slopes (*less than 5 degrees*) or moderate slopes (*greater than 5 degrees*), as per the *Australian Soil and Land Survey Field Handbook* (CSIRO 2009). Almost the entirety of the development footprint falls within the gentle slope category. No slopes within the development footprint can be classified as steep (inclines greater than 18 degrees).

The landform mapping and the previous survey undertaken across the development footprint indicates there are four main landform types: crest, moderate slopes, gentle slopes and alluvial flats (**Figure 4-3**).

Figure 4-2: Digital elevation modelling of the development footprint.

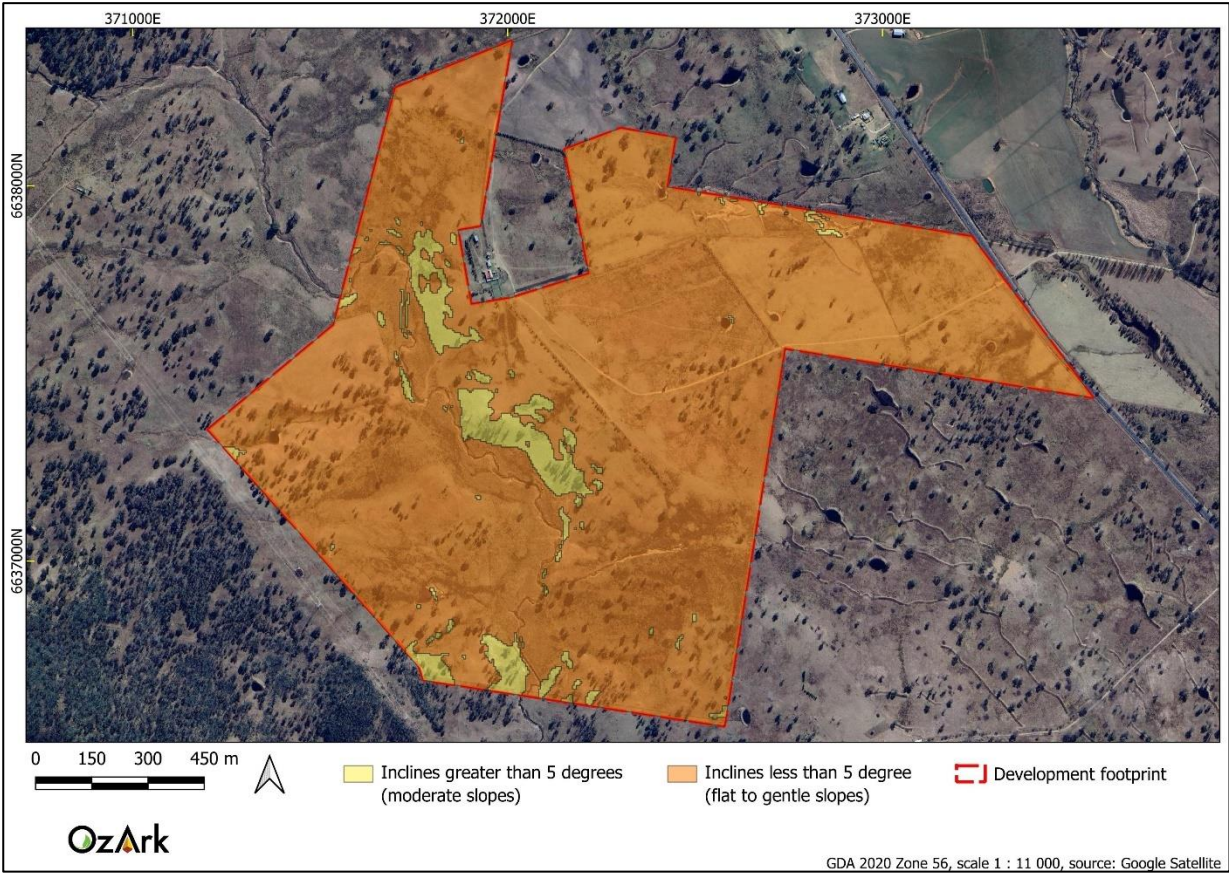
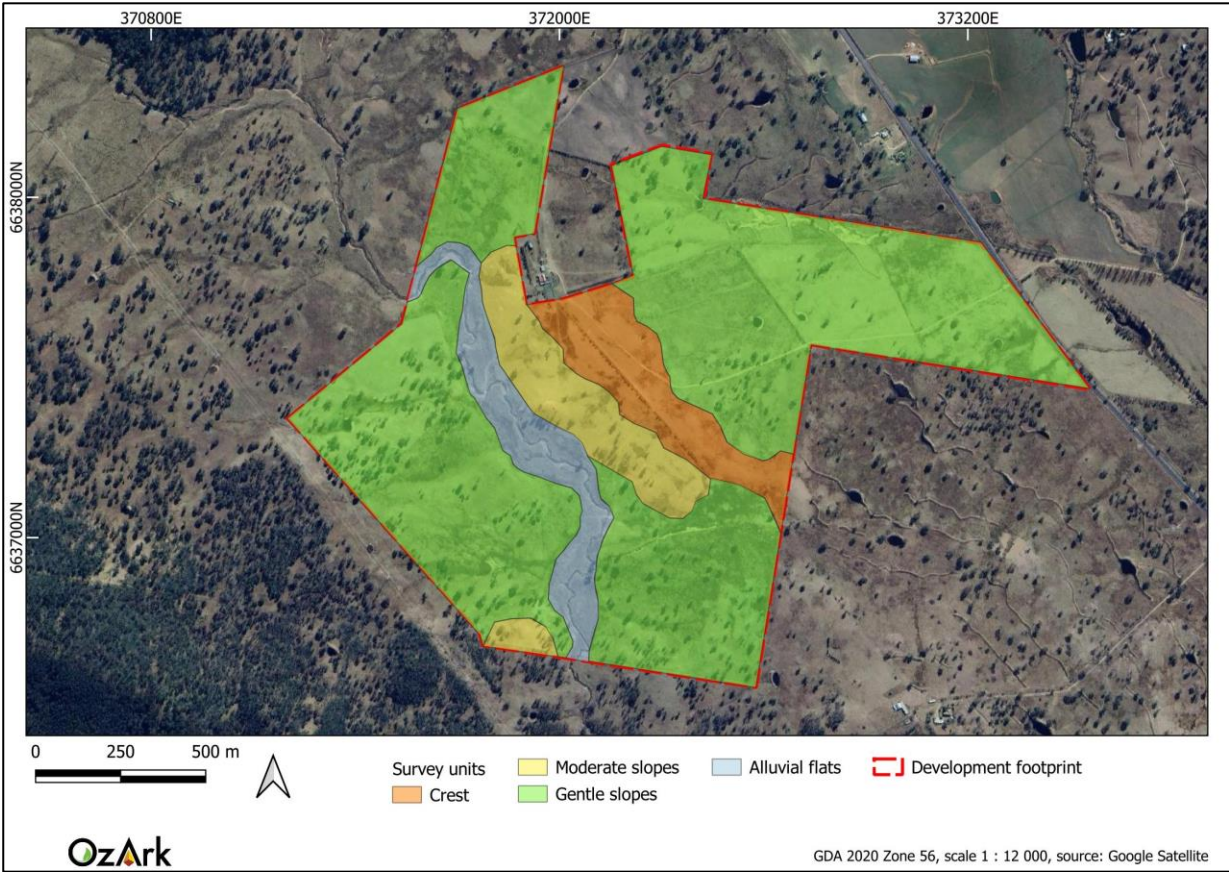


Figure 4-3: Survey units across the development footprint.



4.2 GEOLOGY AND SOILS

The geology of the Armidale Plateau subregion is characterised by fine grained permo-carboniferous sedimentary rocks, multiple tertiary basalt flows and granites (NPWS 2003) and the development footprint itself is largely in the Sandon Beds Formation (cs) identified in the New England Geological Map (1:500 000 1973/333). The Sandon Beds Formation (cs) comprises greywacke, claystone, chert, jasper and black volcanic.

Soil analysis has important ramifications for archaeological research through the potential impact of different soils on human activity (such as agricultural exploitation) and the impact of the soils on archaeological evidence (such as post-depositional movement).

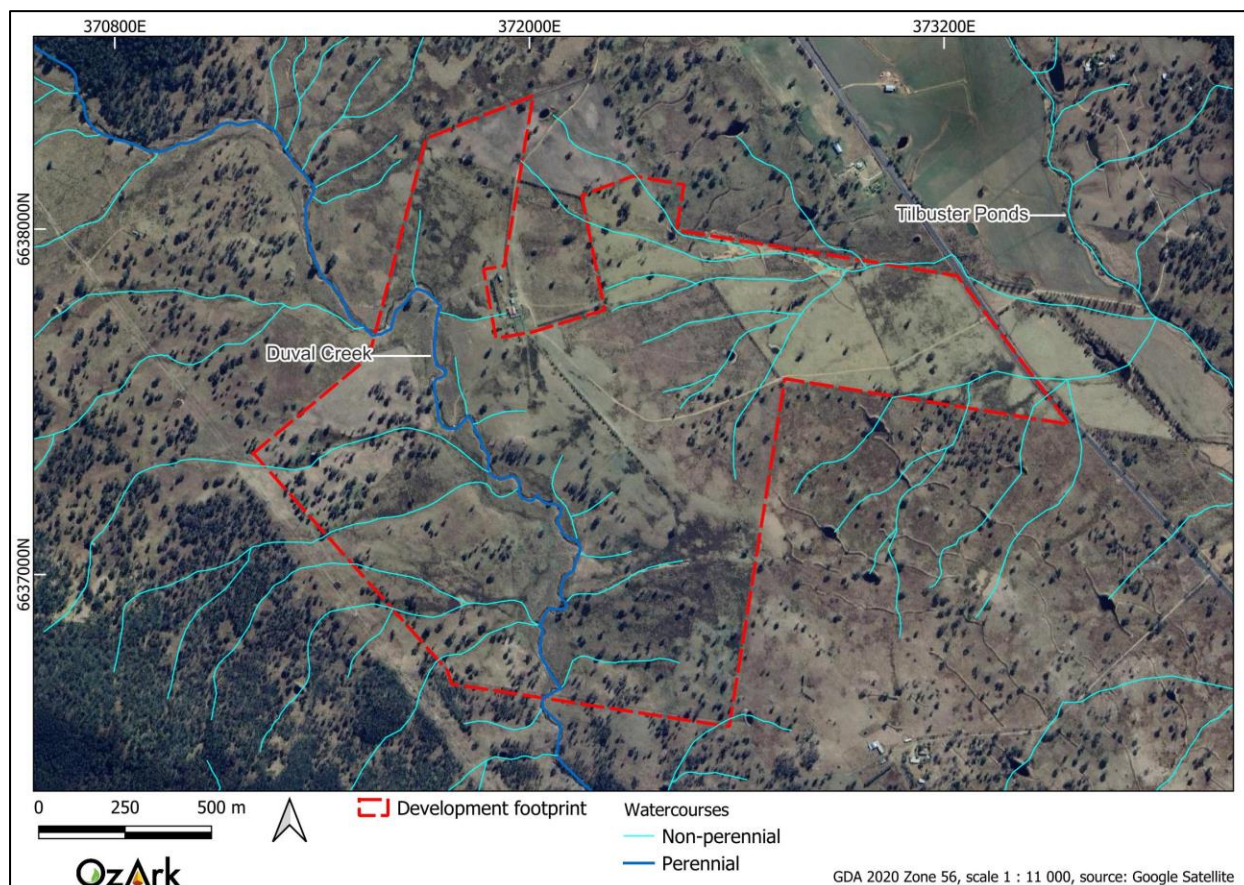
Soil data specific to the development footprint is overall limited and generalised. According to Mitchell (2002), the general soil profile associated with the Dingo Spur Meta-sediments landscape comprises shallow stony loam on steep scree slopes with moderate organic content. Shallow gradational loam and sandy loam elsewhere with deeper uniform profiles in low valleys.

The Australian Soil Classification data classifies similar landforms in the surrounding landscape as chromosols. These are characterised as having a strong texture contrast between A horizons and B horizons, specifically, the B horizons are defined as being not acidic and not sodic (Isbell 2021: 35). Low sodicity generally indicates that the soils have greater stability, water holding capacity, and are less likely to be highly erodible.

4.3 HYDROLOGY

Perennial water sources local to the development footprint include Duval Creek, a fifth order watercourse which traverses the western portion of the development footprint (**Figure 4-4**), and Dummy Creek, located 1.3 km to the east. Tilbuster Ponds, a non-perennial watercourse, is located 500 m east of the development footprint and drains into Dummy Creek. The nearest major water supply is the Gara River, located 12 km to the east.

Roughly 1.9 km of Duval Creek intersects with the development footprint on a northwest-southeast alignment, with numerous associated drainage lines crossing the development footprint east and west of the creek line. Further northeast in the development footprint, the hydrology is comprised of an unnamed, ephemeral tributary to Tilbuster Ponds, and several of its own run-offs. Aerial imagery shows that two artificial dams have been dug in along this watercourse and represent high levels of associated landform modification.

Figure 4-4: Watercourses in relation to the development footprint.

4.4 VEGETATION

The vegetation communities present within the development footprint are largely native regrowth in scattered or isolated stands. Commonly featured tree species in the region comprise silver-top stringybark, New England stringybark on dry aspects, Blakely's red gum, yellow box and apple box on moist, well-drained slopes, and New England peppermint with ribbon gum on flats (NPSW 2003:161).

Aerial imagery from 1965 (**Figure 4-5**) indicates that many of the scattered trees currently visible within the development footprint were present in 1965, over 60 years ago. At that time, many of these trees appear to have been juvenile and occur in a landscape which has been extensively cleared of trees and used for agriculture. It is likely that these trees are the result of revegetation after early land clearing and will not be of sufficient maturity to bear cultural modifications.

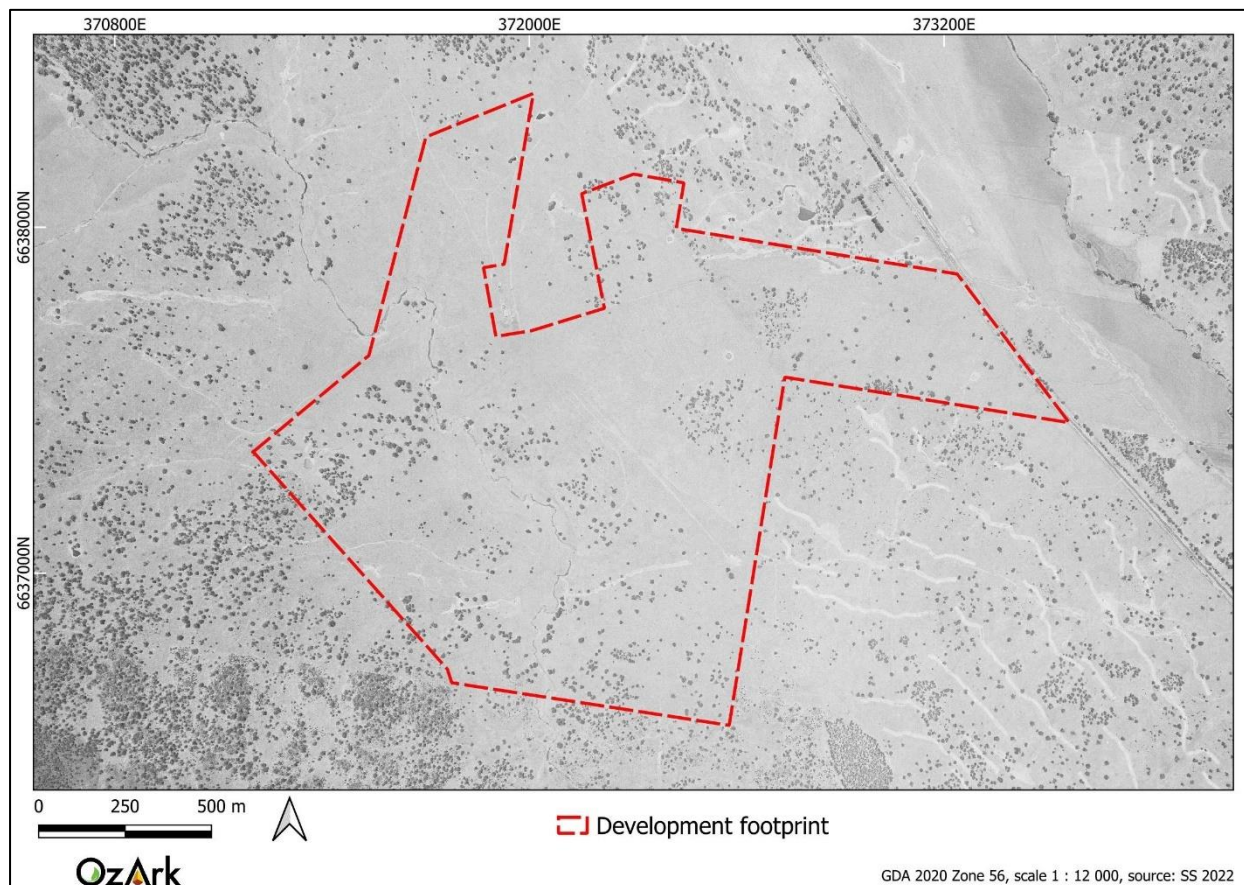
4.5 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

The development footprint has been historically cleared and is utilised for agricultural practices, principally grazing and cultivation (**Figure 4-5**). The presence of hooved livestock is likely to have resulted in trampling and compaction of the ground surface, which generally contributes to accelerated soil loss. Likewise, ploughing and tracks from heavy machinery will have impacted

the integrity of the ground surface, specifically in the top 20-25 centimetres (cm) of topsoil, but can include disturbances down to 50 cm.

There are several dams in the development footprint, including two which have been incorporated into the natural course of an ephemeral waterway. Other landform modifications that have been constructed across the development footprint include creek crossings for vehicle and stock at Duval Creek, and an access track to provide access to the New England Highway.

Figure 4-5: Aerial from 1965 showing the development footprint.



4.6 CONCLUSION

The review of the environmental factors associated with the development footprint allows the following conclusions to be drawn in terms past Aboriginal occupation:

- Topography and hydrology: the gently undulating landforms which dominate the development footprint would have been hospitable to Aboriginal people, particularly along more elevated, flat areas adjacent to Duval Creek. Moderately steep slopes across the development footprint are not conducive to occupation, while crests are more likely to have been used as a travel routes or resource gathering area.
- Geology and soils: the geology of the development footprint indicates that sources of stone procurement for tool manufacture may be present should outcropping rock be present, in the form of greywacke, chert, jasper and black volcanic. Soil data indicates that soils across the development footprint have greater stability, water holding capacity,

and are less likely to be highly erodible. However, the use of all landforms in the development footprint for cultivation and / or grazing will have had an impact on the erosional qualities of the soils present. Additionally, the integrity of the any potential subsurface deposits across landforms which have been subject to cultivation will be impacted to depths around 20-25 cm.

- Vegetation: the development footprint would have once supported an open woodland which would have provided resources for Aboriginal subsistence in the past. More abundant resources likely to have supported a large population of people for a long time would have been present closer to the banks of the region's major waterways, including the Gara River located 12 km east of the development footprint. The broad-scale vegetation clearance which has taken place across the development footprint for agricultural purposes reduces the likelihood that culturally modified trees remain present, however, should mature native vegetation remain, culturally modified trees may be present.
- Land use: ground surface disturbances such as vegetation clearance, earth moving, cultivation, and grazing are present throughout the development footprint. These activities may have displaced Aboriginal objects and are likely to have reduced the potential for intact subsurface archaeological material. However, disturbance at a given location does not necessarily mean that there will be no cultural material present, as often a disturbed context will reveal objects which may have previously been subsurface. As noted above, initial vegetation clearing would also have significantly reduced the likelihood of culturally modified trees remaining.

5 ARCHAEOLOGICAL CONTEXT

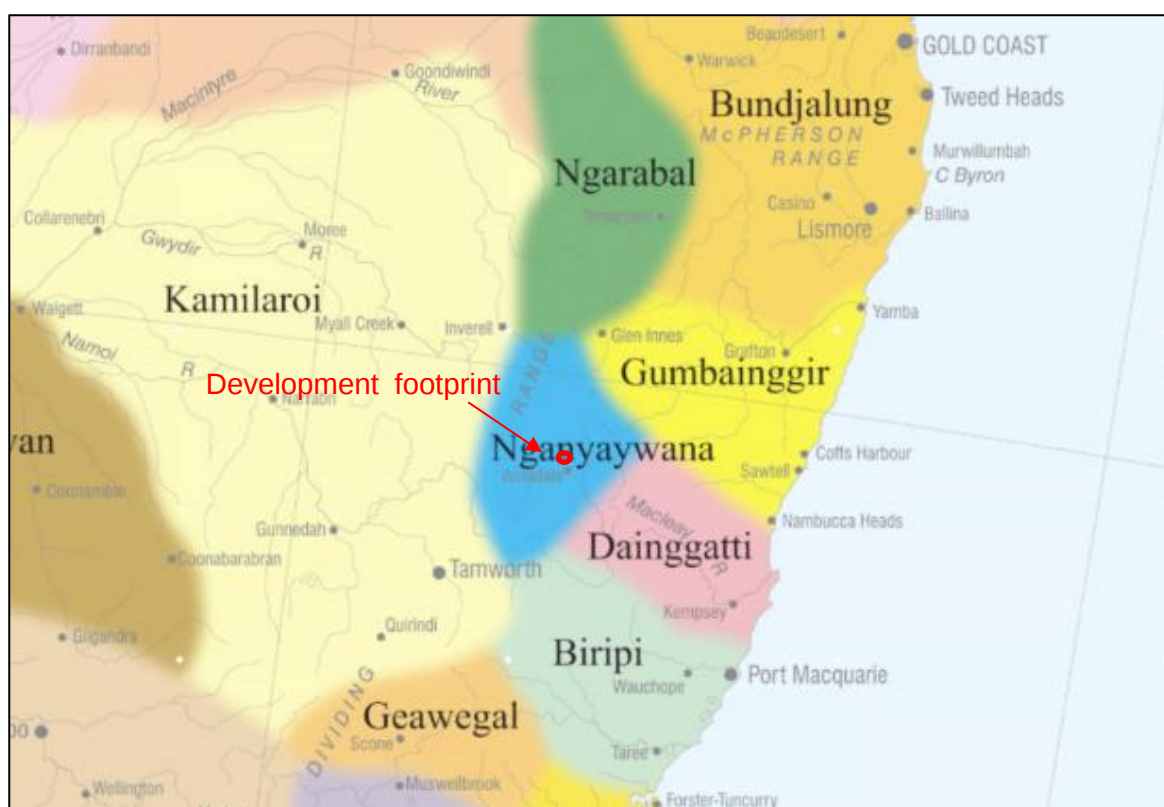
5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

According to Horton's *Map of Indigenous Australia*, the development footprint is in the traditional lands of the *Nganyaywana*; also known as the *Anaiwan* people (**Figure 5-1**). Tindale (1974) recorded the location of the *Anaiwan* as being within the “*New England tableland from Guyra and Ben Lomond south to Uralla and Moombie Range; northwest to Tingha; at Bendemeer and Armidale*”. Clayton-Dixon (2019) notes that the *Anēwan* (*Anaiwan*) language group was located near Armidale. *Yaniwan* and *Anēwan* are part of the same group of languages.

It is important to recognise the use of the term ‘tribe’ and the designation of lines on a map as ‘tribal boundaries’, such as Tindale applied, as being controversial issues (Bowdler 1983: 22). These concepts are designated according to language groups and are at risk of misrepresenting socio-cultural organisations in Aboriginal society. It is likely that mapped boundaries such as Tindale illustrates were in fact fluid and that cultural and linguistic interactivity across boundaries was a regular occurrence.

Despite the information provided above, a RAP for the proposal has advised that the New England Tablelands are also within the traditional lands of the Gumbaingarr people, and therefore considers any tangible and/or intangible heritage values of the development footprint and its surrounding landscapes hold great cultural and spiritual importance to present Gumbaingarr people.

Figure 5-1: Horton's Map of Indigenous Australia – Armidale region shown in blue (AIATSIS 2024)



Clayton-Dixon (2019: 28–30) describes the rapid colonisation of the district that began in the late 1830s. In September 1839, government records show that there were 37 stations across the Tablelands holding 422 colonists. By 1841 the colonial population had tripled to 1,052. Considered by Governor Gipps to be “*one of the best grazing districts in the colony*”, the Tablelands saw exponential growth in the number of stations it held. By 1848 there were 132 stations, and the New England district quickly became the epicentre of colonial expansion. In 1846 a Sydney newspaper, *The Spectator*, reported that “*there is perhaps not another district in New South Wales that can equal New England in its rapid rise in importance, in population, in wealth*”. Despite colonial settlement starting later than other neighbouring districts, the New England district colonial population soon outnumbered those of its neighbours. By 1860 there were over 7,000 colonists in the district with a population density of over 100 colonists for every 1,000 square kilometres.

By contrast, the estimates of the Aboriginal population in the early colonial period are more fraught with inaccuracies. Commissioner Macdonald, for example, estimated in 1842 that the population did not exceed 500–600, however, he noted the following caveat:

It is at all times a matter of much difficulty to determine the number of Natives frequenting particular districts of country with any certainty in consequence of their wandering and unsettled habits of life, a tribe remaining in any one encampment for more than a week or 10 days at a time, except when they congregate in force at certain seasons of their religious ceremony.

Clayton-Dixon (2019: 32)

In 1851, Doctor Thomas Markham, Medical Superintendent to the New England Aborigines (sic), noted:

If I were to take the statement of every settler as to the number of Blacks on his run, I am positive the number would amount to 600.

Clayton-Dixon (2019: 34)

As Clayton-Dixon (2019: 34) notes, this figure does not include Aboriginal people living away from settlements and perhaps failed to note a further 100 people who continued to live in the more remote parts of the district; particularly in the rugged eastern escarpment country.

5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Archaeological studies of the New England Tablelands are closely associated with the University of New England (UNE), along with archaeological consultancy investigations in response to proposed developments across the region. The academic studies have led to the development of regional Aboriginal occupation models, particularly from the mid-Holocene onwards.

Initial archaeological research by UNE indicated that Aboriginal occupation of the Tablelands was seasonal and transitory. Evidence has found that Aboriginal occupation within the New England Tablelands centred on rivers, creeks, and rock shelters (RPS 2008, Davidson 1978). It is believed that occupation within this region would have been seasonal due to the naturally cold environment and paucity of resources. It seems the area was home to small population groups with boosts in population during summer as the Aboriginal people moved from the coast and western slopes to these higher areas (RPS 2008, Davidson 1978, Belshaw 1978, Bowdler 1981). Some argued that instead, the New England Tablelands were mainly used for ceremonial purposes which was supported by the rich archaeological record of Bora Rings, art sites, stone arrangements, and carved trees along with Aboriginal knowledge of intangible sites (Flood 2010: 238–239).

The initial hypotheses of seasonal occupation in the New England Tablelands were challenged as a result of further research at UNE. In a major study, Luke Godwin argued that the New England Tablelands were not abandoned in winter at all but occupied all year round by small mobile groups. His evidence based on ethno-history, climate and surface archaeology suggests that the cold winter climate of the New England Tablelands was not a barrier to year-round settlement (EMM 2018: 35). Godwin identified that the New England Tablelands had varying resources zones of woodland, grassland, and wetlands.

A more recent study by Beck, Haworth and Appleton published in 2015 built upon the theory of year-round settlement, with a specific focus on the resources of lagoons in the upland wetlands (EMM 2018: 36). The researchers found that during the later Holocene, Aboriginal occupation in this area became more appreciable, including a high number of ceremonial sites in association with areas of greatest lagoon concentration. They hypothesise that the drier, more uncertain climate of the late Holocene would have concentrated game around larger lagoons which became the focus of consumption and exchange for Aboriginal people. They argue that the concentration of resources would have supported larger numbers of people often associated with ceremonial activity.

The most informative results were gathered from Barley Fields Lagoon, where optically stimulated luminescence dating has identified dates of possibly early Holocene occupation, which are currently the earliest dates on the Tablelands (EMM 2018: 36). The excavation also extended to the south of Barley Fields Lagoon into a quarry of silcrete where several subsurface silcrete artefacts were identified.

By distinguishing certain features of stone tools that are common to all sites, the dating of Aboriginal occupation in the New England Tablelands can be achieved within a rough estimate. The heavy core and flake scrapers (40,000–10,000 years ago) of the ‘Australian Core Tool and Scraper Tradition’ have been associated with making wooden tools such as boomerangs, spears, clubs, and throwing sticks. Tools of the newer industries (10,000–5,000 years ago) are relatively

small in size and are defined by shape as points, adzes and backed (blunted) blades and are known as the 'Small Tool and Scraper Tradition'. These smaller tools are found in conjunction with chisels and axes. The oldest examples of these stone tools come from the New England region (Binns and McBryde 1972, McBryde 1974). There was a further change in technology (1,000–400 years ago) with a loss of some items from the range (backed blades and finely retouched [re-sharpened] blades) were replaced with simple flakes, bipolar pieces and ground edge axes, and a greater use of shell, bone and glass for tool making.

From the available evidence of stone tool typology, therefore, the New England Tablelands were increasingly occupied during the Holocene but that earlier dates are infrequent and often unreliable. Archaeological and linguistic evidence suggests that the New England Tablelands were most intensively occupied from around 4,000 years ago (EMM 2018: 36). This is based on the finds of surface or near-surface artefacts, with very little found at greater depth. The oldest known Aboriginal site on the Tablelands is Graman Shelter B1 (near Inverell) (5,450 years old) (RPS 2008: 7) and a 4,300-year-old site near Bendemeer on the southern edge of the Tablelands (EMM 2018: 36) (although this may change based on recent findings at Barley Fields Lagoon noted above).

5.3 LOCAL ARCHAEOLOGICAL CONTEXT

5.3.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any previously recorded heritage within the development footprint. The results of this search are summarised in **Table 5-1** and presented in detail in **Appendix 3**.

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

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	30/6/24	Armidale Regional LGA	No places listed on either the National or Commonwealth heritage lists are located within the development footprint.
National Native Title Claims Search	30/6/24	NSW	No Native Title Claims cover the development footprint.
AHIMS	17/5/24	5 x 5 km centred on the development footprint	91 sites AHIMS records within the search area. Three recorded Aboriginal sites are within the development footprint: #21-1-0574 #21-1-0575 #20-3-0094
Local Environmental Plan (LEP)	30/6/24	Armidale Regional LEP of 2012	None of the Aboriginal places noted occur within or near the development footprint.

A search of the AHIMS database on 17 May 2024 returned 91 records for Aboriginal heritage sites within the designated search area (GDA Zone 56 Eastings: 369750- 374750; Northings:

6634900- 6639900). **Figure 5-2** shows the location of the AHIMS sites that have been recorded near the development footprint, and **Table 5-2** shows the site types and frequencies.

Figure 5-2 shows there are three recorded Aboriginal sites within the development footprint. These include two isolated finds and an artefact scatter with PAD, all of which were identified by OzArk during the 2023 survey of the development footprint and are discussed in further detail in **Section 6**. Numerous additional sites have been recorded surrounding the development footprint, particularly within the assessed area for the project by NGH (2020). These sites have been mostly recorded along the lower elevation landforms, generally on gentle slopes, adjacent to Duval Creek and its associated drainage lines (**Figure 5-2**).

Table 5-2: Site types and frequencies of AHIMS sites near the development footprint.

Site Type	Number	% Frequency
Isolated find	44	48.4
Artefact scatter	36	39.6
Modified tree (carved or scarred)	9	9.9
Artefact scatter with PAD	1	1.1
Aboriginal ceremony and dreaming	1	1.1
Total	91	100

The most frequently recorded site types are isolated finds which contribute 48.4% of the site types in the vicinity of the development footprint and artefact scatters which account of 39.6%. Modified trees (carved or scarred) are less frequently recorded (9.9%) (see **Table 5-2**). One Aboriginal ceremony and dreaming site has also been recorded in the surrounding area, located 2.4 km southwest of the development footprint on Mount Duval.

Figure 5-2: Location of previously recorded AHIMS sites in relation to the development footprint.

This figure has been redacted

5.3.2 Previous studies in or near the development footprint

Excavations at Mt Yarrowyck (Williams 1980)

Williams excavated a series of rock shelters in the vicinity of, and including, the Mount Yarrowyck Art Site, approximately 25 km southwest of the development footprint in the Bulagaranda (Mount Yarrowyck) Aboriginal Area. Williams (1980: 83) found the art site was most likely occupied around 400 years ago and possibly as far back as 4,000 years. The results of the excavations suggested that none of the places were long term 'habitation' sites. Rather, the rock shelters appeared to have been used for maintenance activities and the Mount Yarrowyck site appeared to be a ceremonial site (Williams 1980: 85).

Proposed Cable Route Between Thalgarrah and Argyle (Appleton 1992)

Appleton undertook an archaeological survey to the north of Armidale at Thalgarrah, approximately 19 km southeast of the development footprint. Six artefact sites were recorded comprising five low-density artefact scatters and one isolated artefact. All the artefact scatters were found in erosion features and the isolated artefact was found along a vehicular track. Twenty-seven artefacts were recorded at the sites, predominantly composed of silcrete. All raw material types encountered were available locally, except for basalt. One large artefact scatter was located on a spur, overlooking a watercourse.

Metz Solar Farm (Remnant Archaeology 2017)

In 2017, Remnant Archaeology undertook an Aboriginal cultural heritage assessment for the proposed Metz solar farm located approximately 23 km to the southeast of the development footprint, including an impact footprint of up to 750 ha. Three low density artefact scatters containing three artefacts or less, and thirty-seven larger artefact scatters containing more than three artefacts, were recorded. Mudstone and quartz were the most common raw material types, with silcrete, chert and basalt also present. Artefacts included axes, multiple platform cores, retouched flakes, and a grindstone. Two Aboriginal scarred trees and a small stone arrangement were also recorded in the development footprint. Of the three total survey units used in this assessment, 19 sites were recorded in undulating plains, 18 sites in gentle slopes, and only six isolated finds in landforms associated with creeks.

Transgrid Queensland Connection project (Burke et al. 2000)

Surveys undertaken as part of the Transgrid Queensland Connection project included part of the southwest boundary of the development footprint. In total, 33 scatters and 11 isolated finds were identified in the transmission line study area. Of these, those located closest to the development footprint are all artefact scatters, identified along Duval Creek and its associated drainages. A summary of the analysis undertaken relevant to the New England Tablelands concluded that:

- Silcrete was the preferred raw material for the manufacture of stone implements, which may be due to the lack of abundance of other raw materials
- The silcrete source/s are likely to be located to the south of the New England Highway, possibly within the area between Rockvale Road and Puddledock Road
- Quartz sources are likely located in association with the Tilbuster Granodiorite
- The metabasalt source/s are most likely located south of the New England Highway within near Rockvale Road
- Chert source/s are most likely to be found south of the New England Highway and close to the Rockvale Road area
- Quartzite source/s are most likely found south of the New England Highway and closest to Rockvale Road.

New England Solar Farm (EMM 2018)

EMM (2018) completed the archaeological assessment for the New England Solar Farm which includes landforms like those in the development footprint but is located 30 km to the south.

Through background research and landscape analysis, EMM predicted that the study area had the potential to feature a range of Aboriginal sites including stone artefacts, scarred trees, quarries and grinding grooves. Based on a search of the AHIMS register, no Aboriginal sites had previously been recorded in the EMM study area.

The survey focused on the proposed development footprint (i.e. where project infrastructure was proposed) and on areas likely to feature Aboriginal sites, but also extensively sampled areas and landscapes less likely to feature sites to test the survey predictions. The EMM survey coverage results indicated that the ground surface visibility (GSV) conditions during the survey were generally effective to characterise the distribution of archaeological sites across their survey area.

The EMM survey identified 95 Aboriginal sites, detailed in **Table 5-3**. As demonstrated by this table, most of the sites recorded by EMM were artefact sites, with artefact scatters and isolated finds (with and without PAD) comprising 74% of the recordings

Table 5-3. Sites recorded by EMM 2018.

Site type	Number of sites recorded	Percentage of total
Isolated find	43	45
Artefact scatter	16	17
Scarred tree	13	14
Artefact scatter with potential archaeological deposit (PAD)	9	9
Quarry, artefact scatter, PAD	5	5
Grinding groove, artefact scatter, PAD	4	4
Isolated find, PAD	3	3
Grinding groove	1	1

Site type	Number of sites recorded	Percentage of total
Grinding groove, PAD	1	1

EMM identified Aboriginal sites in each of the landform classes defined for the survey. The highest frequency of sites was identified on crests (57%), followed by hill slopes (30%), flats (6%) and watercourses (6%). Notably, all site type features are represented on crest landforms and contain the most archaeologically significant sites, including all the stone quarry sites, all open stone artefact sites attributed with PAD and the most significant grinding groove site (NE09).

Sites were identified an average of approximately 218 m from 1st or 2nd order streams, 960 m from 3rd order streams and 1,750 m from 4th order and above streams, with the minimum distance being 3 m and the maximum distance being 764 m. The median distance from mapped watercourses was 166 m. The considerable average distance from higher order streams indicates that lower order streams (particularly 2nd order) could support low intensity camping and resource gathering activities.

Approximately half of the sites identified on hill slope landforms were isolated artefacts which are largely attributed to 'background scatter' caused by isolated events or accidental discard. Over half of the scarred trees identified were on hill slope landforms.

Three of the six grinding groove sites identified were on hill slope landforms in areas with outcropping silcrete bedrock. Most of the sites identified on flats and watercourses were isolated artefacts but also included isolated incidences of scarred trees and artefact scatters.

Stone artefact scatters (including those with PAD) were mostly identified on crest landforms (n=19, or 76%). The remaining artefact scatters were rare and occurred on hill slopes (n=5) and on a watercourse in one instance (NE44). Isolated finds were more widely distributed throughout the landscape, whereby only half occurred on crests (n=23), followed by hill slopes (n=14), flats (n=5) and watercourses (n=4). The wider representation of isolated finds suggests they are generally a product of more transitory occupation, except where on a crest considered to have PAD. The artefact scatters (n=9) and isolated artefacts (n=3) associated with PAD are mainly on crests defined by outcropping granite and/or silcrete boulders which has acted to protect these sites from considerable disturbance. Artefacts were commonly identified amongst the outcropping boulders and noticeably discontinued outside of the crest areas, even if ground surface visibility levels remained favourable for artefact detection.

A total of 238 surface artefacts were recorded during the survey. Artefact frequencies ranged from 1 to 19 across the sites that featured stone artefacts. The average artefact frequency per site was low at only 2.6, which is noted by EMM as being not surprising considering that 46 of the 80 sites that featured stone artefacts were isolated finds.

The largest percentage of artefacts is classed as complete flakes (42%). Fragments of broken flakes including proximal, medial, and distal portions, as well as flaked pieces and longitudinally

split flakes make up a further 14% of the assemblage. Notably, a total of 75 cores were identified, making up 31% of the assemblage. EMM notes that this is a very high proportion when compared to typical artefact assemblages and is a strong indicator that much of the raw material for stone tool manufacture was sourced locally.

A total of 12 retouched flakes were identified (8%), eight of which were classed as retouched axe blanks. Five of the axe blanks were identified as basalt and three were identified as metamorphosed greywacke. Notably, none of the axes showed evidence of grinding and all were bifacially flaked. The remaining four retouched flakes were all of silcrete and included two scrapers and two flakes with retouch along their lateral margins.

Silcrete was the predominant artefact raw material (n=112). A total of 52 chert artefacts were identified, and over half of these were flakes (n=31). Material labelled as 'volcanic' included basalts and metabasalts. Quartzite made up only 5% of the assemblage.

Six grinding groove sites were identified during the survey. All of the grinding groove sites were identified in areas of outcropping coarse silcrete bedrock resembling granular quartzite.

Grinding groove sites were identified within an elevation range between 1,030–1,080 m above sea level. This closely correlates with Appleton's observation of silcrete outcropping at 1030 m above sea level throughout the Tablelands (EMM 2018: 77).

The most significant and extensive grinding groove site was identified on a prominent hill crest along the southern boundary of the northern array area (NE09). The survey team counted approximately 100 grooves made up of concentrations across the width of the crest on outcropping silcrete bedrock. EMM postulated that further grinding grooves are likely to occur on the site where soil and vegetation debris are obscuring the bedrock surface.

NE09 is relatively far from a waterway, being over 220 m from a 1st order stream and over 850 m from the nearest 3rd order stream. EMM note that grinding activities typically require the aid of water to assist stone abrasion and it is assumed that the bedrock pavements at NE09 easily captured water in rock pools. The grooves observed were elongated and oval in shape typical of the axe grinding process. Additionally, stone artefacts including basalt, silcrete and chert flakes and a basalt hammerstone were identified within 20 m of the outcropping silcrete at the periphery of the site. Despite concentrated survey effort further from the site, surface artefacts did not appear to extend past this distance.

A total of 13 scarred trees were recorded across the EMM study area. All the examples were on dead trees and typically scars were small and round to oval in shape, starting from around 350–400 millimetres (mm) but up to 100 mm from the base of the tree. Such scars may have been used for containers (such as coolamons) or shields, but the ambiguity of bark regrowth makes it difficult to determine their original forms. Larger, more elongated scars were rarer, with one scar

(N39) extending over 2 m which could possibly represent bark removal for a single-person canoe or bark for shelter.

The survey team identified five open stone artefact sites which are considered to be Aboriginal stone quarries. Stone quarries were defined by the presence of outcropping stone material with adjacent evidence of the same material type used in stone tool manufacture process. Stone quarries of a variety of material were identified in the survey area, comprising silcrete (NE14 and NE22), basalt (NE21 and NE33) and greywacke. However, EMM note that quarry sites were rarely identified considering the high amount of outcropping material, including basalt, silcrete, greywacke, chert, and jasper, observed on crests and slopes during the survey.

Tilbuster Stage 1 Solar Farm (NGH 2020)

In 2020, NGH undertook the Aboriginal cultural heritage assessment for the project over Lot 1 of DP 225170, Lot 1 of DP 585523 and Lot 3 of DP800611, located immediately adjacent to the development footprint.

The assessment recorded 49 isolated finds, 28 artefact scatters, six scarred trees and three cultural trees. It was later determined through further community consultation that two of the trees (21-1-0039 [Tilbuster Solar ST6]) and (21-1-0316 [Tilbuster Solar CT2]) were not culturally modified and therefore 'not a site'.

The assessment identified thin A horizon silty topsoils above a compacted silty clay B horizon with significant erosion noted across the assessment area. It was therefore determined that there was little potential for subsurface deposits across majority of the landscape except for near artefact scatters Tilbuster Solar AS24 and AS25. As a result, test excavation was undertaken with nine pits excavated at Tilbuster Solar AS24 and seven pits excavated at Tilbuster Solar AS25. Test pits depth ranged from 20 cm to 40 cm, with most test pits excavated to a depth of 30 cm below the surface. Of the sixteen excavated test pits, only nine contained artefacts. Most pits containing artefacts were located to the north of an elevated spur above Duval Creek, adjacent to a shallow ephemeral drainage line and below the crest on which the majority of AS24 artefacts were identified.

Thunderbolt Energy Hub (Umwelt 2022)

In 2022, Umwelt undertook an Aboriginal heritage assessment of approximately 568 ha for the proposed Thunderbolt Energy Hub, located southeast of Armidale. Seven Aboriginal sites (comprising three artefact scatters and four isolated artefacts) were recorded during the field survey. All sites are in proximity to a named creek or an associated tributary. Nine potential Aboriginal sites (four scarred trees and five stone arrangements) were identified by the RAPs. However, they did not meet the archaeological criteria necessary, or exhibit characteristics that would warrant recording of the sites on AHIMS.

The results of the survey conformed to their predictive model that stone artefact sites would be the most commonly recorded site type. Umwelt (2022) found that most landforms do not provide direct access to water sources, have slope inclination that is not conducive to occupation activities, are extremely rocky with limited depth of topsoil, or have been subject to disturbance. Because of this, most of the 2022 study area was assessed as having low archaeological potential.

Armidale BESS (OzArk 2024)

In 2021, OzArk completed a survey for the Armidale BESS, located 5 km east of Armidale and 15 km southeast of the development footprint. The land within the assessed area was similar to that within the current development footprint as it consisted of cleared, grazing pastures which had been subject to long-term agricultural disturbances. No Aboriginal sites were recorded, this was considered consistent with the predictive model and was attributed to distance to permanent water, low ground surface visibility and previous levels of disturbance.

5.4 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.

5.4.1 Site types in the region of the development footprint

The site types listed in **Table 5-4** are present in the region of the development footprint. The likelihood of these sites being present in the development footprint is discussed in **Section 5.4.3**.

Table 5-4: Site types recorded in the region of the development footprint.

Site type	Site description
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 subsurface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
Open artefact scatters	Artefact scatters are 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 a 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.
Culturally modified trees	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.
Quarry 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.
Burials	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 also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.
Bora/Ceremonial sites	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.

5.4.2 Landform modelling of archaeological potential

The large number of archaeological studies undertaken within the vicinity of the development footprint provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area. The typical pattern observed across the New England Tablelands is that the most obvious indicator of potential sites is the presence of workable stone

material near a natural fresh water source. The upland areas were usually associated with seasonal occupation, as the climate and resources did not tend to be ideal throughout the year.

Utilising data that has been collected both regionally and locally from previous studies in the district, broad statements about archaeological sites that have the potential to occur within the development footprint can be made. These are as follows:

- Aboriginal sites appear to be most prominent on crest landforms. Sites are relatively common on slope landforms where there is the presence of outcropping bedrock, particularly silcrete bedrock (EMM 2018). Other sites on slopes occur within a secondary context
- Occupation sites are across lower elevation landforms near water or on nearby gentle slopes (NGH 2020). All orders of watercourses have a higher potential to record archaeological sites.
- Sites located on slopes were usually in secondary contexts, as erosional processes disturbed the primary contexts. Exceptions were noted in areas with outcropping rock, as this feature may have supported occupation or use.
- The predominant site type is stone artefact sites such as artefact scatters and isolated finds, followed closely by modified trees. Other commonly recorded site types in the region include grinding grooves, stone quarries, and ceremonial (Bora) rings.
- The predominant material utilised for artefact manufacture is silcrete (Burke et al 2000, EMM 2018 and NGH 2020). A relatively large number of artefacts in the region are also manufactured from chert, and there is the potential for artefact manufactured from volcanics to be present.

A consideration of the landforms within the development footprint enables a prediction regarding the type and distribution of sites to be made (see **Section 4.1.1** for details of landforms within the development footprint). Most landforms within the development footprint comprise low gradient/undulating landforms, crests and slopes with a gradient greater than 5 degrees. Previous studies in the district (EMM 2018) indicate that moderately sloping landforms are not likely to contain intact sites and any finds in this environment would be in a secondary context because of erosion. Rather, sites are expected along crests within reasonable proximity to a water source (EMM 2018). The results of the nearby assessment completed by NGH (2020) indicates that occupation sites are most likely to be recorded on landforms adjacent to Duval Creek and its tributaries.

Crucial for the preservation of archaeological deposits is the history of past land use in an area. For example, some site types are directly removed by land clearing, usually scarred trees or stone arrangements. The extensive land clearing that has occurred across the development footprint therefore diminishes the likelihood of these site types being present. The development footprint and surrounding land is primarily used for agricultural practices, predominately grazing and cultivation. The presence of hooved livestock is likely to have resulted in trampling and compaction

of the ground surface which accelerates soil loss. As indicated by the results of subsurface excavations completed by NGH (2020) across similar landforms immediately north of the development footprint.

5.4.3 Conclusion

Based on knowledge of the environmental contexts of the development footprint and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of landforms within the development footprint to contain Aboriginal objects (**Table 5-5**), and what types of sites may be present within the development footprint (**Table 5-6**).

Table 5-5: Likelihood of landforms within the development footprint to contain Aboriginal objects.

Survey Unit	Landform type	Likelihood to contain Aboriginal objects
1	Alluvial flats	Alluvial flats are an aggrading environment that are impacted by flooding and channel migration. However, they can offer good preservation conditions for sites if relatively undisturbed. Disturbances at the development footprint suggest that archaeological deposits and any objects in this landscape are likely to be in a secondary context.
2	Gentle slopes	Gently inclined slopes are generally hospitable landforms; however, their archaeological potential often relies on proximity to reliable waterways. As Duval Creek, a perennial watercourse intersects the development footprint, occupation sites are considered most likely to be present across gentle slopes adjacent to the creek line across this landform unit.
3	Moderate slopes	Slopes with higher inclines are generally unsuitable for occupation and Aboriginal objects recorded in such landforms are likely to be in a secondary context as result of natural or artificial disturbances. The exception is in localised flat benches, where occupation may have been possible.
4	Crests	Archaeological studies in the region indicate that crest landforms with proximity to water were often favoured occupation locations. However, due to tree clearance and long-term grazing in the development footprint, soils in these landforms tend to be thin and degrading. Should Aboriginal objects be recorded in these landforms, they are likely to be surface manifestations and likely displaced from their primary depositional context.

Table 5-6: Likelihood of certain site types being present in the development footprint.

Site type	Likelihood of being present in the development footprint
Isolated finds	As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the development footprint.
Open artefact scatters	Artefact scatters of differing densities are the most common site type within the surrounding region and there is a general correlation between landform type and the nature of the evidence of past Aboriginal occupation. The higher density artefact scatters are situated on elevated landforms adjacent to waterways. The moderately sloped landforms across the development footprint are unlikely to have been used as occupational locations, while the crest is more likely to have been used as a travel routes or resource gathering area rather than for occupation. The gently sloping landforms adjacent to Duval Creek are the most likely landform in the development footprint to contain evidence of occupation sites (i.e. artefact scatters).
Culturally modified trees	Due to the near-total clearance of trees from within the development footprint, this site type is predicted to be very rare. It is also noted that this site type is recorded in relatively low frequencies across the region, and that the 2023 survey did not identify any modified trees.
Quarry sites	Geological mapping indicates that raw materials suitable for stone tool manufacturing may be present across the landforms in the development footprint however, no suitable rock outcroppings with evidence of quarrying were observed within the development footprint during the 2023 survey.
Burials	Although it is possible that this site type could be found within the development footprint, it is considered a rare site type especially given the disturbance that has occurred within the development footprint.
Bora/Ceremonial sites	Studies have emphasised that the New England Tablelands have a high number of ceremonial sites (EEM 2018). The distribution of ceremonial sites and Bora grounds across the landscape is

Site type	Likelihood of being present in the development footprint
	somewhat unpredictable as the choice of their location appears to be based on spiritual reasons rather than simply landscape features and resources. These sites are generally identified through consultation with the RAPs as they are often associated with intangible values.

5.5 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the development footprint. These research questions include:

- What resources were available to the Aboriginal people using the land within the development footprint (food, stone, and water) and what resources were transported to the area?
- What tasks were Aboriginal people undertaking at the sites?
- Do the findings within the development footprint (if any) accord with the regional archaeological context examined in **Section 5.2**?
- Do the survey results support the predictive model set out in **Section 5.4**?

6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

6.1 SAMPLING STRATEGY AND FIELD METHODS

The archaeological methods utilised in the Aboriginal archaeological assessment follows the Code of Practice (DECCW 2010b). Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

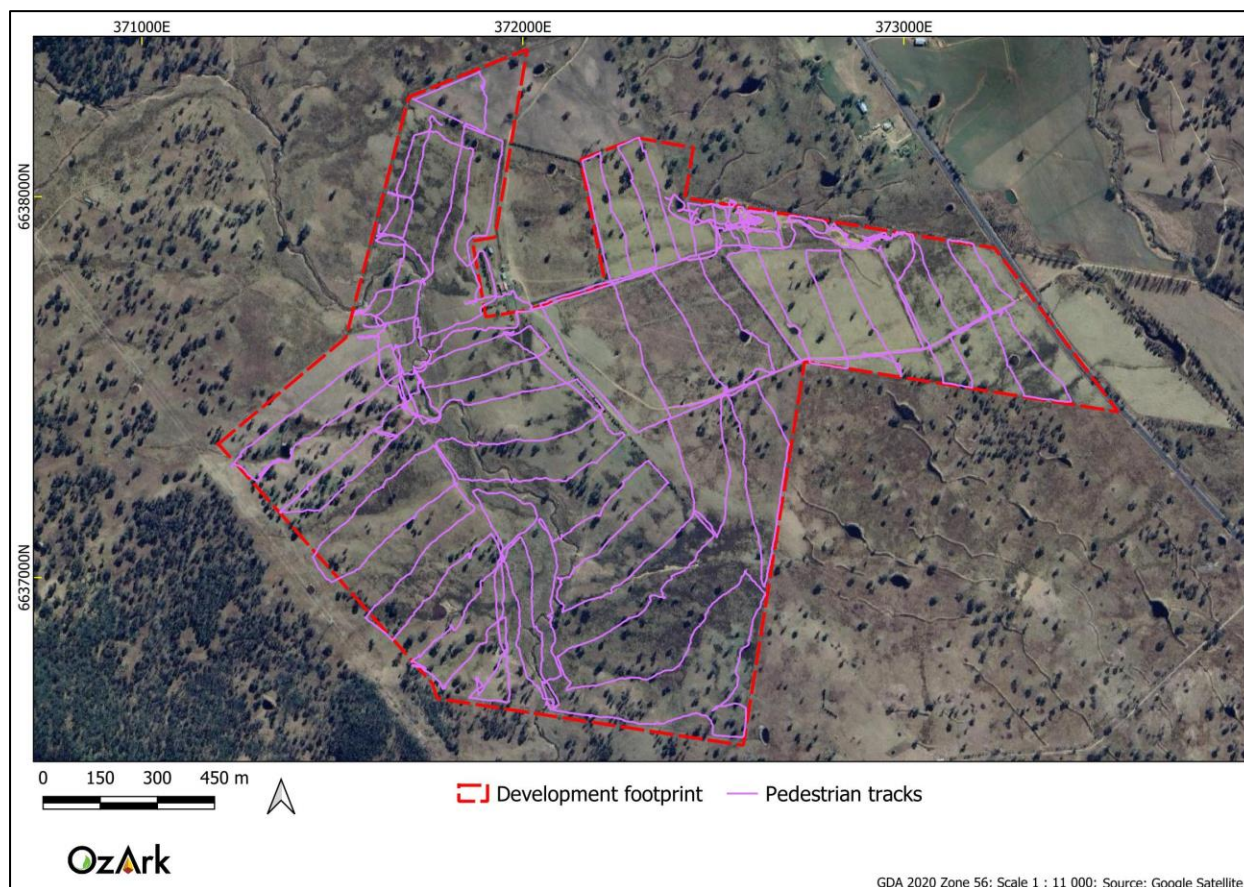
It should be noted that the aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within the development footprint are known. Therefore, the aims of the survey were to:

- Conduct pedestrian transects across all landforms in the development footprint so that their archaeological potential could be determined
- Evaluate whether the predictive model set out in **Section 5.4** is valid and answer the research questions in **Section 5.5**
- Determine if any portions of the development footprint require test excavation to understand the archaeological potential at a particular location.

The initial field assessment consisted of a full pedestrian survey across the entirety of the development footprint. Systematic transects were walked with surveyors spaced approximately 20 m apart (**Figure 6-1**). Spacing decreased in areas of exposure and sensitive landforms.

The additional field assessment involved a targeted inspection concentrated on the recorded PADs and specifically on the re-evaluation of their previously delineated extents.

Pedestrian tracks from each assessment were recorded via non-differential GPS and are shown on **Figure 6-1**. This figure only illustrates the tracks of one surveyor, and with four surveyors, the actual survey coverage was greater.

Figure 6-1: Survey coverage across the development footprint.

6.2 PROJECT CONSTRAINTS

All portions of the development footprint were accessible during the surveys. The primary constraint encountered was the low levels of exposure and visibility throughout large portions of the development footprint as discussed further in **Section 6.3**.

6.3 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 6-1 calculates the effective survey coverage within the development footprint. In general, **Table 6-1** 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 the gently sloping landforms of the development footprint approximately 5% of the ground surface could be seen. Exposures in these landforms were generally confined to highly disturbed areas including access tracks, dam walls, stock tracks and eroded landforms. The amount of visible ground was limited in all survey units and relied on natural and artificial disturbances to afford higher GSV levels. In exposures, GSV was substantially increased.

Representative examples of GSE and GSV across the survey units are shown in **Figure 6-2**.

Table 6-1: Effective survey coverage within the development footprint.

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m)	Effective Coverage %
1	Alluvial flats	148,625	50%	20%	14,862.5	10%
2	Gentle slopes	1,451,951	50%	10%	72,597.5	5%
3	Moderate slopes	152,121	40%	10%	6,084	4%
4	Crest	152,677	60%	15%	13,740	9%

Table 6-2 demonstrates that the survey efficacy was low throughout the development footprint was overall low. While recorded sites were predominantly recorded in the gently sloping landform, the majority of artefacts across this landform were identified along the drainages associated with Tilbuster Ponds rather than along Duval Creek. This result most likely to be a result of greater areas of exposure along these drainages due to erosion.

To offset the lack of exposure and GSV, the assessment relied on high pedestrian transect coverage and an examination of the archaeological potential of the landforms present. High pedestrian transect cover allowed for identification of the limited areas of exposure to be targeted. Examination of the moderate slopes, crests and alluvial flat landforms concluded that they have low archaeological potential. The higher potential landforms were identified across the gentle slopes in areas near Duval Creek, resulting in four PADs being identified in this survey unit (**Figure 6-3**). The assessment concluded that the low survey efficacy did not prevent the archaeological potential of the landforms to be understood.

Table 6-2: Effective survey coverage and incidences of site recording.

Landform	Landform area (sq m)	Area Effectively Surveyed	% of Landform Effectively Surveyed	Number of Sites	Number of Artefacts or Features
Alluvial flats	148,625	14,862.5	10%	0	0
Gentle slopes	1,451,951	72,597.5	5%	6 (including PADs)	33
Moderate slopes	152,121	6,084	4%	1	1
Crest	152,677	13,740	9%	0	0

Figure 6-2: Representative examples of GSE and GSV across the survey units.

	
1. Example of low levels of exposure across the gentle slopes in the eastern portion of the development footprint.	2. Example of low levels of exposure across the gentle slopes in the northern portion of the development footprint.
	
3. Example of exposure along Duval Creek.	4. Example of GSE associated with drainage erosion.



5. View across the crest landform in the central portion of the development footprint.



6. View downslope along a moderate slope overlooking the alluvial flats of Duval Creek.

Figure 6-3: Recorded Aboriginal sites and PADs in relation to the survey units.

This figure has been redacted

6.4 ABORIGINAL HERITAGE SITES RECORDED

Three previously unrecorded Aboriginal sites were identified during the 2023 survey including two isolated finds and one artefact scatter with PAD. **Table 6-3** summarises the main features of the three recorded sites and **Figure 6-4** shows the sites and PADs in relation to the development footprint.

Four areas of PAD were also identified during the initial survey, these are presented in **Section 6.5**.

Table 6-3: Aboriginal cultural heritage sites recorded during the survey.

AHIMS ID	Site name	Site type	Coordinates (GDA Zone 55) East	Coordinates (GDA Zone 55) North	Survey Unit
21-1-0574	Stage 2 Tilbuster OS1	Artefact scatter with PAD			1
21-1-0575	Stage 2 Tilbuster IF1	Isolated find			1
20-3-0094	Stage 2 Tilbuster IF2	Isolated find			1

Figure 6-4: Location of the recorded Aboriginal sites and PADs.

This figure has been redacted

Stage 2 Tilbuster OS1

Site Type: Artefact scatter with PAD

GPS coordinates: [REDACTED]

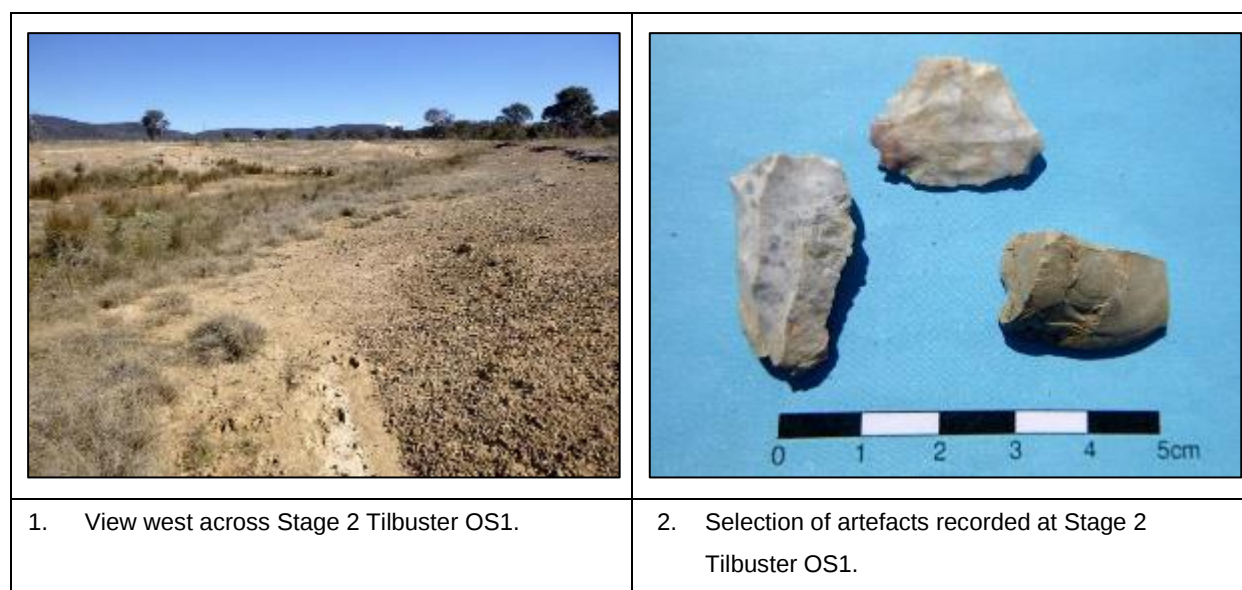
Location of Site: The site extends along ephemeral drainages which flow into Tilbuster Ponds, located outside the development footprint. [REDACTED]

[REDACTED] (Figure 6-4).

Description of Site: The site is an artefact scatter containing 32 stone artefacts, including three cores, 22 flakes, three flaked pieces and four stone shatter pieces (Figure 6-5 and Table 6-4). The artefacts are manufactured from a range of raw materials, silcrete is most common but quartz, quartzite, greywacke, and chert are also present. Artefacts were found on the eroded banks of the drainages. The land has largely been cleared for grazing; however, some low vegetation is present including scattered trees, shrubs and dense grass. Disturbances include the construction of a dam and gully erosion.

Subsurface archaeological deposits are considered in parts of the site which have not been impacted by gully erosion or construction of the dam.

Figure 6-5: View of Stage 2 Tilbuster OS1 and sample of artefacts recorded.





3. Example of a silcrete flake recorded at Stage 2
Tilbuster OS1.

Table 6-4: Recorded artefact attributes.

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm)
1	Flake	Silcrete	Distal Fragment	Tertiary	21*20*4
2	Flake	Quartz	Distal Fragment	Tertiary	13*10*4
3	Flake	Other	Distal Fragment	Tertiary	13*13*3
4	Flake	Chert	Proximal Fragment	Tertiary	30*22*12
5	Flake	Silcrete	Proximal Fragment	Tertiary	17*11*4
6	Flaked Piece	Silcrete	Distal Fragment	Tertiary	26*16*7
7	Flake	Silcrete	Complete	Tertiary	23*16*5
8	Flake	Quartz	Complete	Tertiary	36*25*11
9	Flake	Greywacke	Proximal Fragment	Tertiary	25*13*9
10	Flaked Piece	Quartzite	Distal Fragment	Secondary	43*29*15
11	Flake	Greywacke	Distal Fragment	Tertiary	37*30*11
12	Flake	Quartzite	Complete	Tertiary	46*36*20
13	Flake	Silcrete	Complete	Tertiary	37*17*8
14	Flake	Greywacke	Complete	Primary	53*44*17
15	Core	Chert	N/A	Tertiary	23*20*13
16	Flake	Quartzite	Complete	Tertiary	62*38*17
17	Flake	Greywacke	Complete	Tertiary	45*30*12
18	Shatter	Quartz	N/A	Tertiary	33*28*17
19	Flake	Quartz	Distal Fragment	Tertiary	23*13*9
20	Flake	Silcrete	Longitudinal Break	Tertiary	40*35*11
21	Shatter	Silcrete	N/A	Tertiary	18*18*12
22	Flake	Quartzite	Proximal Fragment	Tertiary	38*32*13
23	Core	Quartz	N/A	Tertiary	40*32*30
24	Flake	Silcrete	Distal Fragment	Tertiary	8*7*3
25	Shatter	Quartz	N/A	Tertiary	27*25*11
26	Core	Quartzite	N/A		120*90*80
27	Flake	Silcrete	Proximal Fragment	Tertiary	16*9*5
28	Flake	Quartz	Distal Fragment	Tertiary	22*17*10
29	Flake	Silcrete	Complete	Tertiary	29*12*12
30	Flake	Silcrete	Distal Fragment	Tertiary	41*22*13
31	Shatter	Quartz	N/A	Tertiary	31*15*12
32	Flaked Piece	Silcrete	Distal Fragment	Tertiary	32*23*18

Stage 2 Tilbuster IF1

Site type: Isolated find

GPS coordinates: [REDACTED]

Location of site: The site is on a gently sloping landform under a cluster of trees adjacent to a transmission easement. [REDACTED]

[REDACTED] (Figure 6-4).

Description of site: The site consists of a single stone artefact manufactured from silcrete recorded on a gently sloping landform (Figure 6-6). No other raw materials suitable for stone tool manufacture were observed at the site or its surroundings. The surrounding vegetation was comprised of grasses, shrubs and weeds, all of which contributed to a relatively low GSV of approximately 15%. Disturbances include historical vegetation clearance, grazing and erosion. It is unlikely that the site contains subsurface archaeological deposits due to the disturbed context in which the site is recorded.

Figure 6-6: Stage 2 Tilbuster IF1. View of site and recorded artefact.



Stage 2 Tilbuster IF2

Site Type: Isolated find

GPS coordinates: [REDACTED]

Location of Site: The site is in a small rocky outcrop in a grazing pasture. [REDACTED]

(Figure 6-4).

Description of Site: The site consists of a volcanic ground-edge adze blade situated amongst a rocky outcrop (Figure 6-7). The landform is a moderate slope which recedes eastward towards

Duval Creek located 155 m away. The outcrop was of coarse, chunky conglomerate rock, no other raw materials suitable for stone tool manufacture were observed at or near the site. The surrounding vegetation was comprised of scattered shrubs, grasses, and weeds, all of which contributed to a low GSV of <5%. Land disturbances include tree clearance and grazing. The potential for subsurface deposits at the site was assessed as low due to the disturbed context of its surroundings.

Figure 6-7: Stage 2 Tilbuster IF2. View of site and recorded artefact.



6.5 PAD AREAS RECORDED

Five areas of PAD were identified within the development footprint, including the PAD associated with registered site Stage 2 Tilbuster OS1. The location of each PAD area is shown on **Figure 6-4** and **Table 6-5** presents the details of the recorded PAD sites.

Table 6-5: PAD details.

Site Name	Eastings Northings (GDA Zone 56)	Site extent (m x m)	Site Description	Location Photo
Tilbuster Stage 2 PAD 1	■■■■■ ■■■■■	190 x 37	PAD 1 comprises a gentle upper slope in the north which recedes southerly into a slight flat bench overlooking Duval Creek. The PAD is situated on the northern banks of Duval Creek. The western extent is defined by the development footprint boundary, although it is assumed the extent would continue to west, however the landform could not be surveyed. The upper slope in the north of the PAD has notably been included due to the landform's relationship with the nearby AHIMS site 21-1-0353, located 45 m west of the PAD, outside of the development footprint. The slight bench was assessed to have subsurface archaeological potential as it is an optimal occupation area, containing flatter land, at higher ground overlooking a perennial waterway, and is within 200 m of two previously recorded AHIMS sites (21-1-0353 and 21-1-0354). The 2024 fieldwork confirmed the PAD assessment and extent.	 View north to PAD 1 gentle upper slope (2023 image).  View south across PAD1 (2023 image).

Site Name	Eastings Northings (GDA Zone 56)	Site extent (m x m)	Site Description	Location Photo
Tilbuster Stage 2 PAD 2	■■■■■ ■■■■■	160 x 90	PAD 2 is assessed as PAD as it is a wide, flat bench situated to the south and west of a bend in Duval Creek. The landform sits at a higher elevation than the lower lying floodplains closer to the creek line, providing a better drained, more suitable location for occupation. GSV was extremely low, and it was evident that the land had been disturbed by grazing and cultivations. However, it was determined that there is high potential for subsurface archaeological deposits to be present below the plough zone. The 2024 fieldwork confirmed the PAD assessment and extent.	 View southwest across the flat landforms contained in PAD 2 (2024 image).
Tilbuster Stage 2 PAD 3	■■■■■ ■■■■■	60 x 65	PAD three is located at an archaeologically sensitive landform as it is near the confluence of Duval Creek and an established tributary. The PAD is on the western bank of Duval Creek on elevated ground slightly higher than the creek's eastern floodplain. The ground was observed to be better drained and generally flat across the demarcated PAD area. Despite some visibility being available, no artefacts were identified on the surface. This is likely due to the evident grazing and ploughing disturbance, however, it was determined that there is high potential for archaeological deposits to be present below the plough zone. The 2024 fieldwork confirmed the PAD assessment and extent.	 View east across PAD 3, Duval Creek runs at the base of the rise visible in the background (2023 image).

Site Name	Eastings Northings (GDA Zone 56)	Site extent (m x m)	Site Description	Location Photo
Tilbuster Stage 2 PAD 4	■■■■■ ■■■■■	150 x 150	PAD 4 is situated on an elevated rise overlooking Duval Creek to the north and east. The crest is localised and has a rough diameter of 150 m around. Grasses were very dense which severely limited GSV, however, the potential for subsurface archaeological material to be present was assessed as high. It is noted that the attending RAP representatives considered the area to be a likely habitation location. The 2024 field assessment could not access PAD 4 due to the accessibility constraints brought on by wet weather on the day. The assessment maintains the original extent.	 View northwest over PAD 4 (2023 image)
Stage 2 Tilbuster OS1 with PAD	■■■■■	550 x 100	This PAD is associated with a low-density artefact scatter located on the eroded banks of an unnamed, ephemeral creek line (see Figure 6-5). The surrounding land has been disturbed by vegetation clearing and subsequent grazing and cultivation. However, the potential for subsurface archaeological deposit was assessed to be high, extending up to 40 m back over the flat bench which adjoins the southern and western banks. The 2024 fieldwork confirmed the PAD assessment and extent.	 View east overlooking the PAD area at the western end of the site (2024 image).

6.6 SUMMARY OF SURVEY RESULTS

The initial survey resulted in the identification of three previously unrecorded Aboriginal sites and identified four areas of high archaeological sensitivity, though no artefacts were observed at any of these four locations. The recorded Aboriginal sites comprised one low density artefact scatter and two isolated finds.

The second field deployment concentrated on the thorough inspection of the deemed PAD areas. No changes to the previously delineated extent of the PADs were deemed necessary.

6.6.1 Need for test excavation

Five areas of PAD were identified across the development footprint, four of these are not associated with surface manifestations.

The proponent has taken into consideration the location of the recorded PADs when developing the layout of the proposal (see **Section 8.1.2**). As a result of this, none of the PADs will be impacted by the proposal and as such, test excavation is not required.

6.6.2 Discussion

The review of the landscape and archaeological contexts presented in **Section 5** area enabled a predictive model for site location to be devised specific to the development footprint. This model indicated that there was a moderate to high potential to encounter occupation within favourable landforms (i.e. flat or gently sloping) that were close to water. Sites were also considered possible to be identified across the crest landforms. Sites considered most likely to be identified included artefact scatters and isolated finds, with lower potential for scarred trees, and quarries.

The results of the survey were largely consistent with the predictions made in the predictive model. All recorded sites were either an artefact scatter or isolated finds. Isolated finds were considered possible across all landforms, and the recorded finds were identified in the gentle and moderate slopes, relatively distant from water. The artefact scatter (Stage 2 Tilbuster OS1) was identified across the gently sloping landforms as predicted however the predictive model did indicate that such sites were more likely to be identified across landforms adjacent to Duval Creek while Stage 2 Tilbuster OS1 was identified along a drainage of Tilbuster Ponds. This result is considered most likely attributed to a lack of exposure and GSV along Duval Creek when compared to the drainages in which Stage 2 Tilbuster OS1 was identified, and areas of waterlogging identified in areas along the alluvial flat adjacent to Duval Creek.

As noted above, it was unexpected that no Aboriginal sites would be identified along Duval Creek, especially given that a considerable length of the watercourse is present in the development footprint. It is possible that this is due to poorly draining nature of the soils, which were noted to be severely waterlogged during both surveys, which may suggest that preferred landforms for

occupation were sought further back from the immediate creek bank on slightly higher ground. This explanation is supported by the distribution of recorded Aboriginal sites across the project area, in which 19 Aboriginal sites were recorded within 200 m of Duval Creek, along a slightly longer portion of the creek, where the elevation ranges from 1060 m to 1080 m asl, in contrast to lower lying section of the creek which runs through the development footprint at 1050 m asl.

As mentioned in **Section 6.3**, to offset the overall lack of exposure and GSV across the development footprint the assessment relied on high pedestrian transect coverage and an examination of the archaeological potential of the landforms present. This resulted in areas of PAD being identified along Duval Creek (see **Section 6.5**). These areas of PAD delineated are consistent with landforms identified by NGH (2020) and confirmed as having subsurface deposits during their investigations for the project. It should be noted however that those subsurface investigations completed across these landforms identified a general low-density of subsurface deposits and as such, a similar result would be expected across the areas of PAD if they were to be excavated.

The artefact types and materials recorded were also consistent with the results of previous studies in the local and regional area. Unmodified silcrete flakes were the dominant artefacts recorded, with lower frequencies of quartz, quartzite, chert, greywhacke and volcanic. The adze recorded at Stage 2 Tilbuster IF2 was considered be a notable finding of the survey. Of particular interest were the artefact's location details, the adze was observed secured between large rocks, somewhat protected within a rocky outcrop (**Figure 6-7**). The size of the outcrop suggests the artefact's location is unlikely to have been disturbed by the usual agricultural activities (ploughing, grazing, vehicle tracks etc). Considering the size and weight of the object, as well as its position within the outcrop, it seems unlikely that the artefact was secondarily deposited by natural forces, such as sheet wash or erosion. It is considered possible that the adze was intentionally stowed by an Aboriginal person in the past and likely remains in its primary context.

6.6.3 Responses to the research questions

In **Section 5.5** several research questions were advanced to guide the survey of the development footprint. Following the survey, responses to these research questions are set out below.

- What resources were available to the Aboriginal people using the land within the development footprint (food, stone, and water) and what resources were transported to the area?
 - No specific food resource locations were noted, and reliable water resources were limited to Duval Creek. At the time of the 2023 survey, the water level was low while the creek was full during the 2024 survey. No suitable outcropping rock materials were identified within the development footprint. The only rock outcrops observed consisted of coarse, conglomerate rock. Therefore, the implication is that all the raw material used in the manufacturing of the artefacts within the development footprint were transported into the area.

- What tasks were Aboriginal people undertaking at the sites?
 - The low number and low density of sites recorded across the development footprint indicate that the landforms present were less preferred for occupation in comparison to local areas of higher ground situated to the northwest. The presence of a low-density artefact scatter and two isolated finds suggest that past Aboriginal activity would have been limited to short-term or one-off occupational patterns and are likely associated with transitory activities like hunting or travel.
- Do the findings within the development footprint (if any) accord with the regional archaeological context examined in **Section 5.2?**
 - The findings within the development footprint conform with the regional archaeological context. All three recorded Aboriginal sites in the development footprint are low-density stone artefacts sites which are the most commonly recorded site type across the region.

7 SIGNIFICANCE ASSESSMENT

7.1 INTRODUCTION TO SIGNIFICANCE ASSESSMENT

7.1.1 Identifying cultural significance

The concept of cultural significance is used in Australian heritage practice and legislation to encompass all the cultural values and meanings that might be recognised in a place. The *Burra Charter*'s definition of cultural significance is broad and encompasses places that are significant to Indigenous cultures.

The *Burra Charter* definition of 'place' is also broad and encompasses Indigenous places of cultural significance. 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all these things or may embody all these values at the same time.

In some cases, the find-spot of a single artefact may constitute a 'place'. Equally, a suite of related locations may together comprise a single 'place', such as the many individual elements that make up a Songline. These more complex places are sometimes called a cultural landscape or cultural route.

The Guide notes that cultural significance is comprised of an assessment of social values, scientific values, aesthetic values, and historic values. These values are described below.

7.1.1.1 *Social or cultural value*

Social or cultural value refers to the spiritual, traditional, historical, or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them (Articles 1.1, 1.2, 1.12, 5, and 8–11: *Burra Charter*).

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always consensus about a place's social or cultural value. Because people experience places and events differently, expressions of social or cultural value do vary and, in some instances, will be in direct conflict. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural value can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival

documentation, and specific information provided by Aboriginal people specifically for the investigation.

Cultural value involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

7.1.1.2 *Scientific (archaeological) value*

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Articles 1.2, 5, and 8: Burra Charter).

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether a site can contribute to current research also involves defining 'research potential'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to Heritage NSW's Code of Practice.

Often scientific values are informed by social values that allow a contemporary understanding of the archaeological data to be understood.

7.1.1.3 *Aesthetic value*

This refers to the sensory, scenic, architectural, and creative aspects of the place (Articles 1.12 and 8: Burra Charter). It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

7.1.1.4 *Historic value*

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical

evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities (Articles 1.12–1.16: Burra Charter).

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain enough understanding of historic values.

7.2 ASSESSED SIGNIFICANCE OF THE RECORDED SITES

Table 7-1 presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

Social or Cultural Value

The social and cultural value of Aboriginal sites is generally determined through consultation with Aboriginal people. Generally, the Aboriginal community regard all sites as having high cultural significance. This is due to all sites, even displaced artefact sites, being able to provide a connection to their ancestors, as well as being a tangible reminder of the past Aboriginal occupation of the area.

No comments were received from the RAPs regarding the cultural values of the identified sites in the development footprint. As such, the sites have been assigned high cultural values.

Archaeological/Scientific Value

The artefact recorded at 21-1-0574 (Stage 2 Tilbuster IF1) is a piece of unmodified, silcrete shatter. The artefact has no diagnostic features that could otherwise establish further archaeological context, combined with its situation as an isolated find in the landscape, its research potential is reduced to a negligible level. Neither the site type, artefact type or raw material used are unique to the landscape and have been commonly recorded in the local area (NGH 2020).

Site 20-3-0094 (Stage 2 Tilbuster IF2) is likewise an isolated find, however, for several reasons, has an elevated archaeological / scientific significance. Primarily, this is due to the rare representation of the ground-edge adze in the archaeological record of New South Wales (McCarthy 1944). The value of the adze is further increased by the object's complete and good condition.

The scientific value of 21-1-0574 (Stage 2 Tilbuster OS1) (an artefact scatter with PAD) is provisionally assessed to be low to moderate due to the identified subsurface archaeological

potential. The scientific value is unknown until the landform is investigated through subsurface investigations. The results of the test excavations completed for the project on similar landforms indicate that any subsurface archaeological deposits, if present, are unlikely to be high density or high complexity (see **Section 5.3.2**). Nevertheless, the evident surface manifestation and observed potential for intact subsurface deposits demonstrates that the site has further research potential.

The archaeological significance of Tilbuster Stage 2 PAD 1 to 4 cannot be assessed as these are potential sites only. The significance of these PADs can only be determined through subsurface investigations.

Aesthetic Value

Site 21-1-0574 (Stage 2 Tilbuster OS1) and 21-1-0575 (Stage 2 Tilbuster IF1) are assessed as having low aesthetic value. Both sites do not manifest themselves obviously in the landscape and are difficult for the layperson to appreciate. Additionally, they are in a landscape that has been modified in modern times and the past aesthetic values associated with the landscape have been largely lost.

Site 20-3-0094 (Stage 2 Tilbuster IF2) is assessed as having low-moderate aesthetic value. The site is similarly not obviously expressed and occurs in a modified landscape. However, the condition, quality and function of the stone adze recorded at this site can be easily recognised and appreciated by the layperson.

Historic Value

The recorded sites do not have any association with historically important persons, places, or events. Therefore, the sites have no historic values.

Table 7-1: Aboriginal cultural heritage: significance assessment.

AHIMS ID	Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
21-1-0574	Stage 2 Tilbuster OS1	High	Low-moderate (provisional)	Low	None
21-1-0575	Stage 2 Tilbuster IF1	High	Low	Low	None
20-3-0094	Stage 2 Tilbuster IF2	High	Low-moderate	Low-moderate	None

7.2.1 Statement of significance

There may be places with intangible cultural significance within the development footprint, however no specific locations have so far been identified by the Aboriginal community. The more mountainous landforms to the west of the development footprint are known to contain women's sites based on information provided by two of the RAPs (see **Section 3.3**). No further information regarding these women's sites and their exact locations has been disclosed. Additionally, one

Aboriginal ceremony and dreaming site has been registered on AHIMS in the surrounding area, located 2.4 km southwest of the development footprint on Mount Duval (see **Figure 5-2**).

The scientific value of the Aboriginal sites identified across the development footprint are considered to have either low, or low to moderate significance and relatively potential to provide further information on the traditional Aboriginal use of the New England Tablelands. The identified PADs have increased research potential due to their location namely along Duval Creek which would have been a more optimal location for occupation. However, without subsurface investigation being completed, their potential remains unknown.

Apart from the general understanding of the aesthetic qualities of the project site, there are no known places with identified aesthetic values and the development footprint has no historic values.

8 ASSESSING HARM

8.1 AVOIDING AND MINIMISING HARM

8.1.1 Conserving significant Aboriginal cultural heritage

An object of the NPW Act is the '*conservation of objects places and features... of cultural value within the landscape, including... places, objects and features of significance to Aboriginal people*' (s.2A(1(b)(i))).

As heritage professionals, OzArk, strives for good conservation outcomes. In particular, OzArk is primarily concerned with the conservation and protection of Aboriginal cultural heritage that is of significance to Aboriginal people.

Two primary objectives when managing harm to an Aboriginal object are:

- Impacts to significant Aboriginal objects and places should always be avoided wherever possible
- Where impacts to Aboriginal objects and places cannot be avoided, proposals should be amended to reduce the extent and severity of impacts to significant Aboriginal objects and places using reasonable and feasible measures.

8.1.2 Opportunities to conserve Aboriginal cultural heritage values

The proponent has taken into consideration the location of the recorded Aboriginal sites and PADs when developing the footprint of the proposal. In doing so, the proponent has redesigned the proposal impacts to avoid harm to all recorded Aboriginal sites and areas of PAD across the development footprint. As such, all recorded Aboriginal sites and PADs will be conserved in the landscape.

8.2 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROJECT

As noted in **Section 8.1.2**, the proposal will avoid harm to all recorded Aboriginal sites and PADs across the proposal site (see **Figure 8-1**).

Table 8-1 presents a summary of potential impacts to Aboriginal cultural heritage associated with the proposal.

Table 8-1: Aboriginal cultural heritage: impact assessment.

AHIMS ID	Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
21-1-0574	Stage 2 Tilbuster IF1	None	None	None
21-1-0575	Stage 2 Tilbuster IF2	None	None	None
20-3-0094	Stage 2 Tilbuster OS1	None	None	None
N/A	Tilbuster Stage 2 PAD 1	None	None	None

AHIMS ID	Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
N/A	Tilbuster Stage 2 PAD 2	None	None	None
N/A	Tilbuster Stage 2 PAD 3	None	None	None
N/A	Tilbuster Stage 2 PAD 4	None	None	None

Figure 8-1: Conceptual layout of the proposal in relation to recorded Aboriginal sites and PADs.

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8.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

Ecologically sustainable development principles (ESD) (defined in s.6 of the *Protection of the Environment Administration Act 1991*) requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. Regarding Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

8.3.1 Intergenerational equity

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity, and productivity of the environment for the benefit of future generations.

In terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous permits), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.

Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of the project.

Where there is uncertainty, the precautionary principle should also be followed.

8.3.2 The precautionary principle

The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In relation to Aboriginal cultural heritage values, the precautionary principle should be applied if:

- The proposal involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places
- There is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

8.3.3 Principle of Integration

The Plan of Implementation of the World Summit on Sustainable Development held in Johannesburg, 2002, noted the need to “*promote the integration of the three components of sustainable development- economic development, social development and environmental protection- as interdependent and mutually reinforcing pillars*”.

The principle of integration ensures mutual respect and reciprocity between economic and environmental considerations:

- Environmental considerations are to be integrated into economic and other development plans, programs, and projects
- Development needs are to be considered in applying environmental objectives.

8.3.4 Applicability to the proposal

The loss of any Aboriginal cultural values, be they physical sites or intangible values, is to be avoided as much as is possible to ensure that the environmental impacts of a proposal are as acceptable as is possible.

The proposal's conceptual design has demonstrated its ability to ensure ground disturbing works will avoid the locations of all Aboriginal sites and PADs identified across the development footprint, as such, the proposal will not result in harm to Aboriginal cultural heritage values.

Table 8-2 examines the application of ESD principles to the proposal.

Table 8-2: Application of ESD principles to the proposal.

ESD principle	Response
Avoiding and minimising harm	Section 9 sets out mechanisms by which to avoid and minimise harm to the recorded Aboriginal sites and PADs identified across the development footprint during the construction and operation of the proposal.
The integration principle	The proposal presents a strong case for the broader environmental benefits arising from environmentally responsible development. The environmental consequences of the proposal have been carefully assessed in an EIS.
The precautionary principle	The Aboriginal cultural heritage investigation has followed the precautionary principle though undertaking a robust Aboriginal cultural heritage assessment, to ensure that harm to Aboriginal objects and values is minimised. The survey adopted a precautionary principle when it came to describing and assessing landforms within the development footprint.
The intergenerational equity principle	It is assessed that the proposal will not harm significant Aboriginal cultural heritage values. The Aboriginal cultural heritage assessment has identified the cultural heritage values within the development footprint so that there will be no diminution of intergenerational equity associated with the proposal. If the management measures set out in Section 9.2.1 are followed, the Aboriginal sites and PADs will be conserved in the landscape and the recorded artefacts will be available for future appreciation and education within the Aboriginal community.

9 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE SITES

9.1 GENERAL MANAGEMENT PRINCIPLES

Appropriate management of cultural heritage items is primarily determined based on their assessed significance as well as the likely impacts of the project. **Section 7.2** and **Section 8.2** describe, respectively, the significance / potential of the recorded sites and the likely impacts of the project. The following management options are general principles, in terms of best practice and desired outcomes, rather than mitigation measures against individual site disturbance.

- Avoid impact by altering the proposal to avoid impact to a recorded Aboriginal site. If this can be done, then a suitable curtilage around the site must be provided to ensure its protection both during the short-term construction phase of development and in the long-term use of the area. If plans are altered, care must be taken to ensure that impacts do not occur to areas not previously assessed.
- If impact is unavoidable then approval to disturb sites under the authority of an ACHMP must be sought from DPHI. Normally, the management recommendations contained in the ACHAR become policies of the ACHMP. As the Aboriginal community have been provided the opportunity to view the draft ACHAR, the ACHAR must make it clear that a future ACHMP will manage Aboriginal cultural heritage within the development footprint so that the Aboriginal community can assess the management recommendations with this knowledge. The ACHMP policies will often stipulate that the Aboriginal community should be involved with any salvage activities and will dictate what the fate of any salvaged Aboriginal objects will be.

9.2 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

Following approval of the proposal, an ACHMP will be developed, in consultation with the RAPs and Heritage NSW, to protect any Aboriginal cultural heritage values within the development footprint.

The ACHMP will include management measures to ensure the protection of the recorded Aboriginal sites and PADs (see **Section 9.2.1**). The ACHMP will also include an unanticipated finds protocol, unanticipated skeletal remains protocol (see **Section 9.2.2**) and procedures for cultural awareness training.

Construction on the proposal cannot commence until the ACHMP has been approved by DPHI.

9.2.1 Fencing and erosion control measures

Based on the conceptual layout of the proposal, Aboriginal sites 21-1-0575 (Stage 2 Tilbuster IF1) and 20-3-0094 (Stage 2 Tilbuster IF2) are located 45 m and 220 m, respectively, from the

nearest proposed impacts. As such, fencing of these sites is not required, however, the location of these sites should also be marked on all relevant plans for construction workers.

To ensure 21-1-0574 (Stage 2 Tilbuster OS1) and the areas of PAD are not inadvertently harmed during construction of the proposal, they should be temporarily demarcated with high visibility fencing prior to construction commencing. A minimum 2 m buffer around the delineated extent of 21-1-0574 (Stage 2 Tilbuster OS1) and the areas of PAD should be fenced. Due to 21-1-0574 (Stage 2 Tilbuster OS1), Tilbuster Stage 2 PAD 1 and Tilbuster Stage 2 PAD 2 being located along the boundary of the development footprint, the 2 m buffer would not need to extend outside the development footprint. The location of these recorded Aboriginal sites and PADs should also be marked on all relevant plans for construction workers.

Erosion control measures should be implemented near the PADs, if required, to ensure they are not indirectly impacted during the construction of the Project.

9.2.2 Protocols related to the discovery of unanticipated sites

9.2.2.1 *Skeletal remains protocol*

Protocols related to the discovery of suspected human skeletal material will follow Requirement 25 of the Code of Practice and be set out in the ACHMP, which would be developed in consultation with RAPs, Heritage NSW and DPHI.

The protocol should include:

1. Cordon off area with a minimum buffer of 10 m in all directions from the visible remains. Do not disturb any skeletal material that remains in place. If some skeletal remains have been removed from the ground, store these in a dry location on site. Do not remove any skeletal material or associated artefacts from site
2. If bones are suspected to be human, the site supervisor should immediately contact the nearest police station. Heritage NSW should also be contacted (02 9873 8500) to assist with the identification of the burial. Police will make an initial assessment to determine if the remains are part of crime scene or possible ancient Aboriginal remains. Such an assessment will usually involve sending photographs of the find to a physical anthropologist to determine the ethnic origin of the skeleton
3. If the skeletal material is determined to be ancestral Aboriginal remains, Heritage NSW would send a Compliance and Regulation Officer to the scene and then issue an Advisory Letter setting out the required process from that point
4. The proponent will notify the Aboriginal community of the find
5. The Aboriginal ancestral remains must be recorded under the direct supervision of a specialist anthropologist or other suitably qualified person
6. The location of the burial must be registered as an Aboriginal site on the AHIMS database

7. Work cannot recommence in the cordoned off area until authorised in writing by Heritage NSW.

9.2.2.2 *New Aboriginal sites within the approved development footprint*

The following procedure will be implemented for any newly identified Aboriginal objects within the approved development footprint in the ACHMP:

- The site will be temporarily fenced with an exclusion buffer of at least 10 m
- The site will be assessed by a qualified archaeologist and a RAP
- If found to be cultural, the site location will be registered with AHIMS
- Depending on the Aboriginal cultural heritage values at the site and the degree of immediate threat to the site, the site will be salvaged according to the appropriate management process in the ACHMP. Consideration should be made to avoid harm to newly identified sites assessed as having high significance
- A brief report of the salvage will be produced to record the findings
- On the completion of salvage at such sites, an Aboriginal site impact recording form (ASIRF) will be completed soon after completion of salvage fieldwork and certainly within four months. Copies of the forms will be archived
- All artefacts salvaged will be subject to the approved long-term management process set out in the ACHMP.

9.2.2.3 *New Aboriginal sites outside the approved development footprint*

Any new Aboriginal site identified outside the approved development footprint will be managed in accordance with the following procedure in the ACHMP:

- The site will be assessed by a qualified archaeologist and a RAP
- If found to be cultural, the site location will be registered with AHIMS, and a site card submitted
- The site will be considered for fencing depending on its proximity to the approved development footprint.

The site will not be able to be harmed without an AHIP or amendments to the ACHMP, if impact is required as part of an approved modification to SSD-69799460.

10 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.

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 an approved ACHMP
- The findings of the current investigations undertaken within the development footprint
- The interests of the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the development footprint are as follows:

1. Following development consent of the proposal, the proponent will develop an ACHMP in consultation with the RAPs and Heritage NSW (**Section 9.2**). The ACHMP will include management measures to ensure the protection of the recorded Aboriginal sites and PADs, an unanticipated finds protocol, unanticipated skeletal remains protocol, and procedures for cultural awareness training. Construction cannot commence until the ACHMP has been approved by DPHI.
2. The proponent has undertaken to avoid harm to all recorded Aboriginal sites and PADs. Site 21-1-0574 (Stage 2 Tilbuster OS1) and the areas of PAD should be protected during the construction of the proposal through temporary fencing (**Section 9.2.1**) and consideration should be given to retaining fencing during the operation of the proposal.
3. Erosion control measures should be implemented, if required, to ensure the PADs are not indirectly impacted during the construction of the proposal (**Section 9.2.1**).
4. Contractors should be made aware of the location of all recorded Aboriginal sites and PADs across the development footprint and the locations of these should be marked on all relevant plans for construction workers.
5. All land-disturbing activities must be confined to within the approved disturbance footprint. Should the parameters of the proposed work extend beyond this, then further archaeological assessment may be required.

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Umwelt 2022	Umwelt 2022. <i>Thunderbolt Energy Hub Stage 1: Aboriginal Cultural Heritage Assessment</i> . Prepared for Neoen.

APPENDIX 1: ABORIGINAL COMMUNITY CONSULTATION

Appendix 1 Table 1: Aboriginal consultation log.

Date	Organisation	Comment	Method
19.4.24	Armidale Express	Catherine Burrowes (CB) rang <i>Armidale Express</i> newspaper is printed on a Friday. The cut off is by midday Thursdays..... - will be published 19.4.24...Closing date 6.4.24.	Phone/email
19.4.24	Heritage NSW	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	Armidale LALC	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	Office of The Registrar, ALRA	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	National Native Title Tribunal	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	NTSCORP	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	Armidale Regional Council	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	Northern Tablelands Local Land Services	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 6.4.24.	Email
19.4.24	National Native Title Tribunal	CB received email stating no NNTT overlap	Email
24.4.24	Iwatta Aboriginal Corporation	CB received email registration for this project	Email
2.5.24	Iwatta Aboriginal Corporation	CB replied with thanks	Email
2.5.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB received email registration for this project	Email
2.5.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB replied with thanks	Email
6.5.24	Aaron Broad	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Armidale LALC	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	AT Gomilaroi Cultural Consultancy	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Brian Draper	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Colin Ahoy	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Culturally Aware	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	D F T V Enterprises	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Edgerton kwiembal AC	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Garby Elders	CB emailed Stage 1 community letter closing date 20.5.24	Email

Date	Organisation	Comment	Method
6.5.24	Gomeroi People (c/- NTSCORP Ltd)	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Gomery Cultural Consultants	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Guyra LALC	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Indigenous Outcomes	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Jeremy Duncan	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Larissa Ahoy	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Leonard Blair	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Maruung Baalijin	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Michael Long	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Mr Craig Archibald	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Muurrbay Bundani Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Nukara Indigenous Cultural & Heritage	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Nulla Nulla Boongutti Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Nunawanna Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Nyakka Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Steven Ahoy	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Thawan Heritage Consultant	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Thomas Dahlstrom	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Thunggutti Local Aboriginal Land Council	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Vicky Hannah Gomeroi Duncan	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Wailwan Aboriginal Group	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Wurrumay Pty Ltd	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	RAW Cultural Healing	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Dharramalin	CB emailed Stage 1 community letter closing date 20.5.24	Email

Date	Organisation	Comment	Method
6.5.24	Girragirra Murun Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Wingarra Wilay Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Long Gully Cultural Services	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Guthers Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Bill Trewlynn	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Nganyawana Cultural Consultants	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Dhanghu Barri	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Guda Birgingira Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Email
6.5.24	Anaiwan Traditional Owners Aboriginal Corporation	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Armidale Aboriginal Elders Congress	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Lorraine Towney	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Paul Moodie	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Ron Smith	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Ronald Long	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Roslyn & Scott Smith	CB emailed Stage 1 community letter closing date 20.5.24	Post
6.5.24	Culturally Aware	CB received email registration for this project	Email
6.5.24	Culturally Aware	CB replied with thanks	Email
6.5.24	Nunawanna Aboriginal Corporation	CB received email registration for this project	Email
6.5.24	Nunawanna Aboriginal Corporation	CB replied with thanks	Email
6.5.24	Long Gully Cultural Services	CB received email registration for this project	Email
6.5.24	Long Gully Cultural Services	CB replied with thanks	Email
6.5.24	Guda Birgingira Aboriginal Corporation	CB received email registration for this project	Email
6.5.24	Guda Birgingira Aboriginal Corporation	CB replied with thanks	Email
6.5.24	Jeremy Duncan	CB received email registration for this project	Email

Date	Organisation	Comment	Method
6.5.24	Jeremy Duncan	CB replied with thanks	Email
6.5.24	Wailwan Aboriginal Group	CB received email registration for this project	Email
6.5.24	Wailwan Aboriginal Group	CB replied with thanks	Email
9.5.24	Iwatta Aboriginal Corporation	CB received email registration for this project	Email
9.5.24	Iwatta Aboriginal Corporation	CB replied with thanks	Email
9.5.24	Anaiwan Traditional Owners Aboriginal Corporation	CB received email registration for this project	Email
9.5.24	Anaiwan Traditional Owners Aboriginal Corporation	CB replied with thanks	Email
9.5.24	Nyakka Aboriginal Corporation	CB received email registration for this project	Email
9.5.24	Nyakka Aboriginal Corporation	CB replied with thanks	Email
23.5.24	Armidale Aboriginal Elders Congress	Return to sender letter received	Post
3.6.24	Iwatta Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	email
3.6.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Culturally Aware	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Nunawanna Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Long Gully Cultural Services	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Guda Birgingira Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Jeremy Duncan	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Wailwan Aboriginal Group	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Anaiwan Traditional Owners Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Nyakka Aboriginal Corporation	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
3.6.24	Armidale LALC	CB emailed Stage 2/3 methodology - closing date 2.7.2024	Email
4.6.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB received email re methodology	Email
4.6.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB replied with thanks acknowledging correspondence	Email

Date	Organisation	Comment	Method
3.6.24	Long Gully Cultural Services	CB received email re methodology	Email
3.6.24	Long Gully Cultural Services	CB replied with thanks acknowledging correspondence	Email
4.7.24	Iwatta Aboriginal Corporation	CB received email regarding the project	Email
5.7.24	Iwatta Aboriginal Corporation	SR replied to email	Email
22.8.24	Iwatta Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Gumbaingarr Traditional Owners Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Culturally Aware	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Nunawanna Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Long Gully Cultural Services	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Guda Birgingira Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Jeremy Duncan	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Wailwan Aboriginal Group	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Anaiwan Traditional Owners Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Nyakka Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - Closing date 19.9.24	Email
22.8.24	Armidale LALC	CB posted Stage 4 draft ACHAR - Closing date 19.9.24	Post

Appendix 1 Figure 1: Stage 1 advertisement, *Armidale Express*.

**Expression of Interest
Cultural Heritage Management**

OzArk Environment & Heritage has been engaged by Enerpac Australia Pty Ltd (the proponent) to complete an Aboriginal cultural heritage assessment for Tilbuster Solar Farm Stage 2 within the Armidale local government area. The project will involve additional survey to further assess areas identified as having high archaeological potential, as well as to identify cultural values. The proposed solar farm may result in harm to Aboriginal cultural heritage.

OzArk is seeking persons or groups who wish to be consulted about the project and this consultation group will assist OzArk and the proponent in the preparation of an Aboriginal Cultural Heritage Assessment Report and to assist Heritage NSW and the Department of Planning, Housing and Infrastructure in their consideration and determination of the project.

If you hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places in the project area, please register your interest to be consulted.

Registrations can be made by post: OzArk PO Box 2069 Dubbo NSW 2830; email: catherine@ozarkehm.com.au or by phoning OzArk on 02 6882 0118. All submissions should be received no later than **Monday 6 May 2024**

Appendix 1 Figure 2: Stage 1 agency letter (sample).

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

19 April 2024

[REDACTED]

ABORIGINAL CULTURAL HERITAGE ASSESSMENT
"TILBUSTER STAGE 2"

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Enerpac Australia Pty Ltd (the proponent) to undertake Aboriginal community consultation as per the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

It is understood that the project will involve an additional survey to further assess areas identified as having high archaeological potential (**Figure 1**), as well as an assessment of cultural values. The solar farm proposal may ultimately result in harm to Aboriginal cultural heritage.

We are therefore seeking Expressions of Interest from relevant Aboriginal stakeholder groups and individuals in the area who hold cultural knowledge relevant to determining the significance of Aboriginal objects or places within the Armidale, ~~Tilbuster~~ Stage 2 study area.

This consultation group will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR) which will assist Heritage NSW and the Department of Planning, Housing and Infrastructure in their consideration and determination of the project.

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 / values for the above-mentioned project, please advise our office.

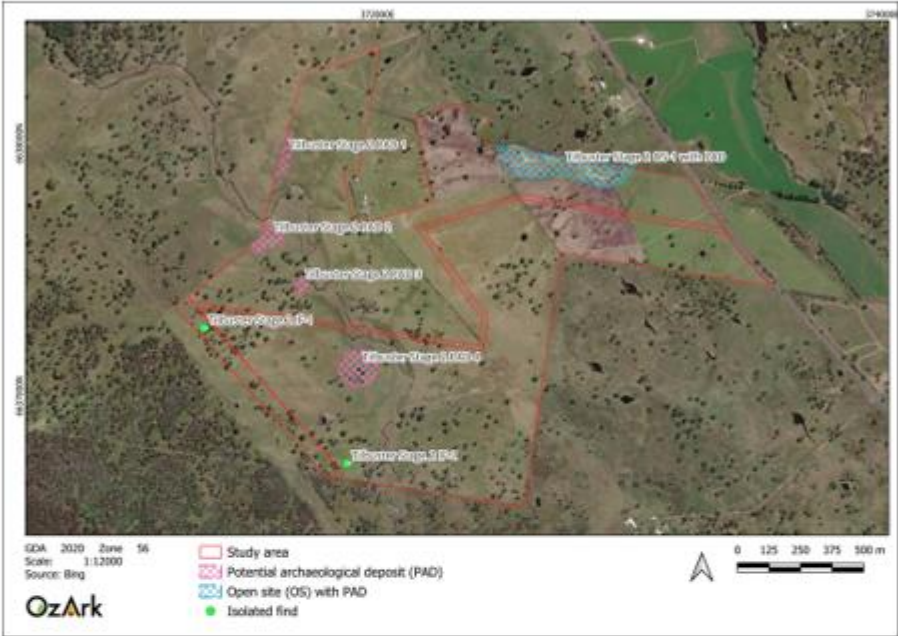
We would appreciate it if you could provide any feedback, by responding to this email catherine@ozarkehm.com.au, regarding these Aboriginal stakeholder groups by 6 May 2024, or sooner if possible.

Kind regards,



Catherine Burrows
Office Manager/ Community Liaison

Figure 1: Sites found during the initial survey.



Appendix 1 Figure 3: Stage 1 community letter (sample).

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

6 May 2024

[Redacted Address]

ABORIGINAL CULTURAL HERITAGE ASSESSMENT
"TILBUSTER STAGE 2"

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Enerpac Australia Pty Ltd (the proponent) to undertake Aboriginal community consultation as per the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

It is understood that the project will involve an additional survey to further assess areas identified as having high archaeological potential (**Figure 1**), as well as an assessment of cultural values. The solar farm proposal may ultimately result in harm to Aboriginal cultural heritage.

Accordingly, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the Armidale area, to form a consultation group. This consultation group will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR) to assist Heritage NSW and the Department of Planning, Housing and Infrastructure 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, should you wish to register for the project please provide the following information:

- Group or individual name
- Contact name (if registering as a group)
- Email or postal address
- Contact number

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.

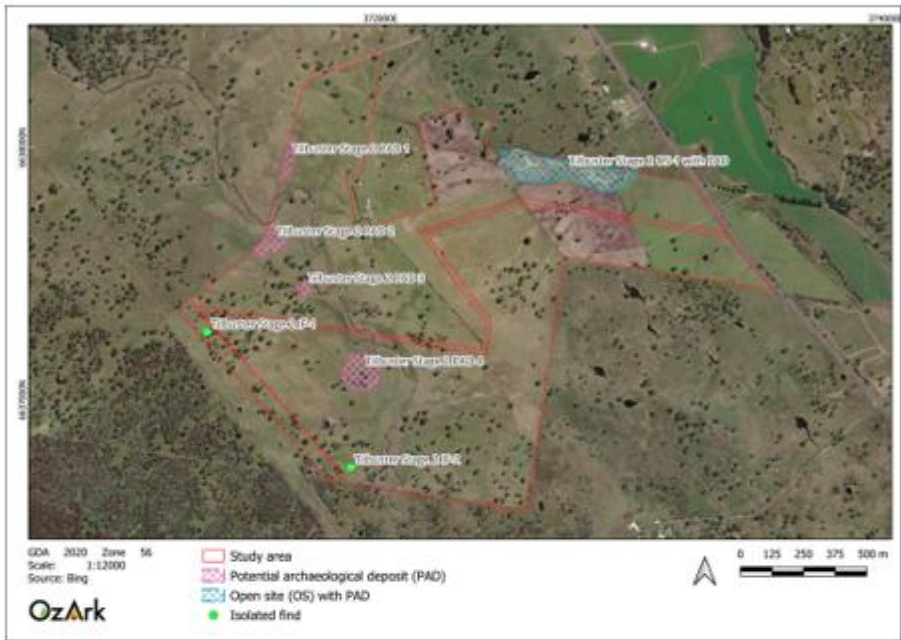
We would appreciate it if you could provide any feedback, by responding to this email catherine@ozarkehm.com.au, regarding these Aboriginal stakeholder groups by **20 May 2024**, or sooner if possible.

Kind regards,

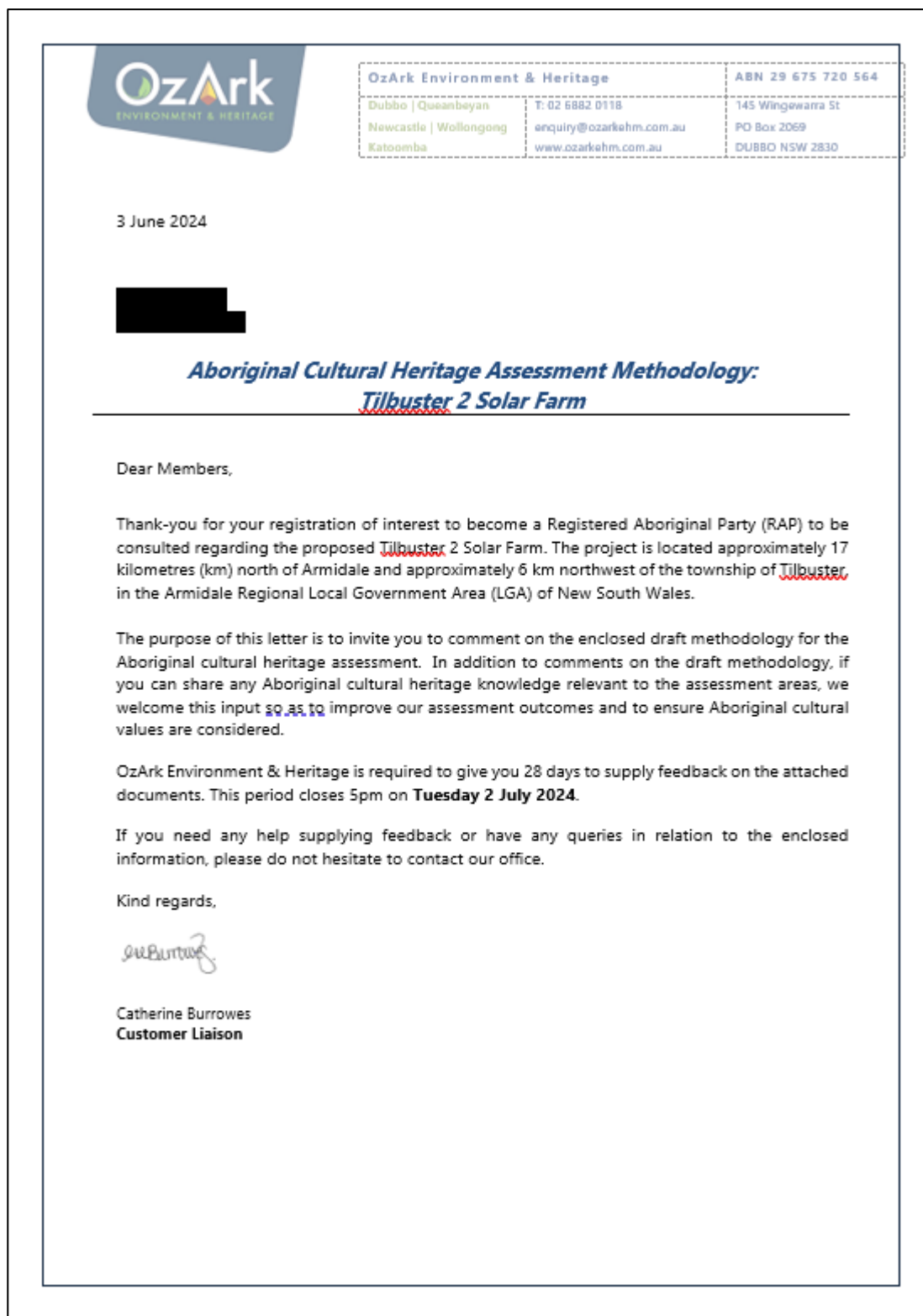


Catherine Burrows
Office Manager/ Community Liaison

Figure 1: Sites found during the initial survey.



Appendix 1 Figure 4: Stage 2/3 letters to RAPs (sample) and emails.



Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

To [redacted]

[Reply](#) [Reply All](#) [Forward](#) [...](#)

Mon 3/06/2024 3:48 PM



Hello Members,

Please find attached stage 2 information package for the **Aboriginal Heritage Assessment for the proposed Tilbuster 2 Solar Farm**.

I look forward to hearing from you with any feedback you may have by Tuesday 2 July 2024.

Regards, Catherine

Catherine BurrowesOzArk Environment & Heritage
Office Manager
(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm

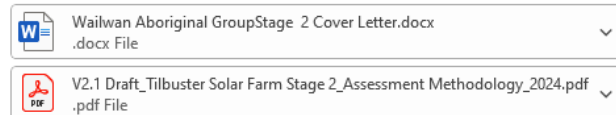


Catherine Burrowes

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Mon 3/06/2024 3:47 PM



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Office Manager
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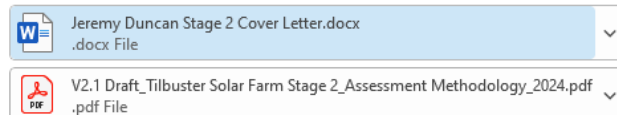


Catherine Burrowes

To [redacted]

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Hello Members,

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Regards, Catherine

Catherine BurrowesOzArk Environment & Heritage
Office Manager
(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

To C [REDACTED]

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Guda Birgingira Aboriginal Corporation Stage 2 Cover Letter.docx
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.pdf File

Hello Members,

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Regards, Catherine

Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

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Catherine Burrowes

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Long Gully Cultural Services Stage 2 Cover Letter.docx
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Hello Members,

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Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

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Mon 3/06/2024 3:43 PM

Colin Ahoy Stage 2 Cover Letter.docx
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Hello Members,

Please find attached stage 2 information package for the **Aboriginal Heritage Assessment for the proposed Tilbuster 2 Solar Farm**.

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Regards, Catherine

Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

To [REDACTED]



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Culturally Aware Stage 2 Cover Letter.docx
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Hello Members,

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Regards, Catherine

Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

To [REDACTED]



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Gumbaingarr Traditional Owners Aboriginal Corporation Stage 2 Cover Letter.docx
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Hello Members,

Please find attached stage 2 information package for the **Aboriginal Heritage Assessment for the proposed Tilbuster 2 Solar Farm.**

I look forward to hearing from you with any feedback you may have by Tuesday 2 July 2024.

Regards, Catherine

Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm



Catherine Burrowes

To [REDACTED]



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Mon 3/06/2024 3:40 PM

Iwatta Aboriginal Corporation Stage 2 Cover Letter.docx
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.pdf File

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I look forward to hearing from you with any feedback you may have by Tuesday 2 July 2024.

Regards, Catherine

Catherine Burrowes

OzArk Environment & Heritage

Office Manager

(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm

CB

Catherine Burrowes

To C [REDACTED]

Nyakka Aboriginal Corporation Stage 2 Cover Letter.docx

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I look forward to hearing from you with any feedback you may have by Tuesday 2 July 2024.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118

Stage 2-3 Draft Methodology - Tilbuster 2 Solar FarmHello Members,

CB

Catherine Burrowes

To C [REDACTED]

Armidale LALC Stage 2 Cover Letter.docx

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Reply

Reply All

Forward

Mon 3/06/2024 3:49 PM

Hello Members,

Please find attached stage 2 information package for the **Aboriginal Heritage Assessment for the proposed Tilbuster 2 Solar Farm**.

I look forward to hearing from you with any feedback you may have by Tuesday 2 July 2024.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118

Appendix 1 Figure 5: Stage 2/3 RAP responses.

Long Gully Cultural Services

Re: Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm

ET

To Catherine Burrowes

Hi Catherine,

After reading the methodology, I agree with the methodology as it's up to standards.

I would like to be apart of this project as I have strong connections to this country and have over 7 years experience.

Kind regards,
Ethan Trewlynn

Gumbaingarr Traditional Owners Aboriginal Corporation

RE: Evidence History of Gumbaingarr People New England Tablelands

GT

To Catherine Burrowes

You replied to this message on 4/06/2024 12:54 PM.

Gumbaingarr Evidence.pdf

.pdf File

Dear Catherine

The Language Map of Tindale is not recognised by Native Title as the Boundaries are not correct. There are so many Errors that it's costing the original Traditional Owners of the New England Tablelands, Gumbaingarr FreshWater Peoples of the Mountains. I've been Researching for 4 Years and collecting Audio Recording of my Great Grandfather Frank Archibald and our Uncles, past Elders.

* We have finished the History of "King" Bobby-Malawangi and now it's ready to be Published

Gumbaingarr Peoples should be included as Traditional Owners in the Report of Aboriginal Cultural Heritage Assessment Report. The Photo's of our Ancestors and our Rock Art Site at Wattleridge are great Evidence.

Each of these Places the Photos of our Ancestors sitting on the Granite Rock at Tilbuster, Sacred Sites, Camping, Dancing Ceremonies & Hunting are Significance to Gumbaingarr Peoples today.

* I Enclosed our Evidence

I don't agree with Anaiwan as Traditional Owners, no matter what is written. Armidale is not Determining who are the Traditional Owners of this Country until Native Title comes and sit down with the 2 Groups, Gumbaingarr & Anaiwan Peoples. The Federal Court will determine who are the Traditional Owners. Until then out of Respect for Gumbaingarr FreshWater Peoples, New England Tableland requested for OZARK to name Gumbaingarr as Traditional Owners in Aboriginal Cultural Assessment Report.

Yours Sincerely
Thelma Kelly

Reply

Reply All

Forward

...

Tue 4/06/2024 12:45 PM

Iwatta Aboriginal Corporation and OzArk Correspondence

Iwatta Aboriginal Corporation

Hi Catherine,

Please pass this on to whom it may concern!

Iwatta Aboriginal Corporation takes our exclusion from this stage of the project as disrespectful and unprofessional!

We have been a involved with this project from the beginning, as Cultural Knowledge Holders of this area and we worked openly with the prior Archaeology team and shared our knowledge, you have chosen to disregard our Cultural Knowledge and connection to this area and this will be noted.

Steven Ahoy our senior sites Officer is currently apart of the initiated Mens group that continues ceremonies on and around Gattamburumbree (MT Duval) and should be included by Cultural respect and for his knowledge.

This is very significant ceremonial area and we fear you have chosen Aboriginal people without true Cultural knowledge and that approach has been used in the past as a weapon/tool to down play our Cultural significance and connection.

I encourage you to give Steven Ahoy (0439407828) a call to discuss our concerns further.

Thank You
Jocelyn Blair
Sites Officer
Iwatta Aboriginal Corporation

Aboriginal Cultural Heritage Assessment Report: Tilbuster 2 Solar Farm

89

OzArk

RE: Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm

S

Follow up - Completed on Monday, 8 July 2024.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Reply

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Forward

Fri 5/07/2024 9:17 AM

Hi Jocelyn,

Thank you for your email. As Catherine has advised, we have 11 Registered Aboriginal Parties (RAPs) for this project, as listed in Section 1.5 of the draft assessment methodology.

Due to the large number of RAPs for this project, we are sharing the fieldwork to ensure as many groups as possible have the opportunity to assess the project area. The fieldwork positions for the one day survey next week have been allocated to Nyakka Aboriginal Corporation and Guda Birgingira.

Positions for the previous three day survey completed in August 2023 were allocated to yourselves (Iwatta Aboriginal Corporation), Armidale LALC, and Nunawanna Aboriginal Corporation. The project area has not changed since the previous assessment was completed in August 2023 so the survey next week will be an opportunity to show other groups invited the sites and areas of PAD that were recorded.

If Iwatta Aboriginal Corporation would like to invite someone to attend next week in a voluntary/unpaid capacity they are more than welcome, however I understand that is a lot to ask of someone's time.

Should any further fieldwork (i.e. test excavation) be required for the project, Iwatta Aboriginal Corporation will be invited to attend, and you will be consulted as the project continues to ensure you have all project information.

Kind regards,

Stephanie Rusden

OzArk Environment & Heritage
Director and Senior Archaeologist
(02) 6882 0118

Iwatta Aboriginal Corporation

Re: Stage 2-3 Draft Methodology - Tilbuster 2 Solar Farm

IA

If there are problems with how this message is displayed, click here to view it in a web browser.

Reply

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Forward

Fri 5/07/2024 1:53 PM

Hi Stephanie,

Thank you for the clarification,

I understand your intention to share work evenly amongst the registered RAP's.

But this is not a call out for work opportunities! This is an Cultural investigation that needs Cultural Knowledge Holders involved, as these stages are crucial to identification and preservation of Anaiwan Culture and Heritage objects in particular.

There will be general work opportunities further down the track that the community will be involved with but I re-assert the need to have the right Anaiwan Cultural Knowledge holders conducting the survey.

Appendix 1 Figure 6: Stage 4 cover letter and email



OzArk Environment & Heritage

Dubbo | Queanbeyan T: 02 6882 0118
Wollongong | Newcastle enquiry@ozarkehm.com.au
Katoomba www.ozarkehm.com.au

ABN 29 675 720 564

145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

22 August 2024

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED
TILBUSTER STAGE 2***

Dear Members,

Thank-you for your continued participation as a Registered Aboriginal Party (RAP) and involvement in the above-mentioned project.

Enerparc Australia Pty Ltd (the Proponent) would like to offer you the opportunity to provide feedback on the draft Aboriginal Cultural Heritage assessment Report (ACHAR) that has been undertaken in accordance with stage four (4) of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCR).

As per the ACHCRs we are required to give you twenty-eight (28) days to supply feedback on the attached draft ACHAR. This period closes on the **Thursday 19 September 2024**. Should our office not be contacted within this time frame, we will presume that you are satisfied with the contents of the ACHAR as it stands.

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

Kind regards,



Catherine Burrowes
Office Manager/ Community Liaison

Stage 4 - Draft ACHAR - Tilbuster Stage 2

CB

Catherine Burrowes

To

Bcc

Reply

Reply All

Forward

...

Thu 22/08/2024 3:52 PM

Stage 4 Cover Letter.docx

.docx File

V2.1_DRAFT_Tilbuster Stage 2 Solar Farm_ACHAR_August2024.pdf

.pdf File

Hello Members,

Please find attached the draft stage 4 information package for Proposed Tilbuster Stage 2.

I look forward to hearing from you with any feedback you may have by Wednesday 19 September 2024.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118

APPENDIX 2: ASSESSMENT METHODOLOGY



View across the project area.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT METHODOLOGY

TILBUSTER STAGE 2 SOLAR FARM
ARMIDALE LOCAL GOVERNMENT AREA, NSW
JULY 2024

Report prepared by
OzArk Environment & Heritage
for GHD Pty Ltd
on behalf of Enerparc Australia Pty Ltd

OzArk

**OzArk
Environment & Heritage**

145 Wingewarra St
(PO Box 2069)
Dubbo NSW 2830
Phone: (02) 6882 0118
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www.ozarkehm.com.au

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DOCUMENT CONTROLS

Proponent	Enerparc Australia Pty Ltd		
Client	GHD Pty Ltd		
Document Description	Aboriginal Cultural Heritage Assessment Methodology, Tilbuster Stage 2 Solar Farm		
File Location	OzArk Job No.		
► Clients ► GHD Newcastle ► Tilbuster Stage 2 SF ACHAR April 2024 ► Methodology	4379		
Document Status: V3.0 FINAL		Date: 3 July 2024	
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Draft V2: OzArk and client edits		V2.0 OzArk to client 31/05/2024 V2.1 OzArk to RAPs 3/06/2024	
Final V3: Final document		V2.0 OzArk finalise 3/7/2024	
Prepared for		Prepared by	
Lisa King Technical Director - Environment & Approvals GHD Level 3, 24 Honeysuckle Drive Newcastle NSW 2300 M: 0479 091 904 Lisa.king@ghd.com		Imogen Crome Archaeologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2066) Dubbo NSW 2830 P: 02 6882 0118 imogen@ozarkenvironment.com.au	
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Enquiries should be addressed to OzArk Environment & Heritage.			

Acknowledgement

OzArk acknowledge the Traditional Custodians 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

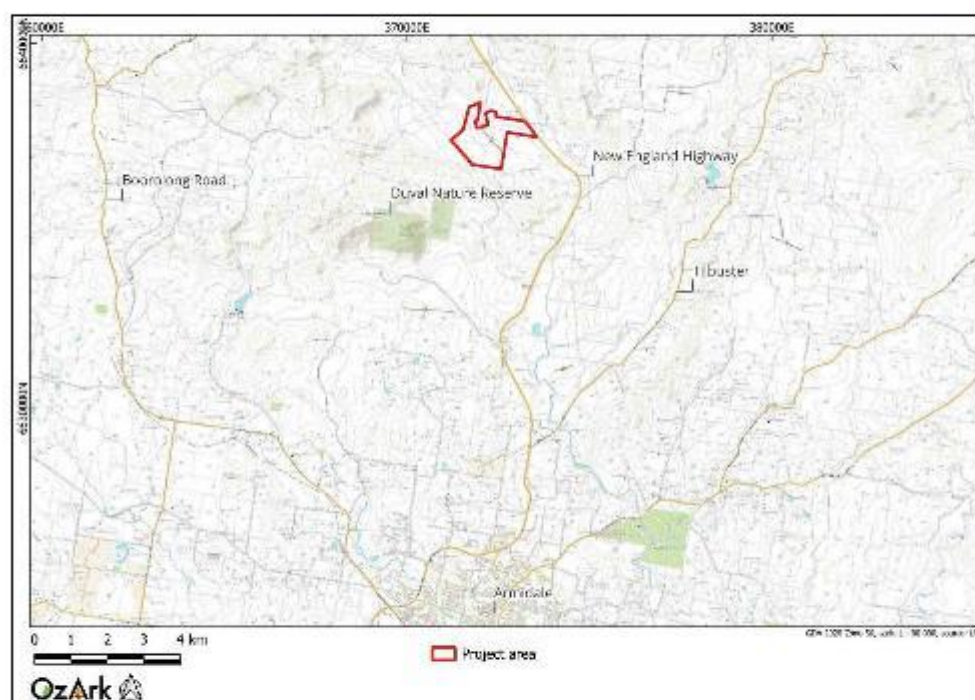
1.1 PREAMBLE

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Enerparc Australia Pty Ltd (the proponent) to prepare an assessment methodology for the Tilbuster Stage 2 Solar Farm (the project). Approval for the project is being sought under State Significant Development (SSD) 69799460.

The project is located approximately 17 kilometres (km) north of Armidale and approximately 6 km northwest of the township of Tilbuster, in the Armidale Regional Local Government Area (LGA) of New South Wales (NSW) (Figure 1-1). The project is located adjacent to the approved Tilbuster Stage 1 Solar Farm (SSD-9619).

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

Figure 1-1: Location of the project area.



1.2 BACKGROUND TO THE PROJECT

OzArk was initially engaged to assess the project area in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence; DECCW 2010b). During the visual inspection three Aboriginal sites were recorded including two isolated finds and an artefact scatter with potential archaeological deposits (PAD). Additionally, four areas of PAD were identified. Further details of this assessment are provided in **Section 3.4.1**.

The project has since been classified as an SSD and therefore an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) with formal Aboriginal community consultation as per the ACHCRs (DECCW 2010a) is now required. The ACHAR will utilise the results of the visual inspection which was undertaken to a level suitable to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (the Code of Practice; DECCW 2010c).

1.3 PROJECT OVERVIEW

The proponent is proposing to construct a solar farm on the project area, as a second stage to the adjacent approved Tilbuster Stage 1 Solar Farm. The works proposed include installation of a solar array, required connection infrastructure, and access roads/ tracks. All other transmission, operation and battery storage infrastructure will be located on the adjacent Tilbuster Stage 1 Solar Farm. Access to the project area will also be via the access road under construction for the Tilbuster Stage 1 Solar Farm (already approved).

1.4 PROJECT AREA

The project area describes the area in which all impacts associated with the project will be located (**Figure 1-2**). The project area covers approximately 186 hectares (ha) of land zoned as RU1: Primary Production under the Armidale Regional Local Environmental Plan (LEP) 2012.

The project area is located at the eastern edge of the NSW New England Tablelands bioregion, specifically, the Armidale Plateau sub-bioregion (NPSW 2003). The bioregion mainly occupies a temperate to cool temperate climate zone characterised by warm summers with uniform rainfall and a subhumid climate. Within the Armidale Plateau sub-bioregion, the project area is situated within the Dingo Spur Meta-sediments landscape as characterised by Mitchell (2002). This landscape is defined by steep ranges and hills which extends into the New England Tablelands. Elevations generally range between 300 to 1400 metres (m) with a geology of Permo-Carboniferous mudstone, lithic sandstone, tuff, slate, hornfels and some schist (Mitchell 2002: 78). Loam and sandy loam soils typically are shallow and gradational in low valleys with stony loam on steep slopes (Mitchell 2002:78).

Duval Creek, a fourth order perennial watercourse, intersects the eastern portion of the project area (see Figure 1-3). Tilbuster Ponds is located 500 m east of the project area and the Gara River is the closest major watercourse to the project located 12 km to the east.

Vegetation is complex and consists of silver-top stringybark, New England stringybark on dry aspects, Blakely's red gum, yellow box and apple box on moist, well-drained slopes, and New England peppermint with ribbon gum on flats (NPSW 2003:161).

Figure 1-2. Aerial of the project area.

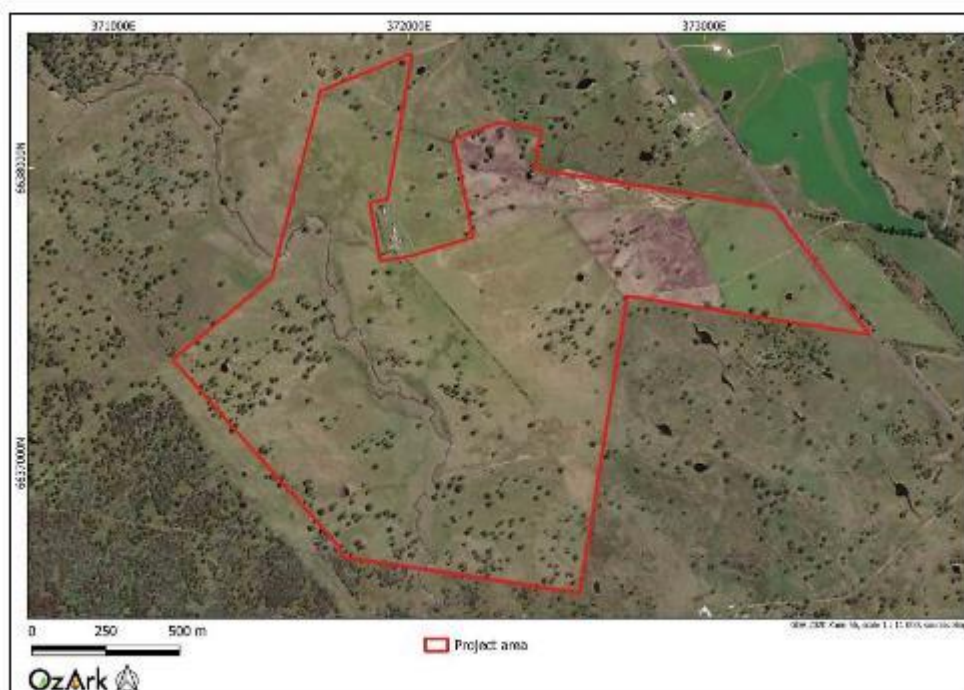
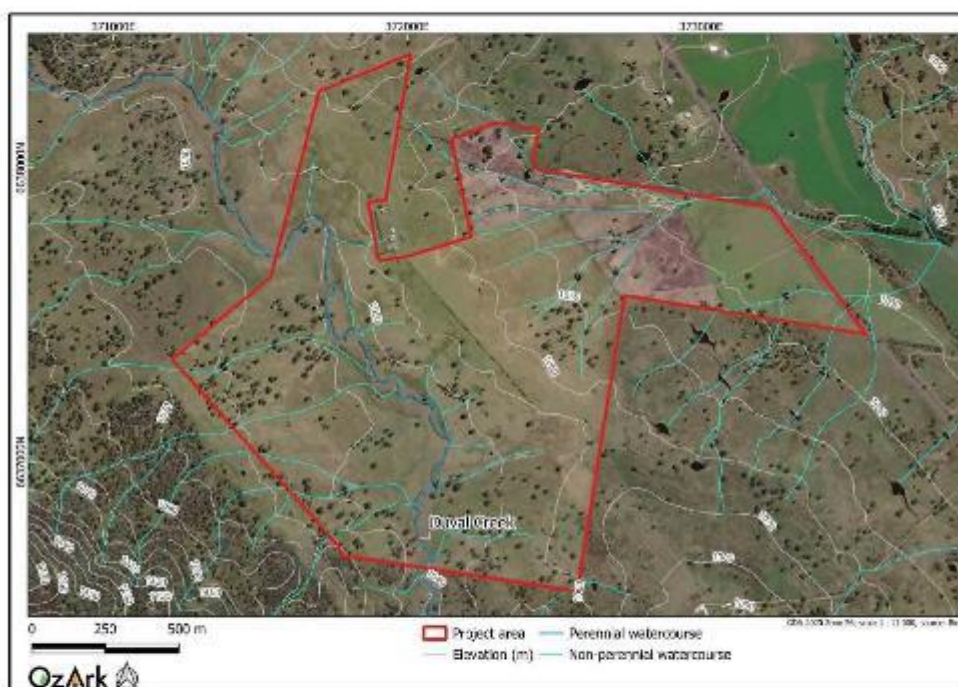


Figure 1-3: Topography and drainage of the project area.

1.5 CONSULTATION ON THIS METHODOLOGY

Consultation for this project 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 project.

On 19 April 2024 an advertisement was placed in the *Armidale Express* requesting expressions of interest in being consulted about the project. In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Armidale Local Aboriginal Land Council (LALC); the Office of The Registrar, *Aboriginal Land Rights Act 1983*; the National Native Title Tribunal; Native Title Services Corporation Limited (NTSCORP); the Armidale Regional Council; and the Northern Tablelands Local Land Services.

As a result, the following individuals/groups registered to be consulted about the project:

- Anaiwan Traditional Owners Aboriginal Corporation
- Colin Ahoy
- Culturally Aware
- Guda Birgingira Aboriginal Corporation

- Gumbaingarr Traditional Owners Aboriginal Corporation
- Iwatta Aboriginal Corporation
- Jeremy Duncan
- Long Gully Cultural Services
- Nyakka Aboriginal Corporation
- Wailwan Aboriginal Group

The Armidale LALC did not formally register for the project but will be included in the consultation process for transparency.

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

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

2.1.2 Managing Country

Living on this land for around 50,000 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 much of eastern Australia, Aboriginal communities live their lives like most Australians. However, in certain crucial areas, particularly associated with family, 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 within the landscape in which the project is located so that those values can be recognised and incorporated into the ACHAR's management recommendations.

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

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 project will be located. Should any RAPs have knowledge of cultural values regarding the project 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.

2.2.1 Use of information collected

An ACHAR will be prepared for the project which articulates Aboriginal cultural values and associated conservation methods across the project 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 available to Heritage NSW for their consideration of the project and the report will be publicly available.

2.2.2 Public / confidential information

Information will be treated in accordance with instructions received by Aboriginal informants. 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.

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.

3 ARCHAEOLOGICAL CONTEXT

3.1 ABORIGINAL PEOPLE OF THE PROJECT AREA

The project area is situated within the traditional lands of the *Nganyaywana*; also known as the *Anaiwan* people.

Norman Tindale (1974) recorded the location of the *Anaiwan* as being within the “*New England tableland from Guyra and Ben Lomond south to Uralla and Moombie Range; northwest to Tingha; at Bendemeer and Armidale*”. Clayton-Dixon (2019) notes that the *Anēwan* (*Anaiwan*) language group was located near Armidale. *Yaniwan* and *Anēwan* are part of the same group of languages.

Clayton-Dixon (2019: 28–30) describes the rapid colonisation of the district that began in the late 1830s. In September 1839, government records show that there were 37 stations across the Tablelands holding 422 colonists. By 1841 the colonial population had tripled to 1,052. Considered by Governor Gipps to be “*one of the best grazing districts in the colony*”, the Tablelands saw exponential growth in the number of stations it held. By 1848 there were 132 stations, and the New England district quickly became the epicentre of colonial expansion. In 1846 a Sydney newspaper, *The Spectator*, reported that “*there is perhaps not another district in New South Wales that can equal New England in its rapid rise in importance, in population, in wealth*”. Despite colonial settlement starting later than other neighbouring districts, the New England district colonial population soon outnumbered those of its neighbours. By 1860 there were over 7,000 colonists in the district with a population density of over 100 colonists for every 1,000 square kilometres.

By contrast, the estimates of the Aboriginal population in the early colonial period are more fraught with inaccuracies. Commissioner Macdonald, for example, estimated in 1842 that the population did not exceed 500–600, however, he noted the following caveat:

It is at all times a matter of much difficulty to determine the number of Natives frequenting particular districts of country with any certainty in consequence of their wandering and unsettled habits of life, a tribe remaining in any one encampment for more than a week or 10 days at a time, except when they congregate in force at certain seasons of their religious ceremony.

Clayton-Dixon (2019: 32)

In 1851, Doctor Thomas Markham, Medical Superintendent to the New England Aborigines (sic), noted:

If I were to take the statement of every settler as to the number of Blacks on his run, I am positive the number would amount to 600.

Clayton-Dixon (2019: 34)

As Clayton-Dixon (2019: 34) notes, this figure does not include Aboriginal people living away from settlements and perhaps failed to note a further 100 people who continued to live in the more remote parts of the district, particularly in the rugged eastern escarpment country.

The Reverend W.B. Clarke, while conducting an extensive geological survey of the Tablelands in 1853, estimated the Aboriginal population at 800 (Clayton-Dixon 2019: 35). Shortly afterwards with the launch of the gold rushes further south, the white population was diminished with the withdrawal of people to the various gold fields. This labour shortage saw the beginning of an immigration of Aboriginal people from other districts to the Tablelands, perhaps accounting for the higher population noted by Clarke in 1853 (Clayton-Dixon: 2019: 35).

3.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Archaeological studies of the New England Tablelands are closely associated with the University of New England (UNE), along with archaeological consultancy investigations in response to proposed developments across the region. The academic studies have led to the development of regional Aboriginal occupation models, particularly from the mid-Holocene onwards.

Initial archaeological research by UNE indicated that Aboriginal occupation of the Tablelands was seasonal and transitory. Evidence has found that Aboriginal occupation within the New England Tablelands centred on rivers, creeks, and rock shelters (RPS 2008, Davidson 1978). It is believed that occupation within this region would have been seasonal due to the naturally cold environment and paucity of resources. It seems the area was home to small population groups with boosts in population during summer as the Aboriginal people moved from the coast and western slopes to these higher areas (RPS 2008, Davidson 1978, Belshaw 1978, Bowdler 1981). Some argued that instead, the New England Tablelands were mainly used for ceremonial purposes which was supported by the rich archaeological record of Bora Rings, art sites, stone arrangements, and carved trees along with Aboriginal knowledge of intangible sites (Flood 2010: 238–239).

The initial hypotheses of seasonal occupation in the New England Tablelands were challenged as a result of further research at UNE. In a major study, Luka Godwin argued that the New England Tablelands were not abandoned in winter at all but occupied all year round by small mobile groups. His evidence based on ethno-history, climate and surface archaeology suggests that the cold winter climate of the New England Tablelands was not a barrier to year-round settlement (EMM 2018: 35). Godwin identified that the New England Tablelands had varying resources zones of woodland, grassland, and wetlands.

A recent study by Beck, Haworth and Appleton published in 2015 built upon the theory of year-round settlement, with a specific focus on the resources of lagoons in the upland wetlands (EMM 2018: 36). The researchers found that during the later Holocene, Aboriginal occupation in this area became more appreciable, including a high number of ceremonial sites in association with areas of greatest lagoon concentration. They hypothesise that the drier, more uncertain climate

of the late Holocene would have concentrated game around larger lagoons which became the focus of consumption and exchange for Aboriginal people. They argue that the concentration of resources would have supported larger numbers of people often associated with ceremonial activity.

The most informative results were gathered from Barley Fields Lagoon, where optically stimulated luminescence dating has identified dates of possibly early Holocene occupation, which are currently the earliest dates on the Tablelands (EMM 2018: 36). The excavation also extended to the south of Barley Fields Lagoon into a quarry of silcrete where several subsurface silcrete artefacts were identified.

By distinguishing certain features of stone tools that are common to all sites, the dating of Aboriginal occupation in the New England Tablelands can be achieved within a rough estimate. The heavy core and flake scrapers (40,000–10,000 years ago) of the 'Australian Core Tool and Scraper Tradition' have been associated with making wooden tools such as boomerangs, spears, clubs, and throwing sticks. Tools of the newer industries (10,000–5,000 years ago) are relatively small in size and are defined by shape as points, adzes and backed (blunted) blades and are known as the 'Small Tool and Scraper Tradition'. These smaller tools are found in conjunction with chisels and axes. The oldest examples of these stone tools come from the New England region (Binns and McBryde 1972, McBryde 1974). There was a further change in technology (1,000–400 years ago) with a loss of some items from the range (backed blades and finely retouched [re-sharpened] blades) were replaced with simple flakes, bipolar pieces and ground edge axes, and a greater use of shell, bone and glass for tool making.

From the available evidence of stone tool typology, therefore, the New England Tablelands were increasingly occupied during the Holocene but that earlier dates are infrequent and often unreliable. Archaeological and linguistic evidence suggests that the New England Tablelands were most intensively occupied from around 4,000 years ago (EMM 2018: 36). This is based on the finds of surface or near-surface artefacts, with very little found at greater depth. The oldest known Aboriginal site on the Tablelands is Graman Shelter B1 (near Inverell) (5,450 years old) (RPS 2008: 7) and a 4,300-year-old site near Bendemeer on the southern edge of the Tablelands (EMM 2018: 36) (although this may change based on recent findings at Barley Fields Lagoon noted above).

3.3 REGIONAL ARCHAEOLOGICAL CONTEXT: SUMMARY

Utilising data that has been collected both regionally and locally, broad statements about archaeological sites that have the potential to occur within the project area can be made. These predictions are:

- Aboriginal sites appear to be most prominent on crest landforms. Sites are relatively common on slope landforms where there is the presence of outcropping bedrock, particularly silcrete bedrock. Other sites on slopes occur within a secondary context.
- Sites are also identified on flat landforms in relation to water. All orders of watercourses have a higher potential to record archaeological sites.
- The predominant site type in the region are stone artefact sites (isolated finds and scatters).
- All site types have the potential to be present, with relatively high numbers of grinding groove sites, quarries, scarred trees, and ceremonial sites identified in the area.
- The predominant material utilised for artefact manufacture is silcrete. A relatively large number of artefacts in the region are also manufactured from chert, and there is the potential for artefacts manufactured from volcanics to be present.

3.4 LOCAL ARCHAEOLOGICAL CONTEXT

A search of the Heritage NSW administered Aboriginal Heritage Information Management System (AHIMS) database on 17 May 2024 returned 91 results for Aboriginal sites within a 6 km radius of the project area (GDA Zone 56 Eastings: 369750- 374750; Northings: 6634900- 6639900) (see **Table 3-1** for site types and frequencies and **Figure 3-1** shows the location of sites in relation to the project area).

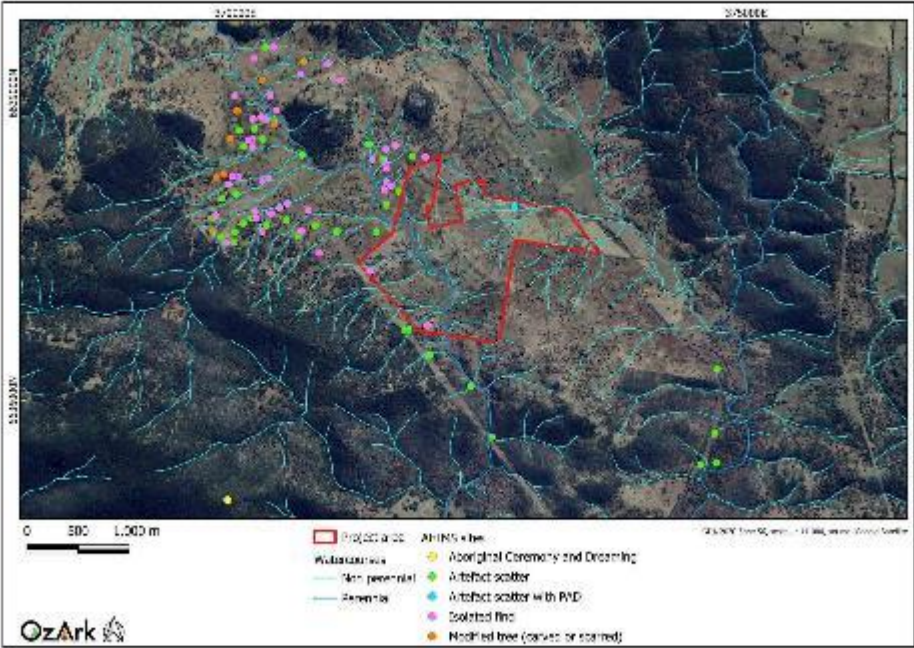
Figure 3-1 shows there are three recorded Aboriginal sites within the project area. These include two isolated finds and an artefact scatter with PAD, previously identified by OzArk and discussed in further detail in **Section 3.4.1**. Numerous additional sites have been recorded surrounding the project area, particularly within the assessed area for the Tilbuster Stage 1 Solar Farm. These sites have been mostly recorded along the lower elevation landforms adjacent to Duval Creek and its associated drainage lines (**Figure 3-1**).

The most frequently recorded site types are isolated finds which contribute 48.4% of the site types in the vicinity of the project area and artefact scatters which account of 39.6%. Modified trees (carved or scarred) are less frequently recorded (9.9%) (see **Table 3-1**).

Table 3-1: AHIMS site types and frequencies

Site Type	Number	% Frequency
Isolated find	44	48.4
Artefact scatter	36	39.5
Modified tree (carved or scarred)	9	9.9
Artefact scatter with PAD	1	1.1
Aboriginal ceremony and dreaming	1	1.1
Total	91	100

Figure 3-1. AHIMS sites in relation to the project area.



3.4.1 Archaeological investigations within and near the project area

3.4.1.1 *Tilbuster Stage 1 Solar Farm assessment results*

In 2020, NGH undertook the Aboriginal cultural heritage assessment for the Tilbuster Stage 1 Solar Farm over Lot 1 of DP 225170, Lot 1 of DP 585523 and Lot 3 of DP800611, located immediately adjacent to the project area.

The assessment recorded 49 isolated finds, 28 artefact scatters, six scarred trees and three cultural trees. It was later determined through further community consultation that two of the trees (21-1-0039 [Tilbuster Solar ST6]) and (21-1-0316 [Tilbuster Solar CT2]) were not culturally modified and therefore 'not a site'.

The assessment identified thin A horizon silty topsoils above a compacted silty clay B horizon with significant erosion noted across the assessment area. It was therefore determined that there was little potential for subsurface deposits across majority of the landscape except for near artefact scatters Tilbuster Solar AS24 and AS25. As a result, test excavation was undertaken with nine pits excavated at Tilbuster Solar AS24 and seven pits excavated at Tilbuster Solar AS25. Test pits depth ranged from 20 centimetres (cm) to 40 cm, with most test pits excavated to a depth of 30 centimetres below the surface. Of the sixteen excavated test pits, only nine contained artefacts. Most pits containing artefacts were located to the north of an elevated spur above Duval Creek, adjacent to a shallow ephemeral drainage line and below the crest on which the majority of AS24 artefacts were identified.

3.4.1.2 *Tilbuster Stage 2 Solar Farm visual inspection results*

As noted in **Section 1.2**, the visual inspection of the project area resulted in three Aboriginal sites being recorded including two isolated finds, an artefact scatter with PAD. Four additional areas of PAD were also identified, mostly along Duval Creek (**Figure 3-2**). **Table 3-2** provides details of the Aboriginal sites recorded.

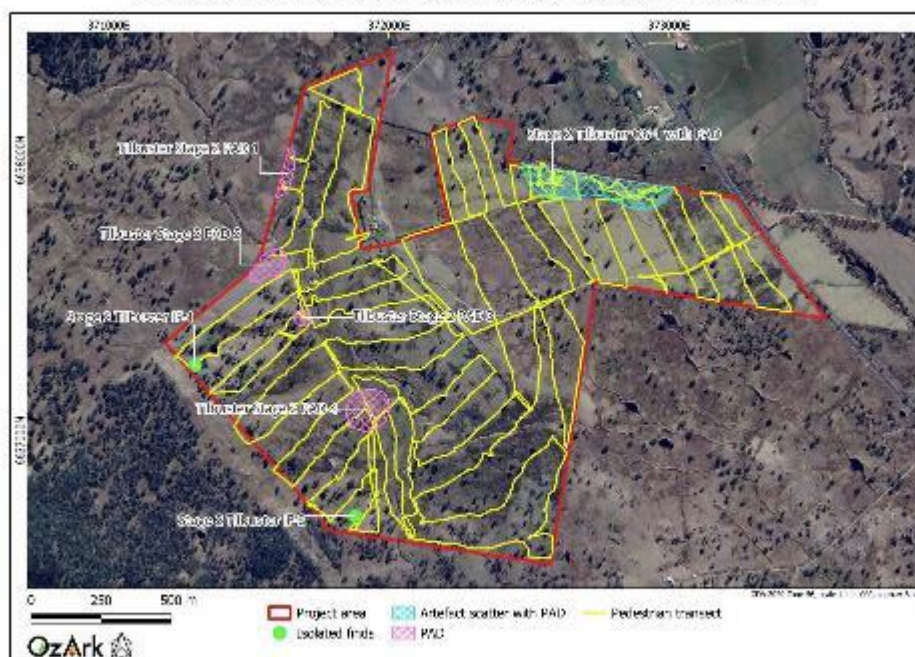
The assessment was completed by two OzArk Archaeologists and two Aboriginal site officers on each of the three days of fieldwork. Systematic transects were conducted across the entirety of the project area, with surveyors spaced approximately 20 m apart (**Figure 3-2**). Spacing decreased in areas of exposure and sensitive landforms.

Table 3-2: Recorded Aboriginal sites across the project area.

AIHMS ID	Site name	Site Description	Location Photo	Artifact photo
21-1-0575	Stage 2 Tilbuster IF1	The site consists of a single stone artefact manufactured from silcrete recorded on a gently sloping landscape. No other raw materials suitable for stone tool manufacture were observed at the site or its surroundings. The surrounding vegetation was comprised of grasses, shrubs and trees, all of which contributed to a relatively low visibility of approximately 15%. Disturbances include historical vegetation clearance, grazing and erosion. It is unlikely that the site contains subsurface archaeological deposits due to the activities conducted in which the site was recorded.	 View north to Stage 2 Tilbuster IF1 site location.	 Silcrete flake at Stage 2 Tilbuster IF1 site location.
20-3-0094	Stage 2 Tilbuster IF2	The site consists of a volcanic ground-edge artefact made, situated amongst a rocky outcrop. The landscape is a gentle slope which recedes eastwards towards Dugal Creek, some 100 m away. The outcrop view of a coarse, chunky conglomerate rock, no other raw materials suitable for stone tool manufacture were observed at or near the site. The surrounding vegetation was comprised of scattered silcrete grasses, and shrubs, all of which contributed to a low visibility of 25%. Land disturbances include tree clearance and grazing. The potential for subsurface deposits at the site was assessed as low due to the disturbed condition of the surroundings.	 View north to Stage 2 Tilbuster IF2 site location.	 View of ground-edge artefact recorded at Stage 2 Tilbuster IF2.

AIHMS ID	Site name	Site Description	Location Photo	Artifact photo
21-1-0574	Stage 2 Tilbuster OS1	The site is an artefact scatter containing 32 stone artefacts including 3 axes, 22 flakes, 3 backed pieces and 4 stone shatter pieces. The artefacts are manufactured from a range of raw materials, a core is most common but quartz, coarse greywacke and chert are also present. Artefacts were found on the eroded banks where visibility was at 100%. The land has largely been cleared for grazing, however, some low vegetation is present including scattered trees, shrubs and dense grass. Potential for subsurface deposits at the site was assessed to be high extending over the flat bench which adjoins the southern bank.	 View west to Stage 2 Tilbuster OS1 site location.	 Sample of artefacts recorded at Stage 2 Tilbuster OS1.

Figure 3-2. Pedestrian coverage and recorded Aboriginal sites and PADs across the project area.



4 PREDICTIVE MODEL

4.1 LANDFORM CONTEXT AND ARCHAEOLOGICAL POTENTIAL

Landform mapping and the previous survey undertaken across the project area shows there are two main landform types (Figure 4-1):

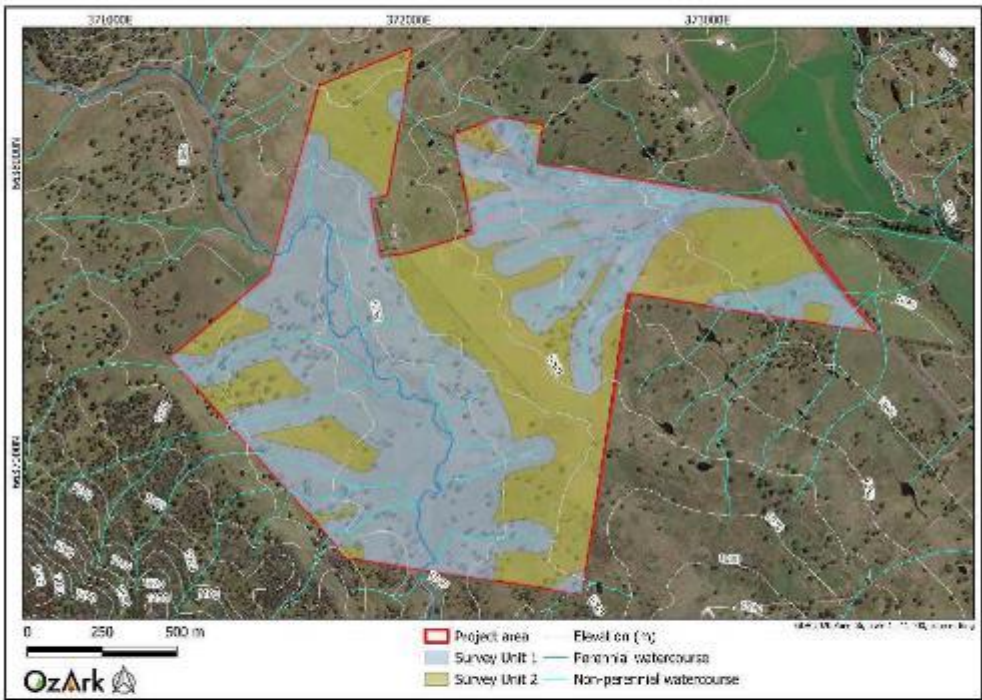
- drainage lines with a 200 m buffer around named watercourses and 50 m buffer around unnamed watercourses
- gentle slopes across the remainder of the project area

Section 3.4 shows that the general pattern is that most Aboriginal sites are present close to watercourses and therefore these landforms have a greater likelihood for sites to be recorded. Gently sloping landforms distant to water which comprise the remainder of the project area would have offered hospitable grounds for movement or occupation these would most likely have been limited to transient habitation resulting from movement across the landscape to other areas which provide more stable resources. For example, water and resources provided by the Gara River further east.

Crucial for the preservation of archaeological deposits is the history of past land use in an area. Disturbance, historical or natural, potentially alters the archaeological record. It can do this in a variety of ways, directly or indirectly. For example, land clearing directly removes particular site types: usually scarred trees or stone arrangements. The project area and surrounding land is primarily used for farming and grazing operations. The presence of hooved livestock is likely to have resulted in trampling and compaction of the ground surface which accelerates soil loss, similar to the landforms across the Tilbuster Stage 1 Solar Farm area (NGH 2020).

As the project area has already been subject to systematic survey, it is unlikely that further archaeologically significant Aboriginal sites will be present. Should any additional Aboriginal sites be present across the project area, they will likely to be limited to isolated finds and / or artefact scatters.

Figure 4-1: Landforms within the project area.



5 ASSESSMENT METHODOLOGY

5.1 ASSESSMENT APPROACH AND AIMS

The Aboriginal cultural heritage assessment of the project area will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (The Guide, OEH 2011) and the Code of Practice.

The previous survey undertaken across the project area was completed following the Code of Practice.

The aim of the proposed additional archaeological survey will be to reassess the previously delineated extents of the areas of PAD areas the project area and discuss management measures.

5.2 SURVEY METHODOLOGY

In the field, OzArk staff with the assistance of RAPs will re-evaluate the previously delineated extant of the recorded PADs. Should any additional Aboriginal objects be identified, OzArk will record and evaluate the physical (i.e., archaeological) evidence using standard archaeological field survey and recording methods (Burke & Smith 2004). Site recording will capture all the information required to complete current AHIMS site recording forms (e.g., site location, site boundary, site plan, representative photographs, artefact recording and feature recording). RAPs will participate in the survey, identifying Aboriginal objects, determining the cultural significance of Aboriginal objects and identifying cultural places or non-physical site types / cultural values within the project area.

5.3 TEST EXCAVATION

Several areas of PAD have been identified across the project area (see **Section 3.4.1.2** and **Figure 3-2**). If any of these areas of PAD are unable to be avoided by the project, test excavation under the Code of Practice (Requirements 14–17) will be required. If this eventuates, a 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 3: AHIMS SEARCH RESULT



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379

Client Service ID : 893312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0351	Tilbuster Solar AS27	GDA	56	371729	6638382	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0352	Tilbuster Solar AS26	GDA	56	370652	6638397	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0319	Tilbuster Solar ST4	GDA	56	370669	6639312	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0323	Tilbuster Solar IF16	GDA	56	370714	6637855	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0066	SS7	AGD	56	371550	6636500	Open site	Valid	Artefact : -	Open Camp Site	99974
	Contact	Recorders	Alice Gorman							Permits
21-1-0069	S60	AGD	56	372400	6635450	Open site	Valid	Artefact : -	Open Camp Site	99974
	Contact	Recorders	Janice Wilson							Permits
21-1-0294	Tilbuster Solar IF32	GDA	56	370398	6638834	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0295	Tilbuster Solar IF33	GDA	56	369972	6638190	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0297	Tilbuster Solar IF35	GDA	56	370509	6637923	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0328	Tilbuster Solar AS10	GDA	56	369779	6637783	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0336	Tilbuster Solar AS2	GDA	56	370294	6639449	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0555	Duval mountain ST10	GDA	56	369924	6635027	Closed site	Valid	Aboriginal Ceremony and Dreaming : -		
	Contact	Recorders	Mr.Steven Ahoy							Permits
21-1-0350	Tilbuster Solar AS28	GDA	56	371312	6638502	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0307	Tilbuster Solar IF45	GDA	56	370821	6637442	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0309	Tilbuster Solar IF47	GDA	56	370647	6637653	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0311	Tilbuster Solar IF49	GDA	56	370375	6639454	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits
21-1-0278	Tilbuster Solar Farm IF13	GDA	56	370030	6638181	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							Permits

Report generated by AHIMS Web Service on 17/05/2024 for Sophia Grubic for the following area at Datum :GDA, Zone : 56, Eastings : 369750.0 - 374750.0, Northings : 6634900.0 - 6639900.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 90

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379

Client Service ID : 893312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0118	Sunnyside AS2 (NE Highway, Armidale)	AGD	56	374609	6636115	Open site	Valid	Artefact : 2		100859,100861
	Contact	Recorders	Archaeological Surveys and Reports					Permits		
21-1-0283	Tilbuster Solar IF21	GDA	56	370264	6637652	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0284	Tilbuster Solar IF22	GDA	56	369919	6637541	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0286	Tilbuster Solar IF24	GDA	56	370299	6638743	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0299	Tilbuster Solar IF37	GDA	56	370341	6638981	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0300	Tilbuster Solar IF38	GDA	56	371020	6639129	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0324	Tilbuster Solar Farm IF4	GDA	56	370255	6638769	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0327	Tilbuster Solar AS11	GDA	56	371341	6638355	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0330	Tilbuster Solar AS8	GDA	56	369866	6637976	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0332	Tilbuster Solar AS6	GDA	56	370268	6638552	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0342	Tilbuster Solar AS19	GDA	56	370500	6637765	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0277	Tilbuster Solar Farm IF11	GDA	56	370352	6637822	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0301	Tilbuster Solar IF39	GDA	56	370205	6637779	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0306	Tilbuster Solar IF44	GDA	56	371460	6638055	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0318	Tilbuster Solar ST3	GDA	56	369813	6638179	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick					Permits		
21-1-0032	jasd 1;	AGD	56	374600	6635200	Open site	Valid	Artefact : -	Open Camp Site	2489
	Contact	Recorders	Mr.John Appleton					Permits		
21-1-0119	Sunnyside EAS1 (NE Highway, Armidale)	AGD	56	374583	6635487	Open site	Valid	Artefact : 16		100859,100860,100861
	Contact	Recorders	Archaeological Surveys and Reports					Permits	2942,2953	

Report generated by AHIMS Web Service on 17/05/2024 for Sophia Grubic for the following area at Datum :GDA, Zone : 56, Eastings : 369750.0 - 374750.0, Northings : 6634900.0 - 6639900.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 90

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379
Client Service ID : 893312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0281	Tilbuster Solar IF18	GDA	56	370265	6638144	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0285	Tilbuster Solar IF23	GDA	56	370168	6638553	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0288	Tilbuster Solar IF26	GDA	56	370181	6639347	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0329	Tilbuster Solar AS9	GDA	56	370002	6638021	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0333	Tilbuster Solar AS5	GDA	56	370039	6638639	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0343	Tilbuster Solar AS18	GDA	56	370302	6637712	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0345	Tilbuster Solar AS16	GDA	56	370156	6637781	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0346	Tilbuster Solar AS15	GDA	56	370076	6637731	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0349	Tilbuster Solar AS12	GDA	56	369861	6637596	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0574	Stage 2 Tilbuster OS1	GDA	56	372731	6637903	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Ms.Sophia Grubnic							
21-1-0353	Tilbuster Solar AS25	GDA	56	371598	6638045	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0358	Tilbuster Solar AS21	GDA	56	370783	6637708	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0276	Tilbuster Solar Farm IF10	GDA	56	371860	6638377	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0316	Tilbuster Solar CT2	GDA	56	370018	6638831	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0287	Tilbuster Solar IF25	GDA	56	369993	6638978	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0326	Tilbuster Solar Farm IF12	GDA	56	369936	6638111	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0334	Tilbuster Solar AS4	GDA	56	370187	6638652	Open site	Valid	Artefact : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379
Client Service ID : 893312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0338	Tilbuster Solar ST1	GDA	56	369781	6637652	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0348	Tilbuster Solar AS13	GDA	56	369986	6637544	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0312	Tilbuster Solar IF50	GDA	56	371471	6638455	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-2-0032	JAD51;TSR	AGD	56	374600	6635200	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.John Appleton,Clive Ahoy							
21-1-0341	Tilbuster Solar CT3	GDA	56	369882	6638217	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0558	Duval mountain ST5	GDA	56	370265	6639132	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Steven Ahoy							
21-1-0354	Tilbuster Solar AS24	GDA	56	371477	6637909	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0273	Tilbuster Solar Farm IF7	GDA	56	369808	6637805	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0304	Tilbuster Solar IF42	GDA	56	371480	6638134	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0305	Tilbuster Solar IF43	GDA	56	371524	6638095	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0068	SS9	AGD	56	372200	6635950	Open site	Valid	Artefact : -	Open Camp Site	99974
	Contact	Recorders	Janice Wilson							
21-1-0335	Tilbuster Solar AS3	GDA	56	370368	6638752	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0339	Tilbuster Solar ST6	GDA	56	369947	6638562	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0344	Tilbuster Solar AS17	GDA	56	371436	6638357	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber,NGH Heritage - Fyshwick							
21-1-0575	Stage 2 Tilbuster IF1	GDA	56	371315	6637267	Open site	Valid	Artefact : -		
	Contact	Recorders	Ms.Sophia Grubnic							

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379
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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0356	Tilbuster Solar AS22	GDA	56	370994	6637650	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0357	Tilbuster Solar AS20	GDA	56	370611	6637609	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0274	Tilbuster Solar Farm IF8	GDA	56	369936	6638110	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0302	Tilbuster Solar IF40	GDA	56	371471	6638316	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0308	Tilbuster Solar IF46	GDA	56	371566	6638492	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0321	Tilbuster Solar IF14	GDA	56	370192	6637846	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0322	Tilbuster Solar IF15	GDA	56	370432	6637882	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0279	Tilbuster Solar Farm IF3	GDA	56	370127	6638540	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0058	SS6	AGD	56	371590	6636500	Open site	Valid	Artefact : -	Open Camp Site	99974
	Contact	Recorders	Janice Wilson							
21-2-0031	JADS2.TSR:	AGD	56	374450	6635180	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Mr.John Appleton.Clive Ahoy							
21-1-0282	Tilbuster Solar IF19	GDA	56	370323	6638168	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0293	Tilbuster Solar IF31	GDA	56	369972	6638190	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0331	Tilbuster Solar AS7	GDA	56	370080	6638481	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0355	Tilbuster Solar AS23	GDA	56	371381	6637647	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0275	Tilbuster Solar Farm IF9	GDA	56	369788	6637649	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0303	Tilbuster Solar IF41	GDA	56	371479	6638267	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0310	Tilbuster Solar IF48	GDA	56	370170	6638750	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0320	Tilbuster Solar ST5	GDA	56	370382	6638699	Open site	Valid	Modified Tree (Carved or Scarred) : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Tilbuster ACHAR #4379
Client Service ID : 893312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
21-1-0280	Tilbuster Solar Farm IF1	GDA	56	370167	6638474	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0296	Tilbuster Solar IF34	GDA	56	370640	6639187	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0325	Tilbuster Solar Farm IF2	GDA	56	370899	6639288	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0340	Tilbuster Solar CT1	GDA	56	369889	6638215	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0347	Tilbuster Solar AS14	GDA	56	369995	6637642	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Matthew Barber.NGH Heritage - Fyshwick							
21-1-0075	SS8	AGD	56	371800	6636250	Open site	Valid	Artefact : -	Open Camp Site	99974
	Contact	Recorders	Janice Wilson							

** Site Status

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

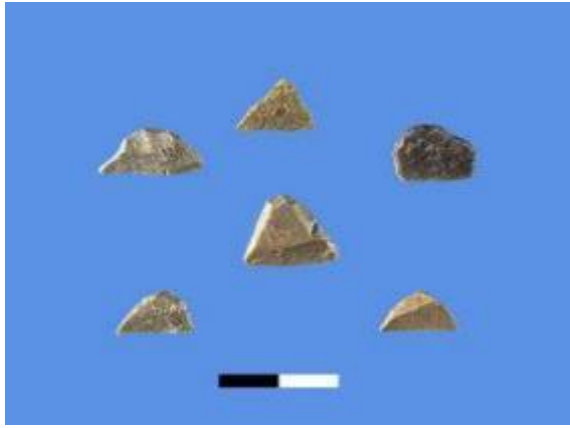
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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APPENDIX 4: ARTEFACT IDENTIFICATION

	
A retouched silcrete flake	A quartz flake
	
Microliths (scale = 1 cm)	Volcanic flakes
	
Flake characteristics (scale = 1 cm)	A mudstone/tuff core from which flakes have been removed