

Appendix D: Aboriginal Cultural Heritage Assessment Report



ACHM

AUSTRALIAN CULTURAL
HERITAGE MANAGEMENT

Aboriginal Cultural Heritage Assessment Report

Proposed Sandigo Solar Farm Aboriginal Cultural Heritage Assessment Report

Sandigo, New South Wales

By: Dr Shaun Canning and Anna Raudino

Date: 29 February 2018

BRISBANE

LEVEL 19, 10 EAGLE STREET
BRISBANE, QLD, 4000

MELBOURNE

40 MELBOURNE STREET
KILMORE, VIC, 3764

SYDNEY

LEVEL 36
1 MACQUARIE PLACE
CIRCULAR QUAY, NSW, 2000

1300 724 913

email@achm.com.au

www.achm.com.au

Client Name: Accent Environmental

Client Contact: Michael Cramer

Address: PO Box 2483, Mount Waverley, Victoria, 3149

Phone: 0417 130 078

Email: michael.cramer@accentenvironmental.com.au

Proposed Sandigo Solar Farm Aboriginal Cultural Heritage Assessment Report

Sandigo, New South Wales

By: Dr Shaun Canning and Anna Raudino

Date: 29 February 2018

Client Name: Accent Environmental

Client Contact: Michael Cramer

Address: PO Box 2483, Mount Waverley, Victoria, 3149

Phone: 0417 130 078

Email: michael.cramer@accentenvironmental.com.au

Document Control Information

Document information	
Client: Accent Environmental Client Contact: Michael Cramer Title: Proposed Sandigo Solar Farm Aboriginal Cultural Heritage Assessment Report Subtitle: Sandigo, New South Wales Our Ref: AE03 Date: 29 February 2018	

Version	Date	Details
1.7	22 February 2018	Draft
1.8	29 February 2018	Revised draft

Recipient Name	Organisation	Hardcopy	Electronic	Transmission Method	Purpose	Date

Author, Reviewer and Approver details				
Prepared by:		Date:	Signature:	
Reviewed by:		Date:	Signature:	
Approved by:		Date:	Signature:	

Ownership and Disclaimer

Ownership of the intellectual property rights of ethnographic information provided by Aboriginal people remains the property of those named persons.

Ownership of the primary materials created in the course of the research remains the property of Australian Cultural Heritage Management (Victoria) Pty Ltd.

This document remains the property of Accent Environmental. This document may not be used, copied, sold, published, reproduced or distributed wholly or in part without the prior written consent of Accent Environmental.

This document has been prepared in accordance with the brief provided by Accent Environmental and has relied upon information provided by the client, or collected during the completion of the document and under the conditions specified in the document. All findings, conclusions and recommendations contained in the document are based on the aforementioned circumstances. The document is for the use of Accent Environmental in addressing their brief and no responsibility is taken for the documents use by other parties.

The professional advice and opinions contained in this document are those of the consultants, Australian Cultural Heritage Management (Victoria) Pty Ltd, and do not represent the opinions and policies of any third party.

The professional advice and opinions contained in this document do not constitute legal advice.

Spatial Data

Spatial data captured by Australian Cultural Heritage Management (Victoria) Pty Ltd in this document for any newly recorded sites has been obtained by using hand held or differential GPS units using the GDA94 co-ordinate system.

Abbreviations

Term	Meaning
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ATSIHP	Aboriginal and Torres Strait Islander Heritage Protection Act 1984
CATSI Act	Corporations (Aboriginal and Torres Strait Islander) Act 2006
DA	Development Application
DEC	Department of Environment and Conservation (now OEH)
DECC	Department of Environment and Climate Change (now OEH)
DECCW	Department of Environment, Climate Change and Water (now OEH)
Development Site	The 231ha of land within the wider Study Area where the ground disturbing infrastructure development will occur.
DP&I	New South Wales Department of Planning and Infrastructure
DUAP	Department of Urban Affairs and Planning
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ICOMOS	International Council on Monuments and Sites
JRAHS	Journal of the Royal Australian Historical Society
LEP	Local Environment Plan
MNES	Matters of National Environmental Significance
NP&W Act	National Parks and Wildlife Act 1974 (Amendment 2010)
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	Office of Environment and Heritage
PEA	Preliminary Environmental Assessment
POM	Plan of Management
RAP	Registered Aboriginal Party
SEPP	State Environmental Planning Policy
Study Area	The 608ha of land assessed in this ACHAR
TSC Act	Threatened Species Conservation Act 1995

Acknowledgements

ACHM would like to acknowledge and thank the following people, in alphabetical order:

Allison Hawke (ESCO Pacific)
 Cedric Berge (ESCO Pacific)
 Fatma Ipek (Accent Environmental)
 Mark Saddler (RAP)
 Michael Cramer (Accent Environmental)

Executive Summary

An Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared to identify aboriginal cultural heritage values within the development site and surrounding area.

One Registered Aboriginal Party (RAP) from the Wiradjuri people was identified as part of the consultation process required under Part 6 of the National Parks and Wildlife Act 1974. The RAP accompanied the survey team during the archaeological survey of the development site.

The archaeological survey identified a total of six Aboriginal cultural heritage sites within the development site. The cultural material found within the development site is ubiquitous to most of the country and is of low scientific significance. The artefacts within the site are to be relocated in consultation with the RAP.

A written report was provided by the RAP on the cultural significance of the development site, identifying natural values such as flora and fauna, and proposing measures for their protection.

Although the project has been designed to avoid harm wherever practicable and the archaeological significance of the sites within the development site is generally low, the project's impacts will contribute to the cumulative loss of Aboriginal cultural values and archaeological sites within the local area, and the region more widely.

The full ACHAR, with the RAP's comments, will be provided at the Response to Submission stage.

Table of Contents

Ownership and Disclaimer	iii
Spatial Data	iii
Abbreviations	iv
Acknowledgements	iv
Executive Summary	v
1 Introduction	1
1.1 Roadmap of the Report.....	1
1.1.1 Aboriginal Cultural Heritage Assessment Approach and Objectives.....	1
1.2 Authorship.....	2
1.2.1 Dr Shaun Canning	2
1.2.2 Anna Raudino	2
1.3 Archaeological Fieldwork	2
2 Description of the Study Area and Development Site	3
2.1 Site Information	3
2.2 The Proposed Activity	3
2.2.1 Solar Arrays.	4
2.2.2 DC Cabling	4
2.2.3 Power Conversion Unit.....	4
2.2.4 AC Cabling.....	5
2.2.5 Step-up Transformer and Substation	5
2.2.6 Local Transmission Network.....	5
2.2.7 Battery Storage.....	5
2.2.8 System Monitoring	5
2.2.9 Internal Roads	5
2.2.10 Site Office and Staff Amenities.....	6
2.2.11 Maintenance Building	6
2.2.12 Site Power	6
2.2.13 Water and Sewerage Supply	6
2.2.14 Communications.....	6
2.2.15 Construction Materials	6
2.2.16 Site Preparation.....	6
2.2.17 Infrastructure Installation	7
2.2.18 Construction Equipment	7
2.2.19 Disturbance Footprint	7
2.3 Project justification	10
2.4 Alternatives	10
2.5 Environmental Overview.....	10

2.5.1	Geology.....	11
2.5.2	Topography / Landforms and Drainage.....	11
2.6	Post -Contact Land Use and Approvals History.....	11
2.6.1	Land Use	11
2.7	Secretary's Environmental Assessment Requirements (SEAR's).....	12
2.7.1	Secretary's Environmental Assessment Requirements (SEARs).....	12
2.8	Statement of Compliance.....	14
3	Legislative Context.....	15
3.1	Legislative Environment.....	15
3.1.1	Commonwealth Legislation.....	15
3.1.2	State Legislation	15
4	Aboriginal Consultation	17
4.1	Consultation Objectives and Approaches	17
4.2	Cultural Heritage Assessment Process for the Project.....	17
4.2.1	Four Stages of Consultation and Assessment	18
4.3	Stage 1 Consultation – Notification and Registration of Interest	18
4.3.1	Agency Notification	18
4.3.2	Public Notification	19
4.3.3	Written Notification to invite Participation in the ACHAR Process.....	19
4.4	Stage 2 - Further Consultation and Methodology Review	19
4.5	Stage 3 Consultation – Cultural Values / Impact Assessment and Development of Management Measures.....	19
4.6	Stage 4 Consultation – Draft ACHAR Review	19
4.6.1	Aboriginal Cultural Values Assessment Feedback.....	19
5	Aboriginal Cultural Heritage Context.....	21
5.1	AHIMS Search.....	21
5.2	Local Aboriginal Heritage Studies	21
5.3	Predictive Model	21
5.4	Sampling Strategy	21
5.5	Archaeological Survey	22
5.5.1	Aims.....	22
5.5.2	Methodology.....	22
5.5.3	Obstacles and/or Limitations	22
5.5.4	Archaeological Survey Summary	22
5.5.5	Results	23
5.5.6	Archaeological Site Recording Method	23
5.5.7	Site Descriptions.....	23
5.6	Significance Assessment.....	29
5.7	Definition of Cultural Significance.....	29
5.8	Nature of Cultural Significance	29
5.8.1	Aesthetic Value.....	29

5.8.2	Historic Value	29
5.8.3	Scientific Value	30
5.8.4	Social Value	30
5.8.5	Spiritual Value	30
5.8.6	Degree of Cultural Significance	30
5.8.7	Significance Ratings	31
5.8.8	Statement of Scientific Significance	33
5.8.9	Conclusions.....	34
6	Cultural Values	35
7	Historic Heritage Assessment	36
7.1	Brief History of Narrandera.....	36
7.2	Register Searches	36
7.2.1	Australian Heritage Database.....	36
7.2.2	State Heritage Register.....	37
7.2.3	Narrandera LEP.....	37
7.2.4	National Trust.....	39
7.2.5	Database Summary	39
7.3	Historic Heritage Summary	40
8	Impact Assessment and Avoidance of Harm	41
8.1	Project Rationale	41
8.2	Sustainable Development Principles.....	41
8.3	Opportunities to avoid impact.....	41
8.4	Cumulative Impact	41
9	Recommendations	42
9.1	Management Measures	42
9.1.1	The proposed management measures from the RAP	42
9.1.2	Proposed Management Measures	42
10	Bibliography	43
11	Glossary.....	44
12	Appendices.....	52
12.1	Log of Consultation Events.....	52
12.2	AHIMS Site Search Result	56
12.3	Newspaper Advertisements	58
12.3.1	Narrandera Argus: Tuesday 24th & Tuesday 31st.....	58
12.3.2	The Area News: Monday 23rd & Monday 30th	60
12.3.3	The Daily Advertiser: Monday 23rd & Monday 30th	62
12.3.4	The Riverine Grazier: Wednesday 25th and Wednesday 1st Nov.....	64
12.3.5	The Southern Riverina: Wednesday 25th and Wednesday 1st Nov.....	66
12.4	Agencies Contacted.....	68

12.5	Cultural Values Report by Mark Saddler (RAP)	69
13	Glossary.....	83

1 Introduction

The Sandigo Solar Project (the Project) is a utility scale renewable energy development with a capacity of up to 100 MW that would generate clean and renewable electricity from the power of the sun. Sandigo has been chosen due to the relatively high solar irradiance in the region, and the available capacity on the TransGrid electricity networks.

The solar farm operation will comprise up to 310,000 solar photovoltaic (PV) modules, known more commonly as 'PV Modules' or 'solar panels'. The solar panels use the same type of technology as commonly used in residential scale solar installations throughout Australia but are larger in size to those used residential applications.

The solar farm is a large infrastructure project that is expected to create up to 150 jobs during construction and up to 4 full-time and 8 part-time positions when operational.

The solar panels will generate direct current ("DC") electricity that will be inverted to alternating current ("AC") via Power Conversion Units (PCUs). Output from the solar farm would then be connected to the TransGrid supply network by underground or above ground high voltage cable to the TransGrid 132kV transmission line.

The Project is further described in Chapter 2.1, below.

1.1 Roadmap of the Report

For ease of reference, the following table provides page numbers and reference points to key issues in this report.

Key Item	Chapter
Project Overview	Chapter 2
SEAR's	Chapter 2.7.1
Consultation Processes	Chapter 4
Archaeological Values and Significance Assessment	Chapter 5.5
Cultural Values	Chapter 6
Significance Assessment	Chapter 5.6
Recommendations	Chapter 9

Table 1-1: Report Roadmap

1.1.1 Aboriginal Cultural Heritage Assessment Approach and Objectives

The cultural values and archaeological assessments culminating in the preparation of this Aboriginal Cultural Heritage Assessment Report (ACHAR) have been undertaken to ensure:

1. Extensive and meaningful opportunities for engagement and consultation with RAPs for the Project,
2. Full compliance with the Secretary's Environmental Assessment Requirements (SEARs) listed in Chapter 2.2,
3. Full compliance with the OEH (2010) Aboriginal cultural heritage consultation requirements for proponents,
4. Full compliance with the OEH (2011) Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW,
5. An Objective archaeological assessment to determine the presence/absence and scientific significance of the archaeological places within the Study Area, and
6. The identification of cultural values and the determination of cultural significance which are consistent with the guidance provided in the Burra Charter and Indigenous Cultural Heritage Management Practice Note (Australia ICOMOS, 2013).

The objectives of this report are to:

1. Present the Project's consultation methodologies and processes as agreed with the Registered Aboriginal Parties (RAPs) and utilised in this Project, and
2. Ensure that Aboriginal people have the opportunity to participate in and improve the outcomes of the assessment by:
 - (a) Providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s) within the Study Area,
 - (b) Influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s) within the Study Area,

- (c) Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the Study Area and the wider Study Area; and
- (d) Commenting on draft assessment reports before they are submitted by the proponent to the OEH.

1.2 Authorship

The following individuals have written this report.

1.2.1 Dr Shaun Canning

Dr Shaun Canning is General Manager – Victoria and the Principal Heritage Advisor of Australian Cultural Heritage Management (Vic) Pty Ltd. (ACHM), which specializes in cultural heritage assessment, expert advice, management of complex and large-scale cultural heritage management projects (primarily in relation to Australian Indigenous culture and heritage), native title advice and research, Indigenous community consultation and development matters, geographic information systems, cartography and analysis. Shaun has been involved extensively in the completion of over 500 cultural heritage management projects nationally.

Shaun holds a Bachelor of Arts degree majoring in Cultural Heritage Studies and Anthropology, a Bachelor of Applied Science (Hons) degree in Parks, Recreation and Heritage, and a PhD in Australian Indigenous Archaeology (La Trobe), specialising in predictive modelling and cultural heritage management in southern Victoria. Shaun was the recipient of a 3-year Australian Postgraduate Award Scholarship to complete his PhD. Shaun has extensive experience in Indigenous cultural heritage management in the resources, urban development, infrastructure and public land management sectors, alongside considerable experience in community consultation and Aboriginal education. Shaun has particular expertise in complex project management, and the use of GIS and predictive modelling in archaeological, cultural and natural heritage management contexts.

Shaun is a Fellow of the Australian Anthropological Society (F.AAS), a member of the International Council on Monuments and Sites (M.ICOMOS), a full member of the Australian Association of Consulting Archaeologists (M.AACAI) and a Certified Environmental Practitioner (CenvP) through the Environment Institute of Australia and New Zealand (EIANZ).

Shaun is an 'Expert Member' of the ICOMOS International Committee on Archaeological Heritage Management (ICAHM), an Honorary Research Associate of the Archaeology Program at La Trobe University, a member of the Indigenous Relations Working Group committee of the Minerals Council of Australia, and a member of the EnviroDevelop Technical Standards Development Taskforce for the Urban Development Institute of Australia (UDIA).

1.2.2 Anna Raudino

Anna began her archaeological career in Italy after completing postgraduate degrees in Archaeology and master's degrees in Prehistoric Archaeology and Museology. She has worked on a variety of prehistoric and historical sites throughout Italy before coming to Australia. Over the last seven years, she has worked extensively as a heritage consultant in Western Australia and Victoria. Anna is currently completing her PhD in the Archaeology Department at La Trobe University, Bundoora.

1.3 Archaeological Fieldwork

Anna Raudino and Madeleine Kelly completed the archaeological survey of the Study Area between 11th-13th December 2017 and 21st-24th January 2018. Anna and Maddy were accompanied during the survey by Wiradjuri RAP, Mark Saddler.

2 Description of the Study Area and Development Site

This section outlines the proposed activity and provides background information about the Study Area and the Development Site.

2.1 Site Information

Table 2-1: Site Information

Address	174 Mitchells Road, Sandigo, New South Wales, 2700
Proponent	ESCO Pacific Pty Ltd
Council	Narrandera Shire Council
Titles	Lot 33, 35, 55, 108, 109 on Plan 754550 Lot 4 on Plan 607982 Lot 70, 71 on Plan 754559 Lot 1 on Plan 802754
Total Study area	608ha
Land Use	Cropping, grazing – high level of ground disturbance
Zoning	RU1

The Project is located approximately 22 km southeast of Narrandera, and 114 km and 122 km north of Albury, within the Narrandera Local Government Area (LGA). Narrandera Shire is in the Riverina region of southwestern New South Wales and is crossed by the Sturt and Newell Highways.

The Study Area for this ACHAR is 608ha.

The Development Site where ground disturbing works will occur is 231ha (located within the wider Study Area).

The Development Site was chosen as the primary location to construct the project for a variety of reasons, while the 608ha Study Area has been assessed to understand the opportunities and constraints across that larger area in order to facilitate planning for a possible future expansion of the project.

2.2 The Proposed Activity

The Project would be built as a utility scale solar PV plant, with the solar panels mounted in rows on horizontal tracking or fixed tilt systems.

The rows of solar panels are electrically connected into arrays before being inverted from DC to AC electricity, which is the standard form of electricity used throughout Australia. Electricity is then fed, via an on-site high voltage power reticulation system, into the local electricity network through the TransGrid 132kV transmission line.

Key infrastructure items to be constructed for the Project include:

- Installation of approximately 310,000 solar panels in regular arrays;
- Each solar panel would be fixed to a metal mounting structure secured with ground piles;
- Aboveground and underground DC cabling;
- Central inverters, step up transformers, and switchgear (known as PCUs);
- Underground AC cabling would run from the PCUs to the solar substation;
- A main step up transformer and associated equipment;
- Internal vehicle access tracks;
- Perimeter safety fencing and security system;
- Supervisory control and data acquisition (SCADA) control systems;
- Site office and staff amenities, and maintenance shed;

- A permanent staff and contractor car parking area;
- A permanent all-weather access and access road; and
- Temporary site compound, lay-down area, and equipment storage areas during construction.

The following section outlines details of each of the items noted above.

2.2.1 Solar Arrays.

Solar arrays would be comprised of up to 310,000 individual solar panels which would either be multicrystalline, monocrystalline, or thin film technology. Each solar panel would be fixed to a metal mounting structure that would be piled or screwed into the ground without the need for any excavation work or use of concrete. This technique is used to minimise ground disturbance. The PV mounting structure would slowly track (in a single axis) the horizontal movement of the sun using an automated tracker unit. Alternatively, fixed tilt mounting structures may also be used. Under both scenarios the height of the fixing systems and modules would not exceed 4m in height. Figure 2-1 (below) shows a typical solar array.



Figure 2-1: Typical PV panels at a solar farm grouped in solar arrays.

2.2.2 DC Cabling

DC cabling will be utilised to connect each PV module in a string (up to 310,000 modules) to field DC boxes mounted near the solar panels. The DC boxes will be located approximately 1m off the ground between the PV arrays. DC cabling will be installed underground at a minimum depth of 1m between the DC boxes and the PCUs. DC cabling will be installed in accordance with Australian Standards and also with the requirements of Primefact 1063: Infrastructure Proposals on Rural Land (DPI, 2013).

2.2.3 Power Conversion Unit

Within each array block is a PCU which contains the central inverters, step-up transformers, and switchgear which convert DC electricity collected from the PV panels into AC electricity for connection and distribution via the TransGrid 132kV Transmission Line. The PCU (and associated equipment) is typically designed to be housed within a shipping container for easy transport and installation onsite. A PCU is typically 13m long, 2.5m wide, and 3m high. Plate 12 below shows a typical PCU with the relevant power conversion equipment installed.



Figure 2-2: Typical Power Conversion Unit.

224 AC Cabling

From the PCUs within each array block underground or above ground AC cabling will be installed to a minimum depth of 1m (if underground) and connect with the step-up transformer in the solar substation. AC cabling would be installed in accordance with Australian Standards and with the requirements of Primefact 1063: Infrastructure Proposals on Rural Land (DPI, 2013).

225 Step-up Transformer and Substation

A main step-up transformer and associated equipment in a solar substation would convert the on-site AC reticulated 33 kV electricity to 132 kV electricity. The up-converted 132kV supply would then be connected via high voltage cable to the TransGrid 132kV Transmission line where it would enter the local electricity network. High voltage cabling would be installed in accordance with Australian standards.

226 Local Transmission Network

The proposed connection point for the solar farm to the Transmission Network Service Provider (TNSP) is the 132 kV Transmission Line owned and operated by TransGrid. From the TransGrid Transmission Line, power is distributed to the national electricity grid via the Essential Energy local power network.

227 Battery Storage

The proposal will also include the potential for battery storage to be installed on site.

Solar Farms are an intermittent source of energy. Battery storage systems can be used either to smooth the fluctuating energy produced by the solar farm or to store the excess energy during low demand periods which can be subsequently used during higher demand periods or when solar energy is unavailable (e.g. at night).

The batteries can also compensate for frequency variations in the electricity grid which are caused by intermittent renewable generators as well as fluctuations in consumption. Batteries can store electricity from the grid or feed electricity into the grid in a matter of seconds and compensate for the fluctuations caused by renewables or resulting from power plant outage or irregularities in consumption.

In addition to the shifting of electricity output, energy storage on the site can contribute to:

- Improved reliability of the electricity network and reduced electricity costs associated with grid upgrades to deal with peak energy demand
- Improved sustainable outcomes by combining clean energy generation with clean energy storage.

228 System Monitoring

The entire solar farm will be monitored through a supervisory control and data acquisition (SCADA) system that will monitor the performance of all the solar equipment onsite. The SCADA system will also be capable of notifying staff onsite and remotely of system issues and failures.

229 Internal Roads

Internal vehicle access tracks would be constructed to each PCU and to the solar substation to allow for site maintenance. Onsite tracks would be constructed of compacted gravel and, where required, geotextile fabric would be laid between the soil and the gravel. Internal access tracks would be up to 5m wide to allow for the safe delivery, unloading and installation of key components such as the PCUs, PV panels, and switch equipment.

The exact position of access tracks would be determined during the detailed design phase when the solar array design is finalised. Internal access tracks are private roads designed and constructed only for construction, operation and maintenance purposes.

22.10 Site Office and Staff Amenities

A site office and staff amenities building will be constructed or installed at the site. Its dimensions would be approximately 16m long, 10 m wide, and 6m high. All visitors and contractors will be required to report to the site office upon entry to the site. Office features will include staff offices and control room. Staff amenities will include toilets, showers, a lunch room, and first aid room.

22.11 Maintenance Building

A maintenance building will be established adjacent to the site office and will provide storage for spare parts, maintenance equipment, and a workshop. The maintenance shed will be approximately 16m long, 10m wide, and 6m high.

22.12 Site Power

Diesel generators will be available for power supply through the construction period. Should low voltage power be available in the vicinity, the Project may utilise power from the existing network. Once operational, it is anticipated that the Project will utilise power generated from the solar farm rather than a grid connected service.

22.13 Water and Sewerage Supply

Temporary toilets will be available throughout the construction period for use by contractors. These toilets will be pumped out by a local licenced waste contractor. Once operational, it is anticipated that the development will collect water from building roofs and utilise onsite water storage tanks. Water would be trucked in during periods when there is insufficient rainfall to fill onsite water tanks. Sewage generated during operations will be treated by an onsite bio-cycle system, installed to comply with Narrandera Shire Council regulations and Building Code of Australia (BCA) requirements.

22.14 Communications

It is anticipated that the development will use both the mobile and fixed line networks for communication purposes. Where a connection is made to the fixed line network cabling will follow existing access tracks and road reserves to minimise ground disturbance.

22.15 Construction Materials

Most of the construction materials and components are likely to be sourced from overseas due to the specialised nature of the equipment. Materials will be transported by road from port facilities in either Sydney or Melbourne in 12-meter shipping containers. Civil materials such as aggregates, and concrete will be sourced from local suppliers. The main construction materials will include:

- Aggregates, road base, and concrete;
- Steel fencing materials;
- Steel piles and ground screws;
- Steel mounts and bolts;
- Cabling, conduit, and weather proof junction boxes;
- PV modules and mounting structures;
- Shipping containers to house central inverters;
- Weatherproof DC boxes and steel posts;
- Steel framing and colorbond sheeting for maintenance shed and site office; and
- Timber and fixtures for building fit-out.

22.16 Site Preparation

Site preparation will commence immediately across the Development Site to allow for the timely installation of roads, drainage, solar equipment, cabling, and infrastructure. Site preparation activities will generally involve the following:

- Slashing and/or removal of areas of vegetation;

- Removal of existing fencing and establishment of boundary fencing;
- Establish access points and main entry roads for delivery of machinery and equipment;
- Undertake land survey, geotechnical and other preliminary investigations; and
- Establishment of ancillary facilities including the site compound, laydown areas, and temporary contractor facilities.

2.2.17 Infrastructure Installation

The installation of infrastructure will commence directly after site preparation works are finalised. The key infrastructure activities will include:

- Levelling of dams (where required);
- Installation of internal roads and access tracks;
- Installation of drainage works and regrading of surface features (where required);
- Construction of the permanent site office, maintenance shed, and switchyard;
- Installation of the mounting structures foundations by driving steel piles pneumatically into the ground using specialist equipment (dependant on ground conditions ground screws may be used);
- Attachment of steel mounting structures to the ground piles;
- Installation of the solar panels onto the mounting structures, including tracker units;
- Installation and connection of the solar panels to the DC boxes with aboveground cabling;
- Installation of the PCUs;
- Connection of the DC boxes to the PCUs by trenching and underground cabling, and connection of the PCUs to the onsite power reticulation system and step-up transformer;
- Grid connection through the installation of underground mains from the step-up transformer to the TransGrid transmission line; and
- Commissioning and testing of PV strings, central inverters, switch equipment, step-up transformer, monitoring systems, and electrical protection systems.

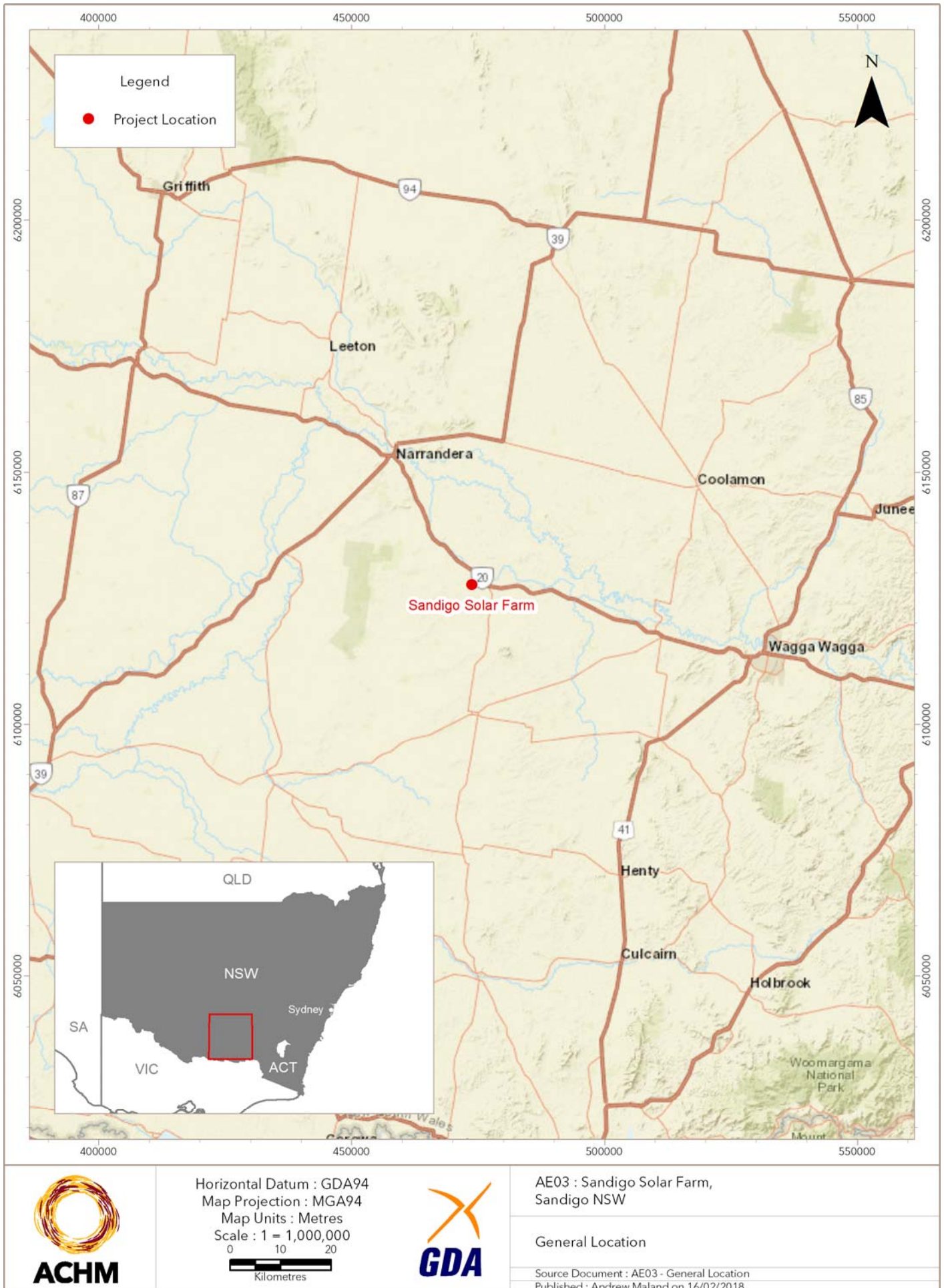
2.2.18 Construction Equipment

Construction equipment required for the establishment of the solar farm will be limited to heavy machinery and plant generally used across the wider construction industry. It is envisaged that all of this machinery and plant will be able to be sourced locally. Construction equipment to be utilised onsite will include:

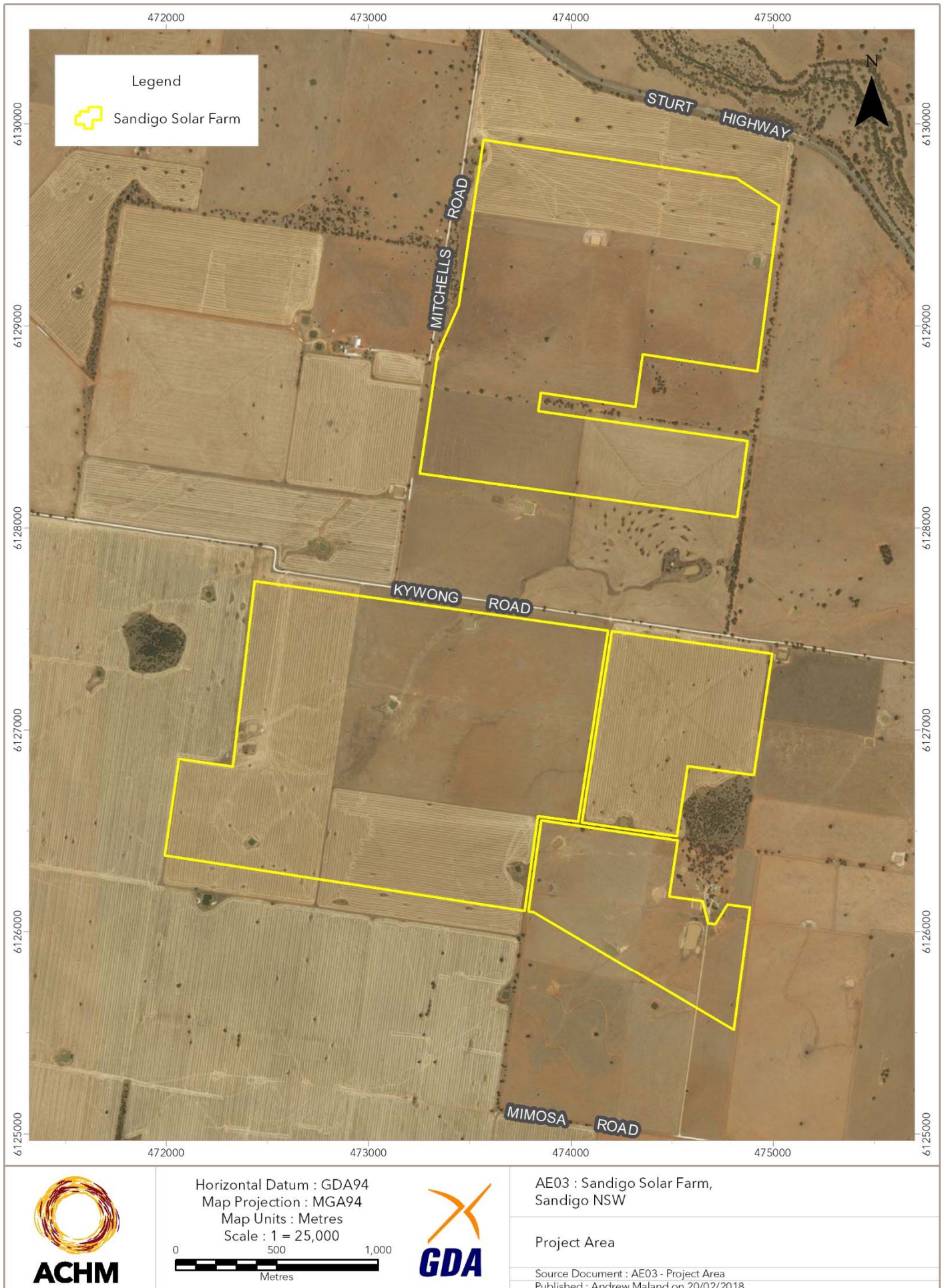
- 1 x Truck and dog for civil works;
- 1 x D6 dozer or equivalent for levelling and road development;
- 1 x 24 tonne excavator for earthworks
- 1 x grader for road development and levelling activities
- 1 x mulcher for the mulching and re-use of vegetation material onsite;
- 1 x 7 tonne vibrating roller for road construction;
- 1 x front end loader for the movement and loading of soil and aggregate materials;
- 1 x water cart for road construction and dust suppression;
- 1 x piling rig for installing PV piles;
- 1 x Franna crane for the lifting of loads, erection of steel, and movement of heavy plant;
- 2 x trenchers for the installation of underground conduits and cabling;
- 1 x portable generator for temporary site power;
- Hand power tools and equipment.

2.2.19 Disturbance Footprint

The size of the disturbance footprint is 231 ha.



Map 2-1: Regional Location of the Study Area.



Map 2-2: The 608 ha Study Area for this ACHAR.

2.3 Project justification

Since 2001, the Commonwealth Government has mandated the use of energy from renewable resources in electricity generation. In 2009, the RET scheme mandated that 20% of Australia's electricity supply was to come from renewable sources by 2020 (NSW Trade and Investment 2013). In 2011, the RET was split into two parts comprising a large-scale RET scheme and a small-scale renewable energy scheme. The large scale RET scheme created a financial incentive to establish and expand renewable power stations such as solar farms, wind farms and hydro-electric power stations and deliver the majority of the 2020 target. The target has since been adjusted and the current RET is 33,000 GWh by 2020 (Clean Energy Regulator 2017).

The RET scheme sits within the broader context of Australia's need to reduce greenhouse gas emissions to meet its commitments under the 1997 Kyoto Protocol and revised emissions target under the 2015 Paris Agreement (Commonwealth of Australia 2015). The Project would contribute Australia's greenhouse gas commitments by reducing emissions associated with energy use and contributing to the achievement of the RET. The solar farm would also be part of the transition away from fossil fuel reliance to cleaner electricity generation, and the transition to increased energy security through a more diverse energy mix.

At a State level, the Project proposal is consistent with current goals and targets for renewable energy generation in NSW. These include (NSW Trade and Investment 2013):

- supporting the achievement of the RET
- attracting renewable energy investment and projects
- building community support for renewable energy
- attracting and growing expertise in renewable energy.

Other project benefits are expected to include:

- employment opportunities during construction, including engagement of local contractors and materials and service providers
- long-term local employment opportunities over the life of the project
- contributions to local infrastructure improvements
- education and training of contractors and residents
- rent received from workers accommodated in the area.

2.4 Alternatives

The Applicant has undergone a process of constraints and opportunities analysis to identify potential project sites in NSW and other States. The Applicant originally contemplated a larger project; hence some 608 ha was archaeologically surveyed (the Study Area). The final Development Site is 231ha, which is entirely contained within the 608 ha.

This process has included consideration of factors such as:

- regulatory settings for renewable energy projects
- access to and capacity of existing energy grids
- solar irradiation levels
- potential for land acquisition
- land suitability (topography, existing land use, flood risk, zoning etc.)
- need to minimise environmental and social impacts (e.g. avoiding sensitive environments or areas of cultural heritage value).

The proposed locations for the Projects emerged as highly prospective sites for the development of a solar project, particularly due to the proximity of the two 132 kV TransGrid transmission lines and the 330 kV TransGrid transmission line. Accordingly, a decision was made to initiate pre-development investigations and activities.

2.5 Environmental Overview

A preliminary biodiversity site assessment was undertaken in October 2017 by two qualified ecologists from Ecolink Consulting. The Study Area was walked and/or driven to assess the location and quality of habitats that were present. The Study Area includes a mixture of grazed and cropped paddocks with houses and supporting

infrastructure. Native vegetation is largely absent, with scattered paddock trees the only remnants of the historic vegetation communities that once covered the Study Area. Where more intact native vegetation does occur, it is largely restricted to the boundaries of the Study Area.

Dominant crops within the Study Area include Wheat *Triticum aestivum*, Barley *Hordeum spp.* and Canola *Brassica napus*, grown in rotation, interspersed with years in which the paddocks are sowed with Rye-grass *Lolium spp.* and Lucerne *Medicago sativa subsp. sativa* for grazing. Dams occur and appear to have been lined with clay and this, in combination with regular grazing by sheep and crop rotation, has resulted in the absence of fringing or aquatic native vegetation and low ecological values are attributed to them. These dams are of low ecological value and do not provide significant habitat for any threatened species.

A number of fauna species were recorded during the field assessment, comprising native and introduced birds and mammals. No amphibians or reptiles were observed during the assessments. The state significant Grey-crowned Babbler *Pomatostomus temporalis* and White-fronted Chats *Epthianura albifrons*, which are listed as Vulnerable were the only threatened species recorded during the assessments. All the other species recorded in the Study Area are considered common to the Riverina and agricultural landscapes in southern Australia. The remnant woodlands and derived grasslands that are largely confined to the perimeters of the Study Area provide low to medium quality habitat for a range of common species. The Grey-crowned Babbler was recorded in these patches of vegetation and there is the potential that other threatened species occur in smaller numbers, at different times of the year.

Crops accounted for a large portion of the sites and provided very low-quality habitat for native flora and fauna. Grazed pasture was dominated by a range of pasture grasses and environmental weeds and accounted for most of the remaining portion of the Study Area. The grazed pasture provided low quality habitat for grassland adapted species, including White-fronted Chats, and potentially for Plains-wanderer *Pedionomus torquatus* and Spotted Harrier *Circus assimilis*, which were not recorded during the current assessment, but which may occur. However, this type of habitat is widespread within the landscape and unlikely to be limiting for any species.

Scattered paddock trees were observed throughout the Study Area which are likely to provide foraging and breeding habitat for a variety of species. These trees comprised a mixture of White Cypress Pine *Callitris columellaris*, Western Grey Box *Eucalyptus microcarpa*, Buloke *Allocasuarina luehmannii* or Yellow Box *Eucalyptus melliodora* (in descending order of dominance), over a highly modified and predominantly exotic understorey. Some of these trees are likely to possess hollows. Hollows are generally a limited resource within the landscape, however the disturbed nature of the Study Area and broader landscape means that it is unlikely that these trees support any threatened species. The species that are likely to nest in these trees are likely to be generally common within the landscape, because the removal of other ecological values in the landscape has reduced the diversity of species that persist near the Study Area.

2.5.1 Geology

The Riverina is dominated by river channels, floodplains, swamps, lakes and lunettes of Quaternary age. Modern river channels of the Riverina consist mostly of sandy soils with more saline heavy grey and brown clays towards the outer perimeter of the floodplains on the higher rarely flooded terraces (Eardley 1999). The Study Area features red-brown clays and sandy clays.

2.5.2 Topography / Landforms and Drainage

The Study Area is situated within the Murray-Darling Basin, located approximately:

- 14 km southwest of the Murrumbidgee River
- 0.3 km north of Sandy Creek
- 6 km southwest of Old Man Creek.

The Study Area is located within the Murrumbidgee Irrigation Area which is managed by Murrumbidgee Irrigation Limited.

The Study Area comprise low-lying land crossed by many ephemeral watercourses and containing constructed farm dams. The site is gently sloping, with ~20 m increase in elevation from north to south, rising away from the main watercourses. The land is in a relatively stable condition, with some evidence of erosion.

2.6 Post -Contact Land Use and Approvals History

2.6.1 Land Use

The Study Area is cleared farmland; the region having been first taken up as grazing runs in the 1840's. Today, the Study Area is used for a range of mixed farming activities, particularly broadacre cropping and grazing.

2.7 Secretary's Environmental Assessment Requirements (SEAR's)

The Project is a State Significant Development as defined under State Environmental Planning Policy (State and Regional Development) 2011 and will require development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

2.7.1 Secretary's Environmental Assessment Requirements (SEARs)

Specific to the assessment of cultural heritage impacts, the SEAR's require that the EIS must include:

- An assessment of the likely impacts of the development on Aboriginal heritage (cultural and archaeological), including consideration of the significance of these objects or declared places to Aboriginal people and having regard to the OEH's requirements;
- An assessment of the likely impacts of the development on non-Aboriginal heritage, paying particular attention to its settlement by Europeans and pastoral history and having regard to the OEH's requirements; and
- Evidence of consultation.

The archaeological and cultural values assessments presented in this ACHAR have been prepared in accordance with the SEARs (See Table 2-2) requirements, the requirements of the 2005 DEC Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment, the Community Consultation guidelines of the current Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a), and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011). It also been prepared in accordance with, and it also complies with the intent, requirements and assessment methodologies outlined in the Burra Charter (1999).

Table 2-2: Secretary's Environmental Assessment Requirements (SEAR's) for the Project (SSD 8872).

Item	Requirement	Where in this Report
Aboriginal cultural heritage	The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010) and should also be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.	Chapter 5
	Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.	The ACHAR has been prepared to comply with the current Aboriginal cultural heritage consultation requirements for proponents (DECCW 2010a), the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) to inform consultation and assessment, and also complies with the intent, requirements and assessment methodologies in the Burra Charter (1999).
	Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Chapters 5, 6, 7 and 9
Historic heritage	<p>The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:</p> <ol style="list-style-type: none"> 1. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), 2. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), 3. include a statement of heritage impact for all heritage items (including significance assessment), 4. consider impacts including, but not limited to, vibration, demolition, archaeological 	Chapter 8

	<p>disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and</p> <p>5. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.</p>	
--	---	--

2.8 Statement of Compliance

This ACHAR has been prepared in accordance with the SEAR's and in accordance with current NSW guidelines and standards.

3 Legislative Context

The following sections present the Commonwealth and State statutory controls that provide legal protection for Aboriginal cultural heritage in NSW, and that identify the approval processes for any proposed Project that seeks to impact Aboriginal cultural heritage places and objects.

3.1 Legislative Environment

The following sections present the Commonwealth and State statutory controls that provide legal protection for Aboriginal cultural heritage in NSW, and that identify the approval processes for any proposed Project that seeks to impact Aboriginal cultural heritage places and objects.

3.1.1 Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) protects matters of national environmental significance. The EPBC Act lists nine Matters of National Environmental Significance (MNES), which include world heritage sites and national heritage places, and provides for the establishment and maintenance of the National Heritage List (a list of Australia's most valued natural, Indigenous and historic heritage sites) and the Commonwealth Heritage List (a list of places of natural and cultural significance located on lands owned or controlled by the Australian Government).

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (the ATSIHP Act) provides for the declaration by the Minister for the protection of Aboriginal cultural heritage of particular significance to Indigenous Australians, generally in circumstances where State or Territory laws fail to do so. The power to make declarations is meant to be used as a last resort, after the relevant processes of the state or territory have been exhausted; no declarations have been made under the ATSIHP Act in relation to the Study Area.

Native Title Act 1993

The Native Title Act 1993 provides for the recognition and determination of native title in Australia, processes for how future activity can proceed on native title land, and to provide compensation where native title is impaired or extinguished.

Native Title Act processes for the purposes of the Project are not dealt with in this report, as Native Title has been extinguished in the Study Area.

Protection of Movable Cultural Heritage Act 1986

The *Protection of Movable Cultural Heritage Act 1986* (the PMCH Act) implements Australia's obligations under the UNESCO Pacific Convention on the Means of Prohibiting the Illicit Import, Export and Transfer of Ownership of Cultural Property. Under the PMCH Act it is unlawful to export a 'protected object' from Australia without a certificate or permit from the Environment Minister. This Act is not directly relevant to this report.

3.1.2 State Legislation

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the main piece of legislation regulating land use in NSW.

The Act is administered by the Department of Planning and Infrastructure (DP&I) and guides the process of land development, including the assessment and management of cultural heritage impacts.

National Parks & Wildlife Act 1974

The *National Parks & Wildlife Act 1974* (NP&W Act) is the primary law in NSW that provides protection for Aboriginal cultural heritage. The Act is administered by the Office of Environment and Heritage (OEH), which is within the Department of Premier and Cabinet NSW.

Under section 86(1) and 86(4) of the Act, it is an offence to harm an Aboriginal object or an Aboriginal place. The NP&W Act provides for a number of defences to prosecution for harming Aboriginal objects or places including that the person harmed the object or place in accordance with an Aboriginal Heritage Impact Permit (AHIP) or that the person exercised due diligence.

Under section 89J of the EP&A Act, an AHIP is not required, and the NP&W Act provisions prohibiting harm to Aboriginal objects and places are not applicable, to State Significant Development that is authorised by development consent.

Heritage Act 1977

The *Heritage Act 1977* provides for the protection of natural, cultural and built heritage that are of State or local heritage significance in NSW, through the register of heritage places or items on the State Heritage Register and the making of interim heritage orders and emergency orders to protect heritage items or places at risk.

The registration on the State Heritage Register or the making of interim register order places limits on what can be done to the heritage, although interim heritage orders do not apply to State Significant Development under the EP&A Act.

Archaeological relics are protected under Division 9 of the Act, which also prescribes the requirement for permits issued under sections 140 and 141 of the Act for the disturbance of relics, or under sections 60 and 63 of the Act, in cases where 'relics' are situated within sites or places listed on the State Heritage Register. Permits are issued in accordance with Heritage Council policies which ensure that disturbance of sites and 'relics' occurs in accordance with appropriate professional assessment, standards and procedures.

4 Aboriginal Consultation

Aboriginal people have rights and interests in the assessment and control of cultural heritage objects and places. In recognising these rights and interests, all parties concerned with identifying, conserving and managing cultural heritage should acknowledge, accept and act on the principles that Aboriginal people:

- are the primary source of information about the value of their heritage and how this is best protected and conserved;
- must have an active role in any Aboriginal cultural heritage planning process;
- must have early input into the assessment of the cultural significance of their heritage and its management so they can continue to fulfil their obligations towards their heritage; and
- must control the way in which cultural knowledge and other information relating specifically to their heritage is used, as this may be an integral aspect of its heritage value.

Consultation with Aboriginal people about cultural heritage places and the manner in which they should be managed is required under Part 6 of the NP&W Act. The processes of consultation are specifically outlined in the Department of Environment, Climate Change and Water publication 'Aboriginal cultural heritage consultation requirements for proponents 2010'.

This project has followed these guidelines and has also been consistent with the DECC 2005 guidelines.

4.1 Consultation Objectives and Approaches

'Consultation with Aboriginal people is an integral part of the process of investigating and assessing Aboriginal cultural heritage. Aboriginal people who hold cultural knowledge about the area, objects and places that may be directly or indirectly affected by the proposed activity must be given the opportunity to be consulted. This is done through the process of investigating, assessing and working out how to manage the harm from the proposed activity. Consultation must adhere to the requirements set out in Clause 80C of the NPW Regulation' (OEH 2011:2).

'Conservation, interpretation and management of a place should provide for the participation of people for whom the place has special associations and meanings, or who have social, spiritual or other cultural responsibilities for the place' (Australia ICOMOS 1999).

Based on the SEAR's and OEH guidelines for Aboriginal cultural heritage assessment in NSW, Aboriginal participation and involvement of in all stages of cultural heritage assessment and management has been fundamental to the Project's ACHAR.

The consultation steps employed in the cultural heritage assessment for the Project include(d):

- Advertising for Registered Aboriginal Parties in local media,
- Participation in the archaeological assessment of the Study Area,
- Facilitation of RAPs consultation on the cultural values of the Study Area, and where required, Walks on Country to identify and record Aboriginal cultural heritage values;
- Archival investigation;
- Consultation with OEH as required; and
- Assessment of the key cultural heritage issues for the Project, considering relevant guidelines, policies and plans and input from RAP(s).

As an outcome of this process, this ACHAR presents a combined understanding of Aboriginal cultural heritage values of the Study Area, as identified by RAP(s), historical research and the archaeological assessment.

This ACHAR also presents an impact assessment that incorporates the views of all RAP(s) and presents a series of management measures and recommendations that have been prepared in consultation with the RAP(s).

4.2 Cultural Heritage Assessment Process for the Project

The key stages of the cultural heritage assessment process used in the Project are derived from the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

The stages of consultation and assessment, as described in the Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) include:

- Undertaking a preliminary assessment to determine if the Project is likely to have an impact on Aboriginal cultural heritage (ACHM, 2017).
- Identifying the Aboriginal cultural heritage values associated with the area through consultation with Aboriginal people with cultural knowledge or responsibilities for country in which the proposed project occurs, written and oral research and field investigations
- Understanding of the significance of any identified Aboriginal cultural heritage values
- Assessing the impacts of the proposed development on any Aboriginal objects and Aboriginal places
- Describing and justifying the proposed outcomes and alternatives, and
- Documenting the Aboriginal cultural heritage impact assessment and the conclusion and recommendations to afford appropriate protection to any identified Aboriginal cultural values

4.2.1 Four Stages of Consultation and Assessment

Consultation consistent with the DEC (2005) and DECCW (2010a) guidelines and in accordance with the principles of The Burra Charter (Australia ICOMOS, 2013) has involved four consultation stages as detailed in the DECCW (2010a) guidelines outlined below.

Stage 1: The Applicant initiated formal notification of the proposed Project and the ACHAR process, and the opportunity for Aboriginal parties to formally register their interest in the Project via local media;

Only one individual (Mr Mark Saddler) registered for the Project.

Stage 2: The Applicant and ACHM conducted initial Project description consultation, which included presenting information on the proposed Project to the RAP who registered an interest in Stage 1. Initial consultation was followed by the Draft Aboriginal Heritage Survey Methodology for 28-day review. Consultation with the RAP involved a combination of phone, email and person-to-person consultation.

Stage 3: During Stage 3, ACHM conducted extensive archaeological fieldwork across the Study Area with the involvement of the RAP. The approach taken actively involved the RAP in the assessment of the cultural heritage values of the Study Area, the likely Project impacts, if approved, and the development of management measures.

The RAP was asked to provide comment on site specific and cultural, social, historic and aesthetic values, including the significance of archaeological and cultural sites, and values associated with flora and fauna and landscape features to inform the assessment and management measures.

Stage 4: Draft - In Progress

4.3 Stage 1 Consultation – Notification and Registration of Interest

Stage 1: The Applicant conducted consultation via formal notification of the proposed Project and the ACHAR process, and the opportunity for Aboriginal parties to formally register their interest in the Project.

Stage 1 of the DECCW (2010) consultation process aims to *'Identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and / or places in the area of the proposed Project'*.

4.3.1 Agency Notification

In accordance with Section 4.1.2 of DECCW (2010), The Applicant notified the following organisations on 18th October 2017 about the Project, and sought information on any Aboriginal people or organisations who may hold cultural knowledge relevant to determining the cultural significance associated with the Study Area:

- Office of Environment and Heritage (who responded on 24th October with a list of 4 Aboriginal parties);
- Narrandera Shire Council (who responded on the 18th October with a list of 1 RAP)
- Office of the Registrar of Aboriginal Land Rights (who responded on 26th October identifying that there were no Registered Aboriginal Owners for the Study Area);
- National Native Title Tribunal (who responded on 31st October 2017 with no further information);
- NTSCorp (who did not respond);
- Narrandera Local Aboriginal Land Council (who responded on 25th October, declining to participate in the ACHAR process due to prior commitments);
- Wagga Wagga Local Aboriginal Land Council (who did not respond);

- Leeton and District Local Aboriginal Land Council (who did not respond), and
- Griffith Local Aboriginal Land Council (who did not respond).

4.3.2 Public Notification

Advertisements were placed in the following publications seeking registrations of interest for the Project:

- Narrandera Argus: Tuesday 24th October & Tuesday 31st October
- The Area News: Monday 23rd October & Monday 30th October
- The Daily Advertiser: Monday 23rd October & Monday 30th October
- The Riverine Grazier: Wednesday 25th October and Wednesday 1st November
- The Southern Riverina: Wednesday 25th October and Wednesday 1st November

A copy of these advertisement is provided in Appendix 12.3.

4.3.3 Written Notification to invite Participation in the ACHAR Process

Following the newspaper advertisements and correspondence mentioned above, only one person registered for the Project on 24th October. No further registrations were forthcoming, despite advertising in all local media twice.

The RAP was forwarded hard copies of the Project Information and archaeological survey methodology on 21st November 2017.

4.4 Stage 2 - Further Consultation and Methodology Review

on 27th November, the RAP provided comments on the proposed survey methodology developed for the Study Area. The RAP commented that:

"The area of the proposed solar farm is an area that I have already recorded many scar trees and items in. This area is a traditional Wiradjuri walking track. Also, the fact that several old wet lands are about, and the adjacent creek is very important to my people."(Mark Saddler, Pers Comm, 2017).

4.5 Stage 3 Consultation – Cultural Values / Impact Assessment and Development of Management Measures

Stage 3 of the DECCW (2010a) consultation process relates to gathering information about the cultural significance values of an assessment area, to seek Aboriginal registrant information that will enable the cultural significance of the place to be determined, and to provide Aboriginal registrants with the opportunity to provide input on cultural heritage management options.

The RAP was provided with numerous opportunities to participate in the Stage 3 consultation program between March and September 2015.

During **Stage 3** activities included:

- Archaeological Surveys of the Study Area between 11th-13th December 2017 and 22nd-24th January 2018.
- Comments were received back from the RAP on the survey results on the 9th February 2018.

4.6 Stage 4 Consultation – Draft ACHAR Review

Stage 4 of the DECCW (2010a) consultation process relates to RAPs reviewing the draft ACHAR and providing feedback.

The Draft ACHAR was sent out to the RAP for 28-day review on the 22nd February 2018.

4.6.1 Aboriginal Cultural Values Assessment Feedback

The following details any submissions received during the 28-day review period for the cultural values assessment.

Table 4-1: Table of Stage 4 ACHAR Comments

RAP	Comments
Mark Saddler	TBA

5 Aboriginal Cultural Heritage Context

This section of the ACHAR documents the results of the Aboriginal cultural heritage survey undertaken by ACHM and the one RAP for the Project.

5.1 AHIMS Search

A Detailed AHIMS search was undertaken on 12th October 2017.

No Aboriginal sites or places are known to exist within 5 km of the Study Area prior to the survey(s) discussed below.

5.2 Local Aboriginal Heritage Studies

A search of the AHIMS database showed that there have been no Aboriginal cultural heritage studies undertaken within 10km of the Project property.

The following reports were provided by OEH and have been completed within the wider Narrandera region.

Table 5-1: Project reports held by OEH within the wider Narrandera region.

Year	Authors	Title	Distance from Study Area	Findings
2004	Navin Officer	Proposed Replacement of Five Bridges and Culverts on the Newell and Sturt Highways, near Narrandera, NSW	>25km	2 Scarred Trees
1999	Central Archaeological Heritage Services	West An archaeological survey of the proposed Colombo Creek Bridge and Colombo Creek Floodway Channel Bridge widening, 33.3 kilometres South of Narrandera	> 25km	1 Isolated Artefact
1999	Central Archaeological Heritage Services	West An archaeological survey of the proposed Gum Creek Bridge Widening, 75 kilometres west of Narrandera on the Sturt Highway	>25km	1 Scarred Tree
1998	Central Archaeological Heritage Services	West An archaeological study of the proposed optic fibre cable route between Narrandera and Euroley, South Western New South Wales.	>25km	No Sites

5.3 Predictive Model

Generally, higher density concentrations of Aboriginal archaeological objects can be expected within proximity to larger waterways. In this case, the areas closest to Sandy Creek would be expected to have the highest density of archaeological sites and/or objects. Areas in proximity to the ephemeral waterways will have lower density. Other stone artefacts can be expected to be distributed at lower density across the Study Area. The type(s) of archaeological sites and/or objects predicted to occur within the Study Area is as follows:

Table 5-2: Likelihood of particular site types occurring in the Study Area

Site Type	Highly Likely	Likely	Unlikely	Highly Unlikely
Artefact Scatters	X			
Isolated Artefacts	X			
Grindstones		X		
Scarred Trees		X		
Shell Middens			X	
Earth Mounds			X	
Human Remains			X	

5.4 Sampling Strategy

100% of the Study Area was surveyed using standard pedestrian archaeological survey techniques as described in Burke and Smith (2001).

5.5 Archaeological Survey

RAP Mark Saddler and Two ACHM archaeologists completed a pedestrian archaeological survey over two separate field trips.

A total of 608 ha was surveyed.

Trip 1 - 11-13th December 2017

Trip 2 - 21-24th January 2018



Figure 5-1: Photograph of the survey area, showing the generally good visibility.

5.5.1 Aims

The aim of the Archaeological assessment was to survey the landscape to determine the extent of the disturbance and identify whether Aboriginal cultural heritage or any areas sensitivity were present with the Study Area.

5.5.2 Methodology

The Standard Assessment conducted for this CHMP ACHAR involved an archaeological surface survey. A surface survey may be able to locate Aboriginal Places on the surface.

The specific aims of the survey were as follows:

- To determine if any Aboriginal Places were located within the Study Area, and
- To identify areas of Aboriginal archaeological sensitivity across the Study Area.

5.5.3 Obstacles and/or Limitations

Some variation in surface visibility was noted across the survey areas, however surface visibility was generally between 30 and 70% across the Study Area.

5.5.4 Archaeological Survey Summary

A Pedestrian archaeological survey of the proposed Study Area (608 hectares) was completed. The survey was conducted over two separate trips to the Study Area. The first survey period was between 10th and 14th December 2017 and the second period were between 21st and 24th January 2018.

The survey crew comprised one RAP representative (Mark Sadler) and two archaeologists from ACHM (Anna Raudino and Madeleine Kelly). The Study Area consists of four parcels (231ha; 251ha; 66ha and 60ha) which have all been surveyed. The survey was undertaken by the survey team walking linear transects (north/south – east/west) over 100% of the Study Area.

The landform within the proposed Study Area consists of predominantly flat plain, which has been disturbed by past agricultural land use. As such, few artefact concentrations and isolated artefacts were recorded during the survey. Vegetation in the area is dominated by a ground cover of native and introduced grasses, native pine trees and eucalyptus.

5.5.5 Results

The Study Area has been extensively grazed and cropped. This has resulted in extensive disturbance to the land surface and sub-surface sediments.

Six discrete archaeological sites were identified, with an additional ~20 isolated artefacts recorded within the Study Area. The artefacts identified are predominantly made from quartz with other raw materials represented in small numbers - namely silcrete and crystal quartz. A relative high proportion of artefacts were broken flakes (60%) and cores (40%). Most of the cores are rather small quartz cobbles possessing only one or two flakes removals. These technical characteristics may also suggest that only initial stages of core reduction are represented. There were no retouched tools.

It was noted during the survey that quartz pebbles and cobbles are common components of stony gravels lying on the ground surface. Therefore, these gravels are a likely source material for the quartz artefacts.

Most of the artefacts, especially the larger scatters tend to be located closest to water resources.

A total of 6 archaeological sites were recorded during the survey;

Table 5-3: Archaeological Sites recorded during the surveys.

Sites#	Description
Sandigo 02	Grindstone
Sandigo 03	Grindstone
Sandigo 05	Artefact scatter
Sandigo 06	Artefact scatter
Sandigo 07	Artefact scatter
Sandigo 08	Artefact scatter


5.5.6 Archaeological Site Recording Method


The method employed to record archaeological sites was to identify the presence / absence of culturally modified materials across the Study Area. Isolated artefacts are individual pieces with no associated materials. Artefact scatters have been identified as multiple artefacts within proximity. The boundaries of artefact scatters were delineated by a decrease in artefact occurrence and density. Cultural materials were recorded using standard digital photography, estimates of artefact numbers and densities across the site(s), sampling of artefact attributes to gauge their diversity and complexity and finally recording boundary co-ordinates with a Garmin GPS MAP 64 unit. Notes on surrounding vegetation, sediments, ground visibility, landform, water sources and irrigation channels as well as the condition of the site were also recorded.


5.5.7 Site Descriptions


Site	Sandigo 02
Description	This site includes one grindstone made from sandstone with dimensions of 6.8 cm x 4.2 cm. The grindstone is in a flatter area situated on a floodplain landform with high to moderate surface visibility (65%-70%).
Comments	The grindstone has plough damage in the centre of one surface. It was recorded in proximity to Sandigo 03 site#03 and several other isolated artefacts.




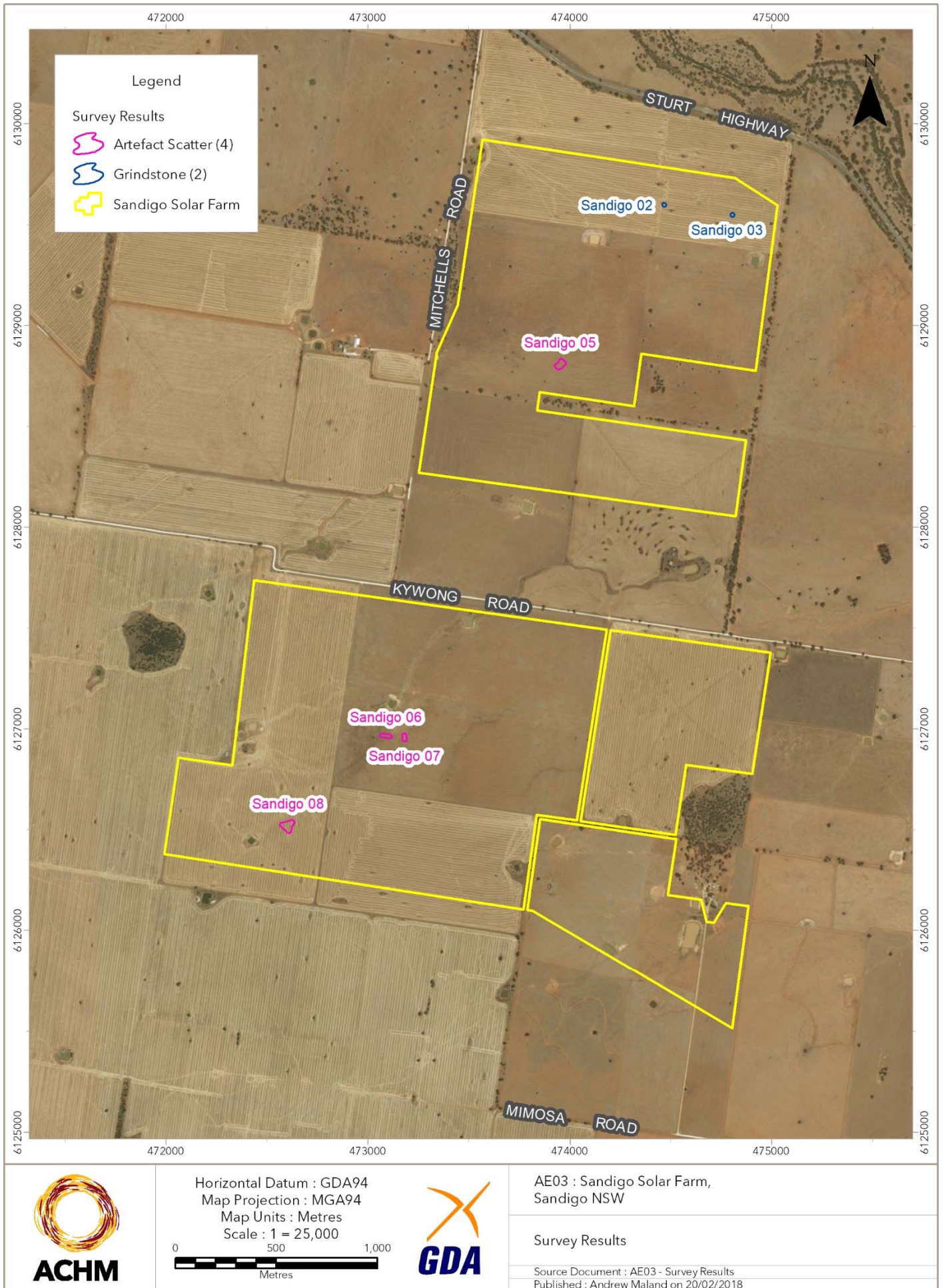
Site	Sandigo 03
Description	This site includes one grindstone with dimensions of 7.5 cm x 4.1 cm with a cracked surface. The grindstone is in a flatter area situated on a floodplain landform with high to moderate surface visibility (65%-70%).
Comments	This item recorded in proximity to Sandigo 02 and several other isolated artefacts.
	

Site	Sandigo 05
Description	The site is a flat-lying area situated on a floodplain landform with moderate surface visibility (65%-70%). Ground visibility is affected by seasonal flooding and agricultural land use. The surrounding landscape is flat with gentle gullies. Vegetation in the area is dominated by a ground cover of native and introduced grasses. Sandigo 05 is a stone tool assemblage consisting of at least 20 artefacts mainly quartz broken flakes, crystal quartz, siltstone quartz and small quartz core/ cobbles. The largest percentage of flaked and broken flake artefacts are formed on quartz (90%) siltstone (5%) and crystal quartz (5%). The largest percentage of flaked and broken flake artefacts are formed on quartz (100%).
Comments	Site has been impacted by farming activities.
	

Site	Sandigo 06
Description	Sandigo 06 is a small site situated on a floodplain landform with low to moderate surface visibility (30-50%). Ground visibility is affected by seasonal flooding and agricultural land use. The surrounding landscape is flat. Sandigo 06 is a stone tool assemblage consisting of >5 artefacts; mainly quartz broken flakes and small quartz cores. The largest percentage of flaked and broken flake artefacts are formed on quartz (100%)
Comments	Site impacted by farming activities. 

Site	Sandigo 07
Description	The site is a flat-lying area situated on a floodplain landform with low to moderate surface visibility (30-50%). Ground visibility may be affected by seasonal flooding and agricultural land use. Sandigo 06 is a stone tool assemblage consisting of > 5 artefacts mainly quartz broken flakes and a silcrete flake with dorsal flake scars. The largest percentage of flaked and broken flake artefacts are formed on quartz (90%), siltstone quartz (5%) and silcrete (5%).
Comments	Site impacted by farming activities.
	

Site	Sandigo 08
Description	The site is a flat-lying area situated on a floodplain landform with low surface visibility (30%). Ground visibility may be affected by seasonal flooding and agricultural land use. The surrounding landscape is flat. Sandigo 08 is a stone tool assemblage consisting of >5 artefacts mainly quartz broken flakes and a silcrete flake small quartz and cores. The largest percentage of flaked and broken flake artefacts are formed on quartz (80%), crystal quartz (15%) and silcrete (5%).
Comments	Site impacted through farming activities.
	 <p data-bbox="308 734 453 763">Quartz flakes</p>



Map 5-1: Location of the 6 archaeological sites recorded during the surveys (without isolated artefacts shown).

5.6 Significance Assessment

Assessing the cultural significance of places or objects is central to both understanding and managing heritage places and is a requirement of the Aboriginal Cultural Heritage Assessment reporting process. This section briefly describes the process and presents the cultural significance assessment for the Aboriginal heritage places in the Project Disturbance Area.

This section of the ACHAR specifically recognises that Aboriginal people are the primary determinants of information in regard to the significance of cultural heritage objects, places or values. Indeed, this primacy is explicitly recognised by the Office of Environment and Heritage:

OEH recognises and acknowledges Aboriginal people as the primary determinants of the cultural significance of their heritage. In recognising these rights and interests, all parties concerned with identifying, conserving and managing cultural heritage should acknowledge, accept and act on the principles that Aboriginal people:

- *Are the primary source of information about the value of their heritage and how this is best protected and conserved,*
- *Must have an active role in any Aboriginal cultural heritage planning process,*
- *Must have early input into the assessment of the cultural significance of their heritage and its management so they can continue to fulfil their obligations towards their heritage, and*
- *Must control the way in which cultural knowledge and other information relating specifically to their heritage is used, as this may be an integral aspect of its heritage value.*

5.7 Definition of Cultural Significance

Cultural significance can be associated with or attached to any place, concept or object by any group or groups of people and is embodied in the place itself (i.e. its fabric, use, associations, and meanings, relationship to other concepts, places or objects). Place means any geographically defined area, and may include features, elements, objects, spaces and views. The place may have tangible (physically identifiable) or intangible (conceptual ideas or spiritual beliefs) values or a combination of both, or a range of values held by different individuals or groups. Places can be large or small, discrete or widespread. The concept of place can embody all the physically identifiable elements of a landscape (i.e. historical, indigenous or natural heritage values). Place may also exist in the intangible realm, where conceptual or spiritual values are held over places or landscapes with little observable physical evidence or fabric (Australia ICOMOS, 2013).

5.8 Nature of Cultural Significance

The nature of cultural significance is determined by understanding the interrelationship of the following core values, and the constituent factors assessed. These values are:

5.8.1 Aesthetic Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular aesthetic characteristics. Such as:

- Importance to a community for aesthetic characteristics.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or
- Otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.

5.8.2 Historic Value

A concept, place or object can have cultural significance if it is significant in exhibiting particular historic characteristics. Such as:

- It is significant in the evolution or pattern of the history of a locality, region, state, nation or people.
- Importance for the density or diversity of cultural features illustrating the human occupation and evolution of the locality, region, state or nation.
- Importance in relation to an event, phase or activity of historic importance in the region, state or nation

- Importance for close association with an individual or individuals whose life, works or activities have been significant within the history of the region, state or nation
- Importance as an example of technical, creative, design or artistic excellence, innovation or achievement in a period.

5.8.3 Scientific Value

A concept, place or object can have cultural significance if it is significant in exhibiting scientific characteristics. Such as:

- It has demonstrable potential to yield information that will contribute to an understanding of the natural or cultural history of the region, state or nation
- Importance for information contributing to a wider understanding of natural or cultural history by its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the locality, region, state or nation.
- It is significant in demonstrating a high degree of technical innovation or achievement.

5.8.4 Social Value

A concept, place or object can have cultural significance if it is significant in exhibiting social characteristics. Such as:

- Association with a community or cultural group for social, cultural, educational or spiritual reasons.
- Importance as a concept, place or object highly valued by a community or cultural group for reasons of social, cultural; religious, spiritual, aesthetic or educational associations.
- Importance in contributing to a community's sense of place and/or identity.

5.8.5 Spiritual Value

The Draft 2013 ICOMOS practice note 'Understanding and Assessing Cultural Significance' defines 'spiritual value' as the *'intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations and be expressed through cultural practices and related physical structures'* (ICOMOS, 2013: 1).

The physical qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place and purpose in the world, particularly in relation to the spiritual realm. The term spiritual value was recognised as a separate value in the 1999 Burra Charter (ICOMOS, 1999). It is still included in the definition of social value in the Commonwealth and most state jurisdictions. Spiritual values may be interdependent on the social values and physical properties of a place and its surrounding landscape.

A place may exhibit spiritual values if:

- The place contributes to the spiritual identity or belief system of a cultural group
- The place is a repository of knowledge, traditional art or lore related to spiritual practice of a cultural group
- The place is important in maintaining the spiritual health and well-being of a culture or group
- The physical attributes of the place play a role in recalling or awakening an understanding of an individual or group's higher purpose and place in relation to the spiritual realm.
- The spiritual values of the place find expression in cultural practices or human-made structures, or inspire creative works.

5.8.6 Degree of Cultural Significance

Once the nature of the cultural significance of a place or object is understood, it is essential to understand the extent or degree of that cultural significance. This is typically established by considering:

Rarity

A concept, place or object can have cultural significance if it:

- Demonstrates or possesses rare, uncommon or endangered aspects of the cultural heritage of a locality, region, state or nation.

- Demonstrates or possesses rare, endangered or uncommon structures, landscapes or phenomena.
- Demonstrates or possesses a distinctive way of life, custom, process, land-use, function or design no longer practiced in, or in danger of being lost from, or of exceptional interest to, the region, state or nation.

Representativeness

A concept, place or object can have cultural significance if it:

- Is significant in demonstrating the characteristics of a class of cultural concepts, objects, places or environments in the State.
- Is important in demonstrating the principal characteristics of a range of concepts, objects, landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Is important in demonstrating the principal characteristic of the range of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the locality, region, state or nation.

Condition, Integrity and Authenticity

- Condition refers to the current state of the concept, place or object in relation to each of the values for which that concept, place or object has been assessed. Condition reflects the cumulative effects of management and environmental events.
- Integrity is a measure of the likely long-term viability or sustainability of the values identified, or the ability of the concept, place or object to restore itself or be restored, and the time frame for any restorative process.
- Authenticity refers to the extent to which the fabric of the concept, place or object is in its original state.

5.8.7 Significance Ratings

For the purposes of this discussion, the criteria for assessing the significance of archaeological sites are grouped under three main headings: social, scientific and historical values. While there is some interchangeability between some categories, as in the case of rarity and representativeness, most of the individual criteria fall into one of these broad groups.

Depending on the criteria grouping, a different approach to rating individual values is used. For example:

- Social and historical significance are rated in a qualitative sense, in terms of whether they apply (present) or do not apply (absent) in each instance. These determinations will be supported by the results of the background studies and consultation procedure. In some instance it may be possible to state whether the value is particularly high or low, though in most cases it will simply be rated as present.
- Scientific significance is rated in a quantitative sense, with an overall value of high, moderate or low assigned on the basis of a comparative assessment of various factors (e.g. rarity, condition, contents and scale) at a local, regional, State or national level. The combination of different criteria relating to each site, place or item will be reviewed in order to produce a Statement of Significance. This can be a complex process, and for the majority of sites and places that are not under threat and are of relatively low importance, a summary statement or comparative table will be provided in lieu of a full Statement of Significance.
- Spiritual and/or cultural significance is sought from the relevant RAP's via the consultation process.

Scientific Significance

Scientific significance is assessed by examining the research potential and representativeness of an archaeological site. This is achieved by assessing the value the site or place has for scientific investigation, through an analysis of the site condition, rarity, contents and structure. The system advocated here is based on approaches originally developed by Bickford and Sullivan (1994) and Bowdler (1984), and commonly used in archaeological significance assessments throughout Australia.

This system may be applied differently depending on the occurrence of disparate site types. As an example, it is generally not possible to rate both scarred trees and other types of archaeological site together, though the same criteria may be applied to each site type separately. Research potential is assessed by examining site contents and condition. Site contents refer to all cultural materials and organic remains associated with human activity at a site. Site contents also refer to the site structure - the size of the site, the patterning of cultural materials within the site and the presence of any stratified deposits. Site condition refers to the degree of disturbance to the contents of a site at the time it was recorded.

Representativeness refers to the regional distribution of a site type. It is assessed on whether the site is common, occasional or rare in each region. Assessments of representativeness are subjectively biased by current knowledge of the distribution and numbers of archaeological sites in a region. This varies from place to place depending on the extent of previous archaeological research. Consequently, a site that is assigned low significance values for contents and condition, but a high significance value for representativeness, can only be regarded as significant in terms of current knowledge of the regional archaeology. Any such site should be subject to further re-assessment as additional archaeological research is carried out. Assessment of representativeness also considers the contents and condition of a particular site. For example, in any region, there may only be a limited number of sites of any type that have suffered minimal disturbance. Such sites would therefore be given a high significance rating for representativeness, although they may occur commonly within the region.

Table 7-2: Significance assessment criteria for assessing the scientific significance of archaeological sites.

Assessment Criteria		Rank	Definition
1	Site Contents	0	No cultural materials remaining or materials of questionable provenance.
		1	Site contains a small number or limited range of cultural materials with no evidence of association or stratification.
		2(a)	A larger number, but limited range of cultural materials, and/or
		2(b)	Some intact stratified deposit remains.
		3(a)	A large number and diverse range of cultural materials; and/or
		3(b)	Largely intact stratified deposit; and/or
		3(c)	Surface spatial patterning of cultural materials that still reflect the way in which the cultural materials were laid down.
2	Site Condition	0	Site has either been entirely destroyed or is in a highly deteriorated state with very few cultural materials remaining.
		1	Site in a deteriorated condition with a high degree of disturbance, though with some cultural materials remaining.
		2	Site in a fair to good condition, but with some disturbance.
		3	Site in an excellent condition with little or no disturbance. For surface artefact scatters this may mean that the spatial patterning of cultural materials still reflects the way in which the cultural materials were laid down.
3	Representativeness	0	Common occurrence both in the local environment and throughout the region as a whole
		1	Occasional occurrence, either within the study locality or the region as a whole
		2	Rare or previously undocumented site type within the region

Overall scientific significance ratings for sites, based on a cumulative score following assessment of site content, site integrity and representativeness as shown in Table 7-3, below.

Table 7-3: Significance scoring based on the criteria outlined in this section, and the attributes listed in numerical order.

Score	Significance
1-4	Low scientific significance
5-7	Moderate scientific significance
8-9	High scientific significance

Assessing Historic Significance

Historical value can apply to a site, place or item that is associated with a historical event, individual, technical achievement, or be especially representative of a historical theme. As with social significance, this value is noted in a qualitative sense as to whether it applies or does not apply, with a supporting discussion outlining the specific reasons. Again, the value may be noted as being high in some instances.

Assessing Social Significance

Social significance represents the value of a place to an individual or community group that transcends the perceived rarity, research potential or condition of the fabric of a place or site. Social value is defined by the Burra Charter as:

“...the qualities for which a place has become a focus of spiritual, political, national, or other cultural sentiment to a majority or minority group” (Marquis-Kyle & Walker 1992, 73).

Unlike the determination of the other values, which are effectively expert based, the assessment of social value is driven by the relevant community or communities. The social significance placed on an archaeological site is generally unquantifiable in scientific terms, but will instead reflect elements of cultural, aesthetic and educational values.

Cultural values are an especially important aspect of social significance that applies to both Aboriginal and non-Aboriginal places and archaeological sites. These may reflect community values not only in regard to individual sites and groups of sites but also in terms of the general landscape, particularly where this is relatively undisturbed. Cultural values do not necessarily correspond to the scientific values placed on individual sites, but will reflect the cultural, educational and aesthetic values of such locations. These values may include ancestral or traditional associations, concern over environmental issues, possible uses of sites for interpretation and education and the importance of highly visible sites as tangible markers of Aboriginal or non-Aboriginal occupation in a region. Aesthetic value is defined in the Burra Charter as ‘..a certain quality of a place which provides a sensory experience to a person participating in or viewing a landscape, of such strength that it has a positive impact on human thought’. (Marquis-Kyle & Walker 1992: 73).

Educational value is a reflection of the potential for a site to assist in illustrating particular themes or concepts in both school and wider community education programmes. In some specialist studies, these values may be quantified (e.g. the assessment of scenic landscapes; cf. Leonard & Hammond 1984; Williamson 1986). Although this adds one dimension of assessment in terms of an expert appraisal; these quantifiable assessments complement qualitative assessments in that the former does not replace or take precedence over the latter.

5.8.8 Statement of Scientific Significance

This section includes the statements of scientific significance for the 7 newly recorded Aboriginal cultural heritage sites and 85 isolated artefacts, based explicitly on the methodology discussed in the preceding section. It should be noted that the following statements of significance are not an assessment of the cultural significance of the sites to traditional owners, but rather are an assessment of the research or scientific values of the sites.

Table 5-4: Scientific significance of the cultural materials located within the Study Area.

Site	Site Type	Content	Condition	Representativeness	Rarity	Overall Score	Significance
Sandigo 02	Grindstone	1	1	1	0	3	Low
Sandigo 03	Grindstone	1	1	1	0	3	Low
Sandigo 04	Artefact Scatter	1	1	1	0	3	Low
Sandigo 05	Artefact Scatter	1	1	1	0	3	Low
Sandigo 06	Artefact Scatter	1	1	1	0	3	Low
Sandigo 07	Artefact Scatter	1	1	1	0	3	Low
Isolated Artefacts	Isolated Artefacts	1	1	1	0	3	Low

5.8.9 Conclusions

A total of 6 discrete Aboriginal cultural heritage sites and 85 isolated artefacts were recorded within the Study Area. The cultural material found within the Study Area is ubiquitous to most of the country and is not considered rare. Stone artefacts are known to occur in varying densities throughout the region.

The Study Area has been actively farmed for at least the last 100 years, and as such is a heavily modified and disturbed landscape. There is no potential for the presence of *in-situ* sub-surface deposits requiring additional examination.

The cultural material identified within the Study Area is of low scientific significance.

6 Cultural Values

The following information was provided verbatim by RAP Mark Saddler in a written report provided to ESCO Pacific on 9th February 2018.

On my site inspection on beginning on the 11/12/2017 I felt an overwhelming sense of pain and lose. This area was inhabited by Wiradjuri people and was a place where many camped and lived over an extended period of time. It is also a place where many Wiradjuri people were killed and forced to move away from. To the South of the area is a creek known as "Poison Water Hole Creek" Also not to far away is an island in the river called "Massacre Island" Both of these places cause pain and lose for my people.

With regards to native animals and plants in this area, I noticed many species of bird including Grass Parrots, Willy Wag Tail, Eagles, Rainbow Lorikeet, Galah, Cockatoo, White Winged Chough, Pipit and Quail to name a few. On the day of the 24th January a very large Madhan Gugaa (Tree Goanna) was also seen by the survey crew as it was climbing one of the remaining trees in this area. The area also has good regrowth of salt bush, some native water plants and young tree suckers. This area needs to have exclusions zones and habitat left undisturbed. GPS 474241 6126501

The dams on the site, that were once old creeks and wetlands, also contains many water animals including Yabby, small fish, Turtles, Dragon Flies and a large array of Butterflies and bees.

This area has been heavily impacted by cattle and machinery. Many Aboriginal sites and items have been damaged and driven over, this needs to stop, and actions taken to stop this from happening again. Exclusion zones are needed around the scar trees, around the remaining habitat and trees and extra care and exclusions zones around the two areas that have many excellent quality artefacts remaining on the ground. Both these sites need to have test pits dug into them to determine the extent of the artefacts that are on and below the ground.

Both the sites that I have surveyed and want to re-inspect with test pits are shown on the page 12 in pictures 1 and 2.

I would also ask for the planting of native trees that would enhance the area for both people and bird life. Some Bull Oak trees would also add to the area and may assist in the habitat and return of the Glossy Black Cockatoo.

When construction does start I would like to ask that I could be again involved in any ground works with regards to cultural assistance on site.

As this report has been asked for today the 5th Feb 2018 by Cedric, some AHIMS site recordings are still not on here due to the slowness of AHIMS Data Base, so ESCO Pacific need to do their due diligence by getting access to the full data from AHIMS by doing a full search via AHIMS site.

Also, items that are removed to be tagged and examined must be returned to site with a smoking ceremony to take place to ensure the safe return of items and our spirits.

A full copy of this report is shown as Appendix 12.5.

7 Historic Heritage Assessment

Narrandera is a vibrant town with a rich post-Contact history, focused on the Murrumbidgee River which passes through the town. The first European credited with passing through the area was Captain Charles Sturt in 1829. The area now known as Narrandera is located within the lands of the Wiradjuri people.

7.1 Brief History of Narrandera

- Prior to European occupation the area was inhabited by the Wiradjuri People who are believed to have known the area as '*Narrungdera*'.
- The explorer Charles Sturt passed through the district in 1829. He was probably the first European to do so.
- Buckingbong station, south of the river, was taken up in 1839 by the Jenkins family.
- In 1843 Edwin Flood took up the 76,800-acre Narrandera Run. It was the first local property north of the river.
- By the end of the 1840s drovers were diverting their stock south to the new goldfields. The Narrandera Run was an ideal location to cross the Murrumbidgee River.
- After a major flood in 1852, John Dill built a punt to cross the Murrumbidgee and there was agitation to build a village on the northern side of the river.
- The government surveyed both the north and south banks of the Murrumbidgee. There was an argument as to which side would be better for the town.
- The village was proclaimed in 1863.
- By 1865 the Australian novelist, Rolf Boldrewood, who was living in the area, described the settlement as "*two hotels, a small store and a large graveyard*".
- The population of Narrandera had reached 142 by 1871.
- The railway reached the town in 1881.
- The combination of railhead and steamer port made Narrandera the most important town in the Riverina from 1881 to 1914 when the population reached about 3,000.
- The town was gazetted as a borough in 1885.
- The drought of the early 1890s stalled expansion and Narrandera's industrial base declined.
- By 1914 the town's population had reached 3,000.
- The development of the Murrumbidgee Irrigation Area in the 1900's brought fertility to the plains and diversified primary production to include rice, citrus, cereals, stone fruits, wool, lucerne, fat lambs and poultry.
- By 1940 Narrandera was being used as a training camp for young pilots.
- The town celebrated its centenary in 1985.

7.2 Register Searches

7.2.1 Australian Heritage Database

There are nine properties on the Australian Heritage Database located in Narrandera. None of these are within 10 kilometres of the Study Area. There are no listings for the Sandigo area.

Table 7-1: Australian Heritage Database listings within the wider Narrandera area.

Place	Status
Dry Lagoon Area Sturt Hwy, Narrandera	(Indicative Place) Register of the National Estate (Non-statutory archive)
Narrandera Showground Victoria Ave, Narrandera	(Indicative Place) Register of the National Estate (Non-statutory archive)
St Johns Uniting Church and Hall Cadell St, Narrandera	(Indicative Place) Register of the National Estate (Non-statutory archive)
CBC Bank (former) 142 East St, Narrandera	(Registered) Register of the National Estate (Non-statutory archive)
Narrandera Courthouse and Police Station Group Larmer St, Narrandera	(Registered) Register of the National Estate (Non-statutory archive)
Narrandera Nature Reserve	(Registered) Register of the National Estate (Non-statutory archive)
Narrandera Post Office 140 East St, Narrandera	(Registered) Register of the National Estate (Non-statutory archive)
Narrandera Rail Bridge	(Registered) Register of the National Estate (Non-statutory archive)
Railway Station and Station Masters Residence Whitton St, Narrandera	(Registered) Register of the National Estate (Non-statutory archive)

7.2.2 State Heritage Register

There are five places listed on the State Heritage Register at Narrandera.

Table 7-2: State Heritage Register places in the Narrandera area.

Item name	Address	Suburb	LGA	SHR
Berembed Weir and Site	Murrumbidgee River	Narrandera	Narrandera	00957
Derrendi Cottage	30-32 Twvnam Street	Narrandera	Narrandera	00441
Narrandera rail bridge over Murrumbidgee River	June-Hav railwav	Narrandera	Narrandera	01050
Narrandera Railway Station and vard group	Whitton St (Newell Highway)	Narrandera	Narrandera	01209
Narrandera Showground Industrial Hall	Elizabeth Street	Narrandera	Narrandera	01952

None of these places are in or near the Study Area. There are no listings for the Sandigo area.

7.2.3 Narrandera LEP

There are 73 local heritage places listed in the Narrandera LEP.

One of these is located at Sandigo (Sandigo Hall), however it is approximately 6 kms north-west of the Study Area and will not be impacted.

Table 7-3: Places listed in the Narrandera LEP.

Item Name	Address	Description	Significance	Item No
Narrandera Public School	Adams Street	Lot 5, Section 44, DP 758757	Local	I067
Catholic convent	Audley Street	Lot 1, DP 911685	Local	I033
Catholic presbytery	Audley Street	Lot 9, Section H, DP 613	Local	I034
St Joseph's Primary School	Audley Street	Lot 1, DP 911685	Local	I086
St Mel's Catholic Church	Audley Street	Lot 11, Section H, DP 613	Local	I087
Residence (former Bushman Arm's Hotel)	78 Audley Street	Lot 1, DP 970904	Local	I081
Argus printing plates, held by Process Printers	92 Audley Street	Lot 3, DP 207770	Local	I027
Residence—Allowrie	101 Audley Street	Lot 2, DP 225506	Local	I078
St Thomas' Rectory	124 Audley Street	Lot 9, Section 18, DP 758757	Local	I089
Bishop's house—Maranoa	127 Audley Street	Lot 2, Section 23, DP 758757	Local	I030
Residence	129 Audley Street	Lot 11, DP 1059243	Local	I077
Christian Revival Crusade (former Plaza Theatre)	31–35 Bolton Street	Lot 2, DP 601595	Local	I037
Baptist church	32 Bolton Street	Lot 6, DP 2514	Local	I028
Buckingbong Homestead and outbuildings	Buckingbong Road	Lot 1, DP 754540	Local	I031
Buckingbong woolshed	Buckingbong Road	Lot 1, DP 754540	Local	I032
Grandstand	Cadell Street (Narrandera Park)	Lot 1, Section 45, DP 758757	Local	I052
St John's Uniting Church	Corner Cadell and Douglas Streets	Lot 5, Section 65, DP 758757	Local	I085
Former Masonic Lodge	31 Cadell Street	Lot 1, DP 902203	Local	I049
Narrandera District Hospital group	Douglas Street	Lot 1, Section 64, DP 758757	Local	I063
Mon Repos (former Murrumbidgee Club)	43 Douglas Street	Lot 3, Section 65, DP 758757	Local	I060
Residence (former Farrelle residence)	53 Douglas Street	Lot 1, Section 65, DP 758757	Local	I082
Ambulance station	18 East Street	Lot 4, DP 14449	Local	I024
Former London Bakery	50 East Street	Lot B, DP 33358	Local	I048
J & T Auto Spares	56 East Street	Lot C, DP 408466	Local	I056
Narrandera Toy and Hobby shop	68 East Street	Lot 3, DP 17355	Local	I070
Charles Sturt Hotel—stables at rear	77 East Street	Lot A, DP 402905	Local	I036
Former Commonwealth Bank	78 East Street	Lot 1, DP 115977	Local	I046
Commercial building	88–90 East Street	Lot 1, DP 129311	Local	I040
Bendigo Bank (former Bank of NSW)	94 East Street	Lot A, DP 314393	Local	I029
Coles supermarket (former Richards Store)	103 East Street	Lot 1, DP 115593	Local	I038
ANZ Bank	126 East Street	Lot 1, DP 929881	Local	I026
Commercial building	132 East Street	Lot 1, DP 103853	Local	I039
Royal Mail Hotel	137 East Street	Lot 1, DP 541131	Local	I083
Narrandera Post Office	140 East Street	Lot 2, DP 791067	Local	I066
Narrandera Council Chambers	141 East Street	Lot 1, DP 170147	Local	I062
National Australia Bank	142 East Street	Lot C, DP 404206	Local	I071
Jonsen's Building	149–157 East Street	Lot A, DP 33869	Local	I057

Murrumbidgee Hotel	159 East Street	Lot 1, DP 912606	Local	I061
Ensign Now and Then	164 East Street	Lot A, DP 316057	Local	I045
Riverina Motorcycles (former garage)	178–186 East Street	Lot 1, Section 5, DP 1008	Local	I047
Narrandera Hotel	185 East Street	Lot 2, DP 863204	Local	I065
Residence	49 Elwin Street	Lot 1, Section 67, DP 758757	Local	I076
Edenholme Homestead	420 Irrigation Way	Lot 1, DP 576839	Local	I043
Cemetery (Forestry Commission)	Lake Drive	Lot 4, DP 444708	Local	I035
Midgeon woolshed	Lake Midgeon	Lot 1, DP 1091802	Local	I059
Courthouse	Larmer Street	Lot 5, Section 18, DP 758757	Local	I041
Antique Corner	126 Larmer Street	Lot 1, DP 781814	Local	I025
Police Station group	129, 131 and 133 Larmer Street	Lot 4, Section 18, DP 758757	Local	I073
Former Royal Hotel	134 Larmer Street	Lot 6, DP 79876	Local	I051
St Thomas' Anglican Church	141 Larmer Street	Lot 2, Section 18, DP 758757	Local	I088
Hit or Miss Hotel	154 Larmer Street	Lot 1, DP 195339	Local	I055
Remains of PS Wagga Wagga	Murrumbidgee River		Local	I074
Rail bridge over Murrumbidgee River	Murrumbidgee River		State	I075
Former Oakbank Brewery	Old Brewery Road	Lot 1, DP 318449	Local	I050
The Gunya Boy Scouts Hall	9 Sturt Street	Lot 12, DP 36178	Local	I093
Residence (former AMP building)	13–15 Twynam Street	Lot 1, DP 576716	Local	I080
Emergency services building (former Mechanics' Institute)	17–21 Twynam Street	Lot 2, Section 39, DP 758757	Local	I044
Narrandera Fire Station	23 Twynam Street	Lot 12, Section 39, DP 758757	Local	I064
Lethbridge Collection (held by Parkside Museum)	28 Twynam Street	Lot 1, DP 115969	Local	I058
Derrendi	30–32 Twynam Street	Lot 6, DP 123559	Local	I042
Residence—Egerton	42 Victoria Avenue	Lot 2, DP 16812	Local	I079
Westaway	88 Victoria Avenue	Lot B, DP 337870	Local	I094
Normanville	98 Victoria Avenue	Lot 7, DP 511791	Local	I072
Hankinson Memorial Fountain	Victoria Square (Memorial Gardens)	Lot 80, DP 1140946	Local	I054
South African War Memorial	Victoria Square (Memorial Gardens)	Lot 80, DP 1140946	Local	I084
Steel and brick water tower	Watermain Street	Lot 1, DP 611805	Local	I092
Narrandera Railway Station	Whitton Street		Local	I068
Narrandera Railway Yards	Whitton Street	Lot 2, DP 808460	Local	I069
Station Master's Residence	Whitton Street	Lot 1, DP 808460	Local	I091
Hall's Hotel	Corner Whitton and East Streets	Lot 1, DP 387297	Local	I053
Star Hotel	64 Whitton Street	Lot 1, DP 115975	Local	I090
Sandigo Hall	7499 Sturt Highway	Lot 118, DP 754550	Local	I095

7.2.4 National Trust

There are no places on the National Trust Register in or near Narrandera or Sandigo.

7.2.5 Database Summary

There are no known places of historic heritage value or significance within or intersecting the Study Area.

7.3 Historic Heritage Summary

There are no known places of historic heritage value or significance within or intersecting the Study Area. It is considered highly unlikely that any undiscovered places of historic heritage value or significance will occur within the Study Area.

8 Impact Assessment and Avoidance of Harm

8.1 Project Rationale

The OEH (2011) guidelines state that an ACHA report must include a '*justification for any likely harm, including a discussion of any alternatives considered for the proposal. This must demonstrate how all feasible options to avoid or minimise harm were considered*'.

The Applicant presented information on the Project to the RAP during the ACHA consultation process and have undertaken an ongoing review of designs. In developing the footprint and the design of the disturbance of the proposed Project, The Applicant has considered diverse options for the layout of the Project infrastructure to optimise the Project's final design mindful of site constraints and potential impacts.

Within the Development Site, harm cannot be avoided to the artefact scatters and isolated artefacts identified during the archaeological assessment.

8.2 Sustainable Development Principles

This ACHAR has considered the impact of the proposed Project on the known Aboriginal objects of the Development Site and places external to it, and the range of cultural significance values associated with the Study Area.

Impact assessment has included consideration of proposed direct impacts, indirect impacts and cumulative impacts to archaeological and /or cultural places and ecologically sustainable development (ESD). OEH (2011) requires that proposed development activities be discussed in the context of ESD, in particular the principles of the precautionary approach and incorporating intergenerational equity in the assessment.

8.3 Opportunities to avoid impact

The Development Site has been adjusted to avoid a scarred tree which occurs outside the north-western boundary of the Project. Harm cannot be avoided to the 6 archaeological sites described in Chapter 5.5.5.

8.4 Cumulative Impact

Though the Project has been designed to avoid harm wherever practicable and the archaeological significance of the sites within the Development Site is generally low, the Project's impacts will contribute to the cumulative loss of Aboriginal cultural values and archaeological sites within the local area, and the region more widely.

9 Recommendations

As discussed in detail in Chapter 5, harm cannot be avoided to the surface archaeological materials located within the Development Site.

9.1 Management Measures

There are two types of management measures that may result from the assessment process:

1. On-Site Management Measures, and
2. Off-Site Management Measures

On-site management measures may include actions such as archaeological salvage, protective fencing, artefact analysis, curation arrangements, induction programmes and the development or updating of an ACHMP. Off-site management measures may include actions such as community development programmes, scholarships or educational activities. In this case, management measures will be restricted to on-site actions.

9.1.1 The proposed management measures from the RAP

The RAP suggested that two of the artefact scatters found during the archaeological survey should be test excavated. However, this cannot be supported, given the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010). The sites in question are surface scatters with no likelihood of having in situ sub-surface deposits. The sub-soils have been extensively disturbed through ploughing and grazing activities. Given there is no likelihood of in-situ sub-surface deposits, it is highly unlikely that there is a high probability that any Aboriginal objects with high conservation value occur in the Development Site (DECCW, 2010:24).

The following management measures are proposed for the Development Site. The following management measures are proposed for the Development Area.

Table 9-1 contains the proposed management and mitigation measures which will be implemented should the Project be approved.

9.1.2 Proposed Management Measures

The following management measures are proposed for the Development Area.

Table 9-1: Management Recommendations

Proposed on Site Cultural Heritage Management Measures			
	Action Number	Action Item	Management Measures
Survey, Collection and Analysis	A1	Conduct Surface salvage of the surface artefacts within the Development Site..	Controlled surface collection of archaeological materials from within the Development Site by qualified archaeologists in consultation and cooperation with the RAP
	A2	Detailed Salvage Report	Following the surface collection, a detailed salvage report will be written by a qualified archaeologist. The report will discuss the context of the finds, as well as the nature and extent of the assemblages within a local and regional context.
Care and Control	A3	Repatriation of Artefacts	The artefacts recovered during the salvage will be held by ACHM for analysis and reporting purposes. After construction works, the artefacts recovered during the surface salvage should be repatriated to a location in agreement with the Proponent and the RAP.
	A4	If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed	<ul style="list-style-type: none"> • Not further harm the object, • Immediately cease all work at the particular location,

		development activities, the proponent must:	<ul style="list-style-type: none"> Secure the area so as to avoid further harm to the Aboriginal object, Notify OEH as soon as practical on 131555, providing any details of the Aboriginal object and its location, and Not recommence any work at the particular location unless authorised in writing by OEH. <ol style="list-style-type: none"> In the event that skeletal remains are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and OEH contacted.
Intergenerational Equity	A5	Sites Not to Be Impacted	The Project will implement management measures for sites in the Project Area that will not be impacted by the Project.

10 Bibliography

Ecolink (2017) Preliminary Biodiversity Assessment, Sandigo Solar Farms, NSW. A report prepared for Accent Environment Pty Ltd and ESCO Pacific Pacific, Melbourne.

11 Glossary

Absolute Dating: Is the process of determining a specific date for an archaeological or paleontological site or artefact. Some archaeologists prefer the terms chronometric or calendar dating, as use of the word "absolute" implies a certainty and precision that is rarely possible in archaeology. See also relative dating.

Adze: A stone tool made on flakes with steep flaking along the lateral margins and hafted for use as a wood working tool.

Alluvial Terrace: A terraced embankment of loose material adjacent to the sides of a river valley.

Amorphous: Showing no definite crystalline structure.

Angle Of Applied Force: The angle at which the force of flaking is applied to a core.

Angular fragment: A piece of stone that is blocky or angular.

Anisotropic: Having some physical properties which vary in different directions.

Anvil: A portable stone, used as a base for working stone tools. Anvils most frequently have a small circular depression in the centre which is the impact damage from where cores were held while being struck by a hammer stone. An anvil may be a multi-functional tool also used as a grindstone and hammer stone.

Archaeological Context: The situation or circumstances in which a particular item or group of items is found.

Archaeological site types: The archaeological site types encountered in Australia can be divided into three main groups:

Historical archaeological site: An archaeological site formed since the European settlement containing physical evidence of past human activity (for example a structure, landscape or artefact scatter).

Aboriginal contact site: A site with a historical context such as an Aboriginal mission station or provisioning point, or a site that shows evidence of Aboriginal use of non-traditional Aboriginal materials and technologies (e.g. metal or ceramic artefacts).

Aboriginal prehistoric archaeological site: A site that contains physical evidence of past Aboriginal activity, formed or used by Aboriginal people before European settlement.

These sites may be:

Artefact scatters	Scarred Trees
Isolated artefacts	Mounds
Rock shelters	Rock art
Burial Structures	Hearths
Shell middens	Quarries
Ethnographic Items	Grinding Patches

Archaeology: The study of the past through the systematic recovery and analysis of material culture. Archaeology relies heavily upon science and cognate disciplines to provide interpretations of the past life ways of the peoples under investigation.

Artefact: any movable object that has been utilised modified or manufactured by humans.

Artefact scatter: A surface scatter of cultural material. Aboriginal artefact scatters are often defined as being the occurrence of five or more items of cultural material within an area of about 10m x 10m.

Australian Height Datum: The datum used to determine elevations in Australia. The AHD is based on the mean coastal sea level being zero metres AHD.

Australian Small Tool Tradition: Stone tool assemblages found across Australia, with the exception of Tasmania, dating between 8000 BP to European contact. The tool types include hafted implements (e.g. Bondi points), bifacial and unifacial points, geometric microliths, and blades. The assemblage is named for its distinct lack of larger 'core tools' which characterised earlier assemblages.

Axe: A stone-headed axe or hatchet or the stone head alone, characteristically containing two ground surfaces which meet at a bevel.

Backed Artefact: Backed artefacts are flakes retouched until they have one or more steep and relatively thick surfaces that are covered with negative scars. Since the backing retouch was accomplished with a bipolar and/or anvil-rested knapping technique, these retouched surfaces typically show negative scars originating from two directions, a pattern that is sometimes described as "double backing". Backed pieces are a feature of the 'Australian small tool tradition', dating from about 8000 BP in southern Australia.

Bearing: An angle measured clockwise from a north line of 0° to a given surveyed line.

Bevelled Edge: An edge which has had its angle altered.

Biface: A flaked stone artefact which has flake scars on both ventral and dorsal surfaces.

Bipolar: Technique of knapping where a core is rested on an anvil and force applied to the core at an angle close to 90° in the direction of the core's contact with the anvil.

Blade: A flake at least twice as long as it is wide.

Blaze: A mark carved in a tree trunk at about breast height. This type of mark was traditionally used by explorers or surveyors to indicate a route of passage in a certain direction, or a particular camp location.

Bulb of Percussion: Is a convex protuberance located at the proximal end of the ventral surface of a flake, immediately below the ring crack.

Bulbar Scar: The negative scar on a core that results from the bulb of percussion on the extracted flake.

Burial site: Usually a sub-surface pit containing human remains and sometimes associated artefacts. Human burials can also occur above the ground surface within rock shelters or on tree platform burials.

Burin: A stone implement roughly rectangular in shape with a corner flaked to act as a point for piercing holes.

Cadastral: From the Latin, a cadastre is a comprehensive register of the real property of a country, and commonly includes details of the ownership, the tenure, the precise location (some can include GPS coordinates), the dimensions (and area), the cultivations if rural and the value of individual parcels of land.

Chert: Is a fine-grained silica-rich microcrystalline, cryptocrystalline or microfibrillar sedimentary rock that may contain small fossils. It varies greatly in colour (from white to black), but most often manifests as gray, brown, greyish brown and light green to rusty red. Its colour is an expression of trace elements present in the rock, and both red and green are most often related to traces of iron (in its oxidized and reduced forms respectively).

Cleavage Plane: A plane of weakness or preferred fracture in a rock.

Composite: An artefact made up of two or more parts joined together.

Conchoidal Fracture: describes the way that brittle materials break when they do not follow any natural planes of separation. Materials that break in this way include flint and other fine-grained minerals, as well as most amorphous solids, such as obsidian and other types of glass. Conchoidal fractures often result in a curved breakage surface that resembles the rippling, gradual curves of a mussel shell; the word "conchoid" is derived from the word for this animal. A swelling appears at the point of impact called the bulb of percussion. Shock waves emanating outwards from this point leave their mark on the stone as ripples. Other conchoidal features include small fissures emanating from the bulb of percussion.

Conjoin: A physical link between artefacts broken in antiquity. A conjoin set refers to a number of artefacts which can be refitted together.

Contours: Lines joining points of equal height on a topographic map. Contour lines that are relatively close together depict an area of steep terrain on the earth's surface; whereas lines depicted a distance apart represent flat areas on the earth's surface.

Core: An artefact from which flakes have been detached using a hammer stone. Core types include single platform, multi-platform, and bipolar forms.

Cortex: Weathered outer surface of rock, usually chemically altered.

Crazing: Production of visible surface cracks by uncontrolled heating of rock.

Crown land: Technically belonging to the reigning sovereign, is a class of public land, provided for the enjoyment and benefit of the people.

Crushing: Abrasion, small fracturing and the formation of ring cracks, usually along an artefact's edge.

Cryptocrystalline: Rock in which the crystal structure is too fine for clear resolution with an optical microscope.

Cultural significance: Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (Australia ICOMOS Burra Charter Article 1.2).

Cultural Materials: The products of human behaviour, such as stone artefacts or food debris.

Datum: In surveying and geodesy, a datum is a reference point or surface against which position measurements are made, and an associated model of the shape of the earth for computing positions. Horizontal datum's are used for describing a point on the earth's surface, in latitude and longitude or another coordinate system. Vertical datum's are used to measure elevations or underwater depths. The previous datum used in Australia was known as the Australian Geodetic Datum (AGD). However, this was restricted because it was defined to best fit the shape of the earth in the Australian region only. The change in datum's had a major consequence to all coordinates. Both latitudes/longitudes and eastings/northings were shifted by approximately 200 metres in a north-easterly direction.

Debitage: The term debitage refers to the totality of waste material produced during lithic reduction and the production of chipped stone tools. This assemblage includes, but is not limited to, different kinds of lithic flakes, shatter, and production errors and rejects.

Decortication: Removal of cortex from a stone artefact.

Dendrochronology: Is the method of scientific dating based on the analysis of tree-ring growth patterns.

Denticulated: Describes a stone tool which has one edge worked into a series of notches giving a toothed or serrated cutting edge.

Discard: The movement of an object from its systemic context to an archaeological context.

Distal: The end of a flake opposite the bulb; the area of a flake containing its termination.

Direct Freehand Knapping: A method of holding the material to be flaked in the unsupported hand and directing the hammer stone with the other hand.

Dorsal Surface: The face of a flake which was the core surface prior to flake removal and may therefore retain negative flake scars or cortex.

Edge ground implement: A tool, such as an axe or adze which has been flaked to a rough shape and then ground against another stone to produce a sharp edge.

Edge modification: Irregular small flake scarring along one or more margins of a flake, flaked piece or core, which is the result of utilisation/retouch or natural edge damage. Edge damage refers to the removal of small flakes from the edge of an artefact.

Elevation: The height above mean sea level.

Eraillure Flake: A flake formed between the bulb of force and the bulbar scar. Sometimes the eraillure flake adheres to the core in the bulbar scar. The eraillure flake leaves no scar on the core, but always leaves a scar on the ventral surface of the flake. The eraillure flake is convex / concave (like a meniscus lens), has no distinct features on the "dorsal face", but may contain compression rings on the bulbar face.

Ethno-archaeology: The study of human behaviour and of the material culture of living societies in order to learn how items enter the archaeological record, thus allowing the formation of hypotheses as to how items of material culture entered the archaeological record in pre-history.

Ethnographic Site: Often overlooked in cultural heritage management, an ethnographic site is one which has particular spiritual or ritual significance to a particular group of people. They are more commonly referred to as 'dreaming sites' in Australia, and most appropriately recorded by someone with anthropological qualifications.

Excavation: The systematic recovery of archaeological data through the exposure of buried sites and artefacts. Excavation is a destructive process, and hence it is accompanied by comprehensive recording of every aspect.

Excavation Report: Once an excavation has finished, a report outlining the reasons, aims, methods used and findings from the excavation as well as some conclusions drawn from interpreting the artefacts.

Faceted Platform: A platform which is created by the removal of a number of flake scars.

Feather Termination: A termination of the fracture plane that occurs gradually (i.e. there are no sharp bends in the plane), producing a thin, low angled distal margin.

Feature: In excavations, a feature is something that a human made in the past that has not been or cannot be moved. Examples of this would be a house floor or a hearth (fire pit). When archaeologists are excavating, they often come across features.

Flake: A piece of stone removed from a core during the process of knapping by the application of external force, which characteristically shows traces of the processes of removal: concentric fracture ripples and a bulb of percussion. Flakes with a length: breadth ratio of 2:1 or more are usually referred to as blades. In some cases flakes are the result of shaping a block of stone into a tool of some kind. When removed from a prepared core, however, they were usually used as blanks for making tools. Primary flakes (also called decortication flakes) are large, thick flakes struck off a core when removing the cortex and preparing it for working. Secondary flakes (also called reduction flakes) are large flakes struck off a piece to reduce its size or thickness. Tertiary flakes are small flakes struck off when shaping the detail of a piece to make a specific tool. Retouching flakes are tiny, extremely thin flakes pinched or pushed off a piece to finish it, to fine-shape part of the surface, sharpen it, or resharpen it. Notching flakes are produced when putting hafting notches in stone tools.

Force: The quantity of energy exerted by a moving body; power exerted; energy exerted to move another body from a state of inertia.

Formal tool: an artefact that has been shaped by flaking, including retouch, or grinding to a predetermined form for use as a tool. Formal tools include scrapers, backed pieces, adzes and axes.

Fracture: Irregular surface produced by breaking a mineral across rather than along cleavage planes.

GDA94: Geocentric Datum of Australia. A spatial reference system which is universally implemented across Australia. The Geocentric Datum of Australia (GDA) is a coordinate reference system that best fits the shape of the earth as a whole. It has an origin that coincides with the centre of mass of the earth, hence the term 'geocentric'

Geodesy: The science and mathematical calculations of the shape and size of the Earth.

Geographic coordinates: a geographic coordinate system enables every location on the earth to be specified, using mainly a spherical coordinate system. There are three coordinates: latitude, longitude and geodesic height.

Geographic Information Systems: Is any system for capturing, storing, analysing, managing and presenting data and associated attributes which are spatially referenced to Earth. GIS is a system or tool or computer based methodology to collect, store, manipulate, retrieve and analyse spatially (georeferenced) data.

Geometric microlith: A small tool that has been fashioned from breaking apart a microblade. The piece is then retouched or backed and a small tool formed.

Gilgai soils: Soils with an undulating surface, presenting as a pattern of mounds and depressions. Gilgai soils contain swelling clays, which shrink and swell with alternate drying and wetting cycles. They display strong cracks when dry. Elements of the soil circulate and move during the shrink-swell process.

Global Positioning System: GPS is a satellite based navigation system originally developed by the United State's Department of Defence. A GPS receiver calculates a position by measuring distances to four or more satellites of a possible 24. These orbit the Earth at all times.

Grain: A description of the size of particles or crystals in rocks or sand. Coarse grained rocks have particles or crystals which are large (1mm or more), and fine grained rocks have particles which are small (0.1mm or less).

Greywacke: Hard fine-grained rock of variable composition containing some quartz and feldspar but mostly very fine particles of rock fragments.

Graticule: A network of crossing lines on a map representing parallels of latitude and meridians of longitude as defined by the projection.

Grid: The division of an archaeological site into small squares that denote different areas of excavation, making it easier to measure and document the site.

Grid coordinates: A point on a map given as an easting and northing reading. The values are given in metres.

Grindstone: The abrasive stone used to abrade another artefact or to processes food. Upper and lower grind stones used to grind plants for food and medicine and/or ochre for painting. A hammer stone sometimes doubles as a hammer stone and/or anvil.

Hammer stone: a piece of stone, often a creek/river pebble/cobble, which has been used to detach flakes from a core by percussion. During flaking, the edges of the hammer stone become 'bruised' or crushed by impact with the core. Hammer stones may also be used in the manufacture of petroglyphs.

Hand-Held: Description of the method used to immobilize the rock during knapping, it which it is held in one hand and struck by a hammer stone held in the other hand.

Hardness: Resistance of material to permanent deformation.

Hearth: Usually a sub-surface feature found eroding from a river or creek bank or a sand dune – it indicates a place where Aboriginal people cooked food. The remains of hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved with a hearth.

Heat treatment: The thermal alteration of stone (including silcrete) by stone workers to improve its flaking qualities.

Heritage: The word 'heritage' is commonly used to refer to our cultural inheritance from the past that is the evidence of human activity from Aboriginal peoples through successive periods of later migration, up to the present day. Heritage can be used to cover natural environment as well, for example the Natural Heritage Charter. Cultural heritage can be defined as those things and places associated with human activity. The definition is very broad, and includes Indigenous and historic values, places and objects, and associated values, traditions, knowledge and cultures.

Heritage Place: A place that has aesthetic, historic, scientific or social values for past, present or future generations – 'this definition encompasses all cultural places with any potential present or future value as defined above'. Heritage place can be subdivided into Aboriginal place and historical place, for the purposes of this document.

Hinge Termination: A fracture plane that turns sharply toward the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is rounded and should not be confused with a step termination.

Historic place: A place that has some significance or noted association in history.

Homogeneous: Uniform structure and property throughout the material.

Hunter-gatherer: A member of a society who gains their subsistence in the wild on food obtained by hunting and foraging.

Hydrology: Is the study of the movement, distribution, and quality of water throughout the Earth.

ICOMOS (International Council on Monuments and Sites): ICOMOS is a nongovernment professional organisation closely linked to UNESCO, with national committees in some 100 countries with the headquarters in France. ICOMOS promotes expertise in the conservation of cultural heritage. It was formed in 1965, and has a responsibility to advise UNESCO in the assessment of sites proposed for the World Heritage List. Australia ICOMOS was formed in 1976. Its fifteen member executive committee is responsible for carrying out national programmes and participating in decisions of ICOMOS.

Incipient Crack: A crack or line of weakness in the rock.

Inclusion: An impurity or foreign body in the stone that reduces the homogeneity of the rock.

Indirect Percussion: Punch technique.

Interpretation: The process of explaining the meaning or use of an artefact.

Inward Force: Force applied to the platform, and directed into the body of the core.

Isolated artefact: The occurrence of less than five items of cultural material within an area of about 100 sq. metres. It/they can be evidence of a short-lived (or one-off) activity location, the result of an artefact being lost or discarded during travel, or evidence of an artefact scatter that is otherwise obscured by poor ground visibility.

Knapper: A person who creates stone artefacts by striking rocks and causing them to fracture.

Knapping Floor: The debris left on one spot and resulting from the reduction of one block of raw material. A knapping location is a site comprised of one or more knapping floors.

Koori: Koori is an Aboriginal term used to describe Indigenous people from Victoria and southern New South Wales.

Lateral Margins: The margins of a flake either side of the percussion axis.

Latitude: The angular distance along a meridian measured from the Equator, either north or south.

Layer: The layer is the level in which archaeologists dig. All excavation sites have different numbers of layers. Archaeologists try to work out when they are moving to a new layer by cultural or man-made clues like floors, but sometimes they will go by changes in soil colour or soil type.

Longitude: The angular distance measured from a reference meridian, Greenwich, either east or west.

Longitudinal Cross Section: The cross-section of a flake along its percussion axis.

Magnetic north: The direction from a point on the earth's surface to the north magnetic pole. The difference between magnetic north and true north is referred to as magnetic declination.

Maintenance: The process of keeping an artefact in a particular state or condition. An edge which is being used is maintained by flaking off blunted portions. A core is maintained by keeping its characteristics within the limits required for certain types of flaking.

Manufacture: The process of making an artefact.

Manuport: Foreign fragment, chunk or lump of stone that shows no clear signs of flaking but is out of geological context and must have been transported to the site by people.

Map scale: The relationship between a distance on a map and the corresponding distance on the earth's surface.

Margin: Edge between the ventral and dorsal surfaces of a flake.

Material culture: A term that refers to the physical objects created by a culture. This could include the buildings, tools and other artefacts created by the members of a society.

Mercator projection: A conformal cylindrical projection tangential to the Equator. Rhumb lines on this projection are represented as straight lines.

Meridian: A straight line connecting the North and South Poles and traversing points of equal longitude.

MGA94: The Universal Transverse Mercator coordinates of eastings, northings, and zones generated from GDA94 are called Map Grid of Australia 1994 coordinates.

Microblade: A very small narrow blade.

Microcrystalline: Rocks in which the crystals are very small but visible in an optical microscope.

Microwear: Microscopic use-wear.

Moiety: A moiety is a half. Tribes were composed of two moieties (halves) and each clan belonged to one of the moieties.

Mound: These sites, often appearing as raised areas of darker soil, are found most commonly in the volcanic plains of western Victoria or on higher ground near bodies of water. The majority were probably formed by a slow buildup of debris resulting from earth-oven cooking: although some may have been formed by the collapse of sod or turf structures. It has also been suggested some were deliberately constructed as hut foundations.

Morphology: The topographical characteristics of the exterior of an artefact.

Mosaic: A number of continuous aerial photographs overlapped and joined together by way of 'best fit' to form a single non-rectified image.

Negative Bulb of Force: The concave surface left after a flake has been removed. See Bulbar Scar.

Notched: Serration or series of alternating noses and concavities.

Obtrusiveness: How visible a site is within a particular landscape. Some site types are more conspicuous than others. A surface stone artefact scatter is generally not obtrusive, but a scarred tree will be.

Overhang: The lip on a core or retouched flake, caused by the platform being undercut by the bulb on the flake removed.

Overhang Removal: The act of brushing or tapping the platform edge in order to remove the overhang in a series of small flakes.

Overlays: The Victorian Planning Provisions establish a number of different Overlays to show the type of use and development allowed in a municipality. Heritage Overlays will list places of defensible cultural heritage significance.

Patina: An alteration of rock surfaces by molecular or chemical change (but not by attrition, hence not to be confused with sand blasting).

Pebble/cobble: Natural stone fragments of any shape. Pebbles are 2-60 mm in size and cobbles are 60-200 mm in size.

Percussion: The act of hitting a core with a hammer stone to strike off flakes.

Percussion Flaking: The process of detaching flakes by striking with a percussor.

Percussion Length: The distance along the ventral surface from the ring crack to the flake termination.

Place: Place means a site, area, land, landscape, building or other works, group of buildings or other works, and may include components, contents, spaces and views. (Australia ICOMOS Burra Charter Article 1.1)

Plane of Fracture: The fracture path which produces the ventral surface of a flake.

Planning scheme: The legal instrument that sets out the provisions for land use, development, and protection in Victoria. Every municipality in Victoria has a planning scheme.

Platform: Any surface to which a fabricator is applied when knapping.

Platform Angle: 1. The angle between the platform and core face on a core. 2. The angle between the platform and dorsal surface on a flake. 3. The angle between the platform and flaked surface on a retouched flake.

Platform Preparation: Alteration of the portion of the platform which receives the fabricator by grinding, polishing or flaking. Removal of small flake scars on the dorsal edge of a flake, opposite the bulb of percussion. These overhang removal scars are produced to prevent a platform from shattering.

Platform removal flake: A flake which contains a platform on the dorsal surface.

Point of force application: The area of the platform in contact with the indenter during knapping. Also known as point of contact.

Positive Bulb of Force: Bulb of force.

Post-depositional processes: The natural or cultural processes which may differentially impact upon archaeological sediments after they deposited.

Potlids: A concave-convex or plano-convex fragment of stone. Potlids never have a ringcrack or any other feature relating to the input of external force. They often have a central protuberance which indicates an internal initiation to the fracture. Potlids are the result of differential expansion of heated rock.

Pre-contact: Before contact with non-Aboriginal people.

Post-contact: After contact with non-Aboriginal people.

Pressure Flaking: The process of detaching flakes by a pressing force. Also Static Loading.

Primary decortication: The first removal of cortex from a core, creating a primary decortication flake. The flake will have a dorsal surface covered entirely by cortex.

Procurement: Obtaining raw materials.

Provenance: The location of an artefact or feature both vertically and horizontally in the site. Archaeologists record the provenance of artefacts and features in their field books and on the artefact bag. Provenance is important because it gives archaeologists the history and context of an object, i.e., exactly where it was found on the site.

Punch: An object which is placed on a core or retouched flake and receives the blow from the percussor.

Quarry: A place where humans obtained stone or ochre for artefact manufacture. A place where stone or ochre is exposed and has been extracted by Aboriginal people. The rock types most commonly quarried for artefact manufacture in Victoria include silcrete, quartz, quartzite, chert and fine-grained volcanics such as greenstone.

Quartz: A form of silica.

Quartzite: Sandstone in which the quartz sand grains are completely cemented together by secondary quartz deposited from solution.

Radiocarbon Dating: Also called carbon dating and C-14 dating. It is used to work out the approximate age of an artefact by measuring the amount of carbon 14 it contains. This dating technique is not perfect. It can only be used on organic remains (typically wood or charcoal). Also radiocarbon is only accurate to ± 50 years, and cannot accurately date objects more than 50,000 years old.

Redirecting Flake: A flake which uses an old platform as a dorsal ridge to direct the fracture plane.

Redirection: Rotation of a core and initiation of flaking from a new platform situated at right angles to a previous platform. It produces a redirecting flake.

Reduction: Process of breaking down stone by either flaking or grinding.

Reduction Sequence: A description of the order in which reduction occurs within one block of stone.

Rejuvenate: The process of flaking in such a way that further reduction is possible or is easier. This usually involves removing unwanted features, such as step terminations, or making unsuitable characteristics more favourable, for example changing the platform angle. A Rejuvenation flake is a flake that has been knapped from a core solely for the purpose of preparing a new platform and making it easier to get flakes off a core, as it reduces that angle between platform and core surface.

Relative Dating: A general method of dating objects, which uses their relation to other objects. For example, artefacts found in lower layer are typically older than artefacts in higher layer.

Relic: Deposit, object or material evidence of human past.

Replica: A copy of a prehistoric artefact made by a modern investigator for research purposes.

Replicative Systems Analysis: A method of analysing prehistoric artefacts by creating exact replicas of all the manufacturing debris.

Reserves: The word 'reserve' derives from the land being reserved for a particular public use. Crown land retained in public ownership, but not reserved is termed unreserved Crown land.

Resharpener: The process of making a blunt edge sharper by grinding or flaking.

Retouched Flake: A flake that has subsequently been re-flaked. A flake, flaked piece or core with intentional secondary flaking along one or more edges.

Retouching: The act of knapping a flake into a retouched flake.

Ridge: The intersection of two surfaces, often at the junction of two negative scars.

Ring Crack: A circular pattern of micro-fissures penetrating into the artefact around the Point of Force Application and initiating the fracture. It appears on the ventral surface usually as a semi-circular protuberance on the edge of the platform.

Rock art: Paintings, engravings and shallow relief work on natural rock surfaces. Paintings were often produced by mineral pigments, such as ochre, combined with clay and usually mixed with water to form a paste or liquid that was applied to an unprepared rock surface.

Run: A large area of land in which squatters could pasture their stock without a lot of fencing necessary. Employed shepherds looked after various areas of the runs. Runs became consolidated pastoral holdings. Many of the runs were about 25 sq miles in area and later became parishes.

Sand: Quartz grains with only a small content of other materials. Grain size 2.00 mm to 0.05 mm.

Sandstone: A sedimentary rock composed of sand, and with only a small amount of other material, which has been consolidated by argillaceous or calcareous bonding of grains.

Sahul: This is the name given to the continent when Australia and New Guinea were a single landmass during the Pleistocene era. During this period, sea levels were approximately 150 metres lower than present levels.

Scar: The feature left on an artefact by the removal of a flake. Includes negative bulb, negative ring crack and negative termination.

Scarred tree: Scars on trees may be the result of removal of strips of bark by Aborigines e.g. for the manufacture of utensils, canoes or for shelter; or resulting from small notches chopped into the bark to provide hand and toe holds for hunting possums and koalas. Some scars may be the result of non-Aboriginal activity, such as surveyors' marks.

Scraper: A flake, flaked piece or core with systematic retouch on one or more margins.

Screen: A screen is used by an archaeologist to sift excavated soil in search of small artefacts like nails, ceramic fragments, and organic material like seeds, shell, and bone. Can be either manual (hand held) or mechanical.

Secondary Decortication: The removal of cortex from a core after the primary decortication flake. A secondary decortication flake is one that has both cortex and flake scars on the dorsal surface.

Selection: Runs were subdivided into selections for farming, agriculture and grazing homesteads. After a period of yearly rental payments, the selector could often obtain freehold ownership.

Shell midden: A surface scatter and/or deposit comprised mainly of shell, sometimes containing stone artefacts, charcoal, bone and manuports. These site types are normally found in association with coastlines, rivers, creeks and swamps – wherever coastal, riverine or estuarine shellfish resources were accessed and exploited.

Sieve: See Screen.

Significance: Significance is a term used to describe an item's heritage value. Values might include natural, Indigenous, aesthetic, historic, scientific or social importance.

Silica: Silicon dioxide.

Silcrete: A silicified sediment.

Siliceous: Having high silica content.

Site: An area designated for archaeological exploration by excavation and/or survey usually due to the presence of a concentration of cultural material.

Step Termination: A fracture plane that turns sharply towards the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is sharp, often a right angle.

Stratification: Over time, debris and soil accumulate in layers (strata). Colour, texture, and contents may change with each layer. Archaeologists try to explain how each layer was added--if it occurred naturally, deliberately (garbage), or from the collapse of structures--and they record it in detailed drawings so others can follow. Stratigraphy refers to the interpretation of the layers in archaeological deposits. Usually, the artefacts found on top are the youngest (most recent), while those on the bottom are the oldest.

Structures (Aboriginal): Can refer to a number of different site types, grouped here only because of their relative rarity and their status as built structures. Most structures tend to be made of locally available rock, such as rock arrangements (ceremonial and domestic), fish traps, dams and cairns, or of earth, such as mounds or some fish traps.

Surface Site: A site where artefacts are found on the ground surface.

Taphonomy: The study of the depositional and preservation processes which produce archaeological or paleontological material.

Termination: The point at which the fracture plain reaches the surface of a core and detaches a flake.

Tertiary Flake: A flake without cortex.

Theodolite: Instrument used by a surveyor for measuring horizontal and vertical angles.

Thermal Treatment: Alteration of siliceous materials by controlled exposure to heat.

Thickness: Measurement of the distance between the dorsal and ventral surfaces of a flake.

Thumbnail scraper: A convex edged scraper that is small, generally the size of a thumbnail.

Tool: Any object that is used.

Topographic map: A detailed representation of cultural, hydrographic relief and vegetation features. These are depicted on a map on a designated projection and at a designated scale.

Transverse Cross Section: The cross section of a flake at 90° to the length.

Transverse Mercator projection: A projection similar to the Mercator projection, but has the cylinder tangent at a particular meridian rather than at the equator.

True north: The direction to the Earth's geographic North Pole.

Tula: A flake with a prominent bulb, large platform and platform/ventral surface angle of about 130°, which is retouched at the distal end. Not to be confused with a Tula Adze.

Tula Adze: A composite tool observed ethnographically, consisting of a stone artefact (often a Tula), a wooden handle and resin.

Unidirectional Core: Core from which flakes were removed from one platform surface and in only one direction.

Unifacial: Artefact flaked on only one side.

Unit: Archaeologists lay out a grid over a site to divide it into units, which may vary in size, and then figure out which units will be dug. Archaeologists dig one unit at a time. Keeping track of specific measurements between artefacts and features gives archaeologists the ability to draw an overall map looking down on the site (called a floor plan), to get the bigger picture of the site.

Use-wear: Damage to the edges or working surfaces of tools sustained in use.

Ventral Surface: The surface of a flake created when it is removed and identified mainly by the presence of a ring crack.

Visibility: The degree to which the surface of the ground can be seen. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land-use practices, such as ploughing or grading. Visibility is generally expressed in terms of the percentage of the ground surface visible for a project area.

12 Appendices

12.1 Log of Consultation Events

Date	Consultation Type	OEH Requirement	Consultation Stage	Registered Aboriginal Party / Agency	Contact Person	Description
18-Oct-17	Letter	4.1.2	Stage 1	Office of Environment and Heritage	Peter Ewin Daniel Clegg	ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	The Registrar, Aboriginal Land Rights Act 1983		ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	Narrandera LALC	Ronnie Williams	ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	NNTT		ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	Narrandera Shire Council		ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	NTSCorp		ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Letter	4.1.2	Stage 1	Local Land Service - Riverina		ESCO Pacific Pacific sent Letter to Agency to identify Aboriginal parties
18-Oct-17	Email	4.1.2	Stage 1	Office of Environment and Heritage	Peter Ewin	ESCO Pacific Pacific sent PDF copy of Letter to Agency to identify Aboriginal parties
18-Oct-17	Email	4.1.2	Stage 1	Narrandera Shire Council	Kellie Dissegna	ESCO Pacific Pacific sent PDF copy of Letter to Agency to identify Aboriginal parties
18-Oct-17	Email	4.1.2	Stage 1	Narrandera Shire Council	Kellie Dissegna	Narrandera Shire Council response – identifying Ronnie Williams from Narrandera LALC
23-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in The Area News (week 1)
23-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Daily Advertiser (week 1)
24-Oct-17	Letter	4.1.3	Stage 1	Office of Environment and Heritage	Peter Ewin Daniel Glegg	Response letter, provided a list of 4 Aboriginal parties
24-Oct-17	Letter	4.1.3	Stage 1	Wagga Wagga LALC		Letters to Agency to identify Aboriginal parties

24-Oct-17	Letter	4.1.3	Stage 1	Griffith LALC		Letters to Agency to identify Aboriginal parties
24-Oct-17	Letter	4.1.3	Stage 1	Leeton & District LALC		Letters to Agency to identify Aboriginal parties
24-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Narrandera Argus (week 1)
24-Oct-17	Email	4.1.5 4.1.6	Stage 1	Mark Saddler - Guwayu	Mark Saddler	Aboriginal party registered an interest in the Project
25 Oct-17	Phone call	4.1.6	Stage 1	Narrandera LALC	Ron Williamson	Ron is the Chairperson of the Narrandera LALC. He informed there were remains in the Sandigo area, north of Sandy Creek. ESCO Pacific Pacific suggested Narrandera LALC to register their interest by mail or email, but they were too busy at that moment.
25-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Riverine Grazier (week 1)
25-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Southern Riverina News (week 1)
26-Oct-17	Letter	4.1.2	Stage 1	The Registrar, Aboriginal Land Rights Act 1983	Jodie Rikiti	Response letter, informed no Registered Aboriginal Owners pursuant to Division 3 of the Aboriginal Land Rights Act 1983
30-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in The Area News (week 2)
30-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Daily Advertiser (week 2)
31-Oct-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Narrandera Argus (week 2)
31-Oct-17	Email	4.1.2	Stage 1	National Native Title Tribunal		Response letter, informed no Native Title Determination, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area
1-Nov-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Southern Riverina News (week 2)
1-Nov-17	Public Notice	4.1.3	Stage 1	All RAPs		Public Notice in the Riverine Grazier (week 2)
13-Nov-17	Email	4.1.3	Stage 1	Narrandera	Ron	ESCO Pacific Pacific

				LALC	Williamson	sent an email to check whether Narrandera LALC wanted to register their interest in the project – No answer
20-Nov-17	Email	4.2.2 4.3.1	Stage 2 Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	ESCO Pacific Pacific sent project information and field assessment methodology for review and feedback
21-Nov-17	Phone call	4.1.3	Stage 1	Narrandera LALC	Ron Williamson	Ron confirmed Narrandera LALC did not want to register interest.
21-Nov-17	Letter	4.2.2 4.3.1	Stage 2 Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	ESCO Pacific Pacific sent hard copy of project information and field assessment methodology for review and feedback
27-Nov-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP provided comments on methodology: "The area of the proposed solar farm is an area that I have already recorded many scar trees and items in. This area is a traditional Wiradjuri walking track. Also the fact that several old wet lands are about and the adjacent creek is very important to my people."
28-Nov-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	Discussed potential dates and insurance RAPs and archaeologists agreed on field assessment on 11th – 13th December 2017 inclusive
5-Dec-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	ESCO Pacific Pacific confirmed field assessment dates 11-13 Dec 2017. Sent Indemnity Deed Poll for signature Mark sent Indemnity Deed Poll back
6-Dec-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	ESCO Pacific Pacific sent amended version of Deed Poll
9-Dec-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP had a question about time and place of meeting for field assessment
11-Dec-17 to 13-Dec-17	Field assessment	4.3.3	Stage 3	RAP Mark Saddler – Guwayu	Mark Saddler	Field assessment with RAP (3 days – northern areas of the site)

				ACHM (archaeologists)		
18-Dec-17	Email	4.3.2 4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	ESCO Pacific Pacific proposed 22-24 Jan 2018 for part 2 of field assessment and sent updated proposed footprint for field assessment purposes. RAP accepted the dates.
8-Jan-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP sent invoice for field assessment part 1
18-Jan-18	Email Phone call	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP confirmed dates of survey
21-Jan-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP informed hot weather was expected and field assessment may need to cease due to safety reasons
22-Jan-18 to 24-Jan- 18	Field assessment	4.3.3	Stage 3	RAP Mark Saddler – Guwayu ACHM (archaeologists)	Mark Saddler	Field assessment with RAP (3 days – southern areas of the site) Cedric Berge of ESCO Pacific Pacific briefly met Mark Saddler during the field assessment
24-Jan-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP sent invoice for field assessment part 2
1-Feb-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP sent email to mention he was waiting for AHIMS to approve sites and requested file storage space to send photos and other documents
5-Feb-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP informed he would send his report by 7 Feb
9-Feb-18	Email	4.3.3	Stage 3	RAP Mark Saddler - Guwayu	Mark Saddler	RAP sent his report following field survey – ESCO Pacific Pacific confirmed reception

12.2 AHIMS Site Search Result



Office of
Environment
& Heritage

AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : 1

Client Service ID: 306622

Australian Cultural Heritage Management Vic Pty Ltd

Date: 12 October 2017

GPO Box 5112

Melbourne Victoria 3764

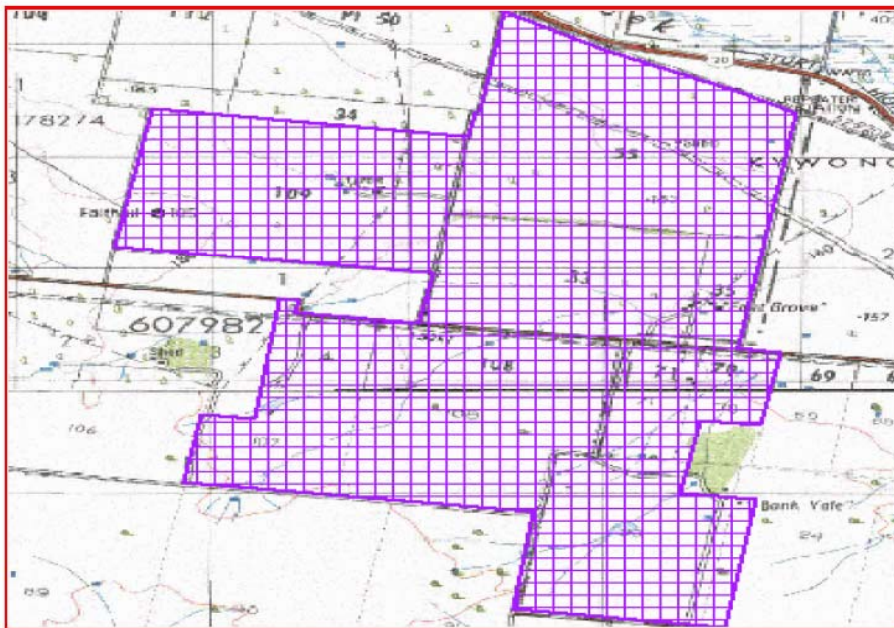
Attention: Shaun Canning

Email: shaun.canning@achm.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Search using shape-file Kwong.SHP with a buffer of 0 meters. Additional Info: Reporting conducted by Shaun Canning on 12 October 2017.

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



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

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

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

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

Important information about your AHIMS search

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

12.3 Newspaper Advertisements

12.3.1 Narrandera Argus: Tuesday 24th & Tuesday 31st

Narrandera Argus
Local Classifieds
BOOK YOUR SPACE NOW! Phone us on 6959 2222, fax on 6959 2256 or email classifieds@narranderaargus.com.au

PUBLIC NOTICES

SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

Cedric Berge
 Level 4, 13 Cremorne St, Richmond VIC 3121
 Email: cultural.heritage@escopacific.com.au

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Narrandera Shire Council

LATER OPENING TIME
THURSDAY 26 OCTOBER 2017

Residents are advised that the Narrandera Shire Council Administration Centre, Community Transport and HMMS, Narrandera Landfill Site, Visitor Information Centre and Works Depots will open at the later time of 10.30am on Thursday 26 October 2017 to allow all staff to attend the annual awards breakfast and necessary training.

For matters requiring urgent attention, please telephone the following numbers:

Ranger	0429 043 719
Roads, Parks and other	0427 595 562
Sewer	0417 023 016
Water	0417 023 015
Bushfire	000

George Cowan
 General Manager

Save a life today!

Australian Red Cross BLOOD SERVICE

NOTICE

COMPLETE GARDEN CARE
 Lawn Mowing – Pruning
 Ring Mark Beeche
 on 0400 759 200

CHRISTMAS BOXES
Due 29th October
 Contact Glenys
 0428 593 401
 or leave at Narrandera
 Christian Books & Gifts

Mobil Supreme +98
is now available at
Mobil NARRANDERA

NARRANDERA IMPERIAL FOOTBALL NETBALL CLUB AGM
Wednesday 22nd November 2017
7pm in the Clubrooms

PUBLIC NOTICE
 In the District Court Matter
Case No 2013/267922
Papa vs Minchin the case was heard and found in the favour of Papa. Resitution and costs awarded by Her Honour Justice Olsen.
 – S. Papa

BINGO
THIS FRIDAY OCTOBER 27 & LAST FRIDAY OF EACH MONTH
 John O'Brien Hall
 Doors open 6pm
Fundraiser for the John O'Brien Estate

FOR SALE

AIR CONDITIONER
 evaporative, new motor.
 \$200 ono. Phone 0428 695 926.

POSITIONS VACANT

AGRI AUSTRALIS
Australian Hazelnut

MAINTENANCE WORKER WITH WELDING QUALIFICATIONS
 General farm machinery maintenance experience desirable

QUALIFIED AGRICULTURAL/DIESEL MECHANIC
 Tractor and farm machinery maintenance experience desirable

Send your resume to:
admin@agriaustralis.com.au
 or contact the Office on 6959 8243

General Store Manager
 Xpress Fuels – Narrandera

Store Manager Responsibilities

- Developing store strategies to raise customers' pool, expand store traffic and optimize profitability
- Meeting sales goals by training, motivating, mentoring and providing feedback to store staff
- Ensuring high levels of customers satisfaction through excellent service

Job Brief

We are looking for a results driven Retail Store Manager to be responsible for the overall store management. The successful candidate will be able to enhance customer satisfaction, meet sales and profitability goals and manage staff effectively. Candidates must have retail management in Fuel Station/Fuel Industry experience.

Requirements

- Proven successful experience as a retail manager
- Powerful leading skills and business orientation
- Customer management skills
- Strong organizational skills
- Good communication and interpersonal skills
- Minimum Bachelor degree

For more information and to apply, please send your resume to aisha@xpressgroup.com.au

PERSONAL

SENSITIVE SCALP
 but want great colour?
 100% ammonia free
 L'Oreal Professional colour at E-Street
 Hairstudio – 6959 9901

Can Assist
CANCER ASSISTANCE NETWORK NARRANDERA

Local volunteers supporting local families affected by cancer

DISCLAIMER

The Argus would prefer advertisements to be supplied over the counter, fax or email. No responsibility will be taken for any advertisements which are phoned through.

POSITIONS VACANT

ALTINA Wildlife Park

MAINTENANCE/MULTI-SKILLED LABOURER

This position is for full-time employment, 40 hours per week, Monday to Friday with the possibility of overtime to complete daily duties. The successful applicant will assist with maintenance and construction projects at Altina. Due to the nature of this work and with regular deadlines to meet, it can be a fast paced environment with the entirety of the work being hands on.

Duties include, but are not limited to:

Assist with general maintenance of the facilities, fences and fabrication of materials (welding a variety of steels), Repairs, cleaning etc. General cleaning duties of work sites, work sheds and equipment, assist tradespersons as requested, operation of plant machinery, irrigation as required, operating basic tools and machinery.

This position requires the following:

The applicant must be fit for physical work, enthusiastic, able to demonstrate a high level of work ethic/initiative, be able to work well as a team and unsupervised, previous maintenance/labouring/trade experience, experience operating tools and machinery related to the position with appropriate Licences/Qualifications, hold a current manual drivers licence. Welding/Fabrication experience is a necessity.

If you are interested in the above position and feel you would be an asset to our team, send your letter of application and resume to:

Attn: Recruitment Officer
 Altina Wildlife Park
 c/- 663 Hillston Road, Griffith NSW 2680
 Email: info@altinawildlife.com

CLOSING DATE: 5pm, Friday 3rd November 2017

GATES 1300 881 279
Complete Apprentice Management: www.gates.com.au

POSITION AVAILABLE
Apprentice Welder

GATES, together with Narrandera based business W Clark & Sons are currently seeking applications from committed and hard working individuals interested in starting a career as an Apprentice Welder commencing in early 2018.

As an Apprentice Welder you will be required to assist in the preparation, measurement, and cutting of metal components, interpret drawings and plans and produce a range of metal fabricated products, using an assortment of tools and fabrication techniques. Upon completion of this 4 year apprenticeship you will obtain a Certificate III in Engineering – Fabrication Trade.

To be successful in this position you must be reliable, mature-minded, willing to learn, able to show initiative, possess excellent problem-solving skills and have a genuine interest in pursuing a career in this industry. A current driver's licence is preferred but not essential. Current school leavers are encouraged to apply.

Apply online today at gates.com.au

Eurells go pink to support breast care nurses

Husqvarna Australia has proudly announced it will be continuing its partnership with the McGrath Foundation in 2017 to assist with raising funds for Breast Care Nurses around Australia, with its Saws for a Cause initiative.

Eurells of Narrandera will 'Go Pink' by hosting a Husqvarna outdoor power equipment workshop on Saturday October 28 at the NSW Rural Women's Gathering in Narrandera.

The two-hour workshop is part of the 2017 NSW Department of Primary Industries' Rural Women's Gathering and will see guests develop chainsaw skills

and raise important funds for the McGrath Foundation.

"We are very excited about this opportunity. The need for experience and skills to safely use a chainsaw is something that we hear from a lot of rural women," said Peter Eurell of Eurells Narrandera.

"I'm looking forward to being able to help teach new skills and raise awareness for the McGrath Foundation," he said.

Husqvarna's Saws for a Cause commitment will see \$5 from every pink Husqvarna toy chainsaw sold during October go to the McGrath Foundation.

Additionally, for every

purchase of a pink toy chainsaw during October, consumers will go into the draw to win a Husqvarna 536Lxp Battery Chainsaw Kit valued at \$1,047.

Saws for a Cause will further see Husqvarna donating \$10 from the sale of every Husqvarna Battery Chainsaw sold throughout the year to the Foundation, to help ensure support continues outside of Breast Cancer Awareness month.

All funds raised by Eurells of Narrandera and other Husqvarna dealerships around Australia will go directly to assist the placement of specialist McGrath Breast Care Nurses in

communities around the country.

These dedicated nurses help individuals and their families experiencing breast cancer by providing physical, psychological and emotional support. This support occurs from the time of diagnosis, right throughout treatment and is available for free.

"We're proud to play our part in the Narrandera area and help raise awareness and important funds so the McGrath Foundation can continue to make a difference," said Mr Eurell.

"Breast cancer is the most common cause of cancer in Australian women and with a 38 percent expected increase in the need for Breast Care Nurses until 2020, it's important that we keep up the awareness and fundraising," he concluded.



Narrandera Argus Classifieds

Phone us on 6959 2222 or email classifieds@narranderaargus.com.au

PUBLIC NOTICES

Narrandera Shire Council HAVE YOUR SAY

REVIEW OF THE NARRANDERA FLOODPLAIN RISK MANAGEMENT STUDY AND PLAN

Narrandera Shire Council is commencing a review of the *Narrandera Risk Management Study and Plan*. To assist Council a community questionnaire has been developed to give you the opportunity to have your say on floodplain management.

The community questionnaire and other relevant documents are available for viewing via Council's website www.narrandera.nsw.gov.au. As such, we are inviting you to take a short ten minute survey to help assist the consultant in gathering important information.

Alternatively the questionnaire and return prepaid envelope may also be collected from the Council Chambers.

Please return or submit the completed questionnaire in the reply paid envelope or online by **Wednesday 15 November 2017**.

George Cowan
General Manager

SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by **8th November 2017**.

Cedric Berge
Level 4, 13 Cremorne St, Richmond VIC 3121
Email: cultural.heritage@escopacific.com.au

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.



Department of Industry

Grazing opportunity at Barellan

Department of Industry - Crown lands is seeking applications by Expression of Interest from the public for a grazing opportunity over Crown land at Barellan.

The Crown land is situated on Martin Rd Barellan being Lot 7037 DP 94876, with an approximate area of 4.822ha, in the Parish of Barellan, County of Cooper.

Interested parties should obtain an 'Information Package for Intending Applicants' (which includes links to the 'Licence, Grazing EOI Application form' and 'Standard Terms & Conditions') from the website (www.crownland.nsw.gov.au) (Public exhibition & Information) OR from Crown Lands Griffith by appointment.

All interested persons should note that the highest rental amount submitted by any applicant will not necessarily determine the successful applicant. File: 17/09132
Applications close on Friday 03/11/2017 at COB (4:30 pm).

For more information, contact Melba Robb Group Lessee, Griffith and Day (Telephone: 02 6960 1341 / Email: melba.robbs@crown-land.nsw.gov.au).

**NARRANDERA
BUY LOCAL**

SUPPORT YOUR
COMMUNITY

10 — Tuesday, October 31, 2017

NOTICE

NARRANDERA IMPERIAL FOOTBALL-NETBALL CLUB AGM

Wednesday 22nd
November 2017
7pm in the Clubrooms

N'DERA CAMERA CLUB AGM

Wednesday 1st Nov
7pm in the Senior
Citizens Rooms

PERSONAL

FINE or problem hair but need a great cut? Visit Rita at R.Street Hairstudio - 6959 9901. Open Mondays

POSITIONS VACANT

Narrandera Shire Council

POSITION VACANT

Finance Manager

Grade 22
\$1736.90 - \$1945.33 per week
Plus super and a residence is available which can be negotiated to form part of the package.

Closing Date:
15 November 2017

For further information visit
narrandera.nsw.gov.au
or contact Council's Human Resources Department on 6959 5510

Can Assist CANINE ASSISTANCE NETWORK

MONTHLY BOOK SALE

Saturday 10am-2pm
Baptist Church & Hall,
Bolton Street

LEAVE A GIFT IN YOUR WILL TO ASSISTANCE DOGS AUSTRALIA



AND YOU CAN HELP IMPROVE THE LIVES OF PEOPLE LIVING WITH DISABILITIES

For more information about leaving a gift in your will please contact:
Freecall: 1800 688 364
www.assistance dogs.org.au



DISCLAIMER

The Argus would prefer advertisements to be supplied over the counter, fax or email. No responsibility will be taken for any advertisements which are phoned through.

POSITIONS VACANT

AGRI AUSTRALIS Australian Hazelnut

MAINTENANCE WORKER WITH WELDING QUALIFICATIONS

General farm machinery maintenance experience desirable

QUALIFIED AGRICULTURAL/DIESEL MECHANIC

Tractor and farm machinery maintenance experience desirable

Send your resume to:
admin@agnaustralis.com.au
or contact the Office on 6959 8243

General Store Manager

Xpress Fuels - Narrandera

Store Manager Responsibilities

- Developing store strategies to raise customers' pool, expand store traffic and optimize profitability
- Meeting sales goals by training, motivating, mentoring and providing feedback to store staff
- Ensuring high levels of customers satisfaction through excellent service

Job Brief

We are looking for a results driven Retail Store Manager to be responsible for the overall store management. The successful candidate will be able to enhance customer satisfaction, meet sales and profitability goals and manage staff effectively. Candidates must have retail management in Fuel Station/Fuel Industry experience.

Requirements

- Proven successful experience as a retail manager
- Powerful leading skills and business orientation
- Customer management skills
- Strong organizational skills
- Good communication and interpersonal skills
- Minimum Bachelor degree

For more information and to apply, please send your resume to aisha@xpressgroup.com.au



MAINTENANCE/ MULTI-SKILLED LABOURER

This position is for full-time employment, 40 hours per week, Monday to Friday with the possibility of overtime to complete daily duties. The successful applicant will assist with maintenance and construction projects at Altina. Due to the nature of this work and with regular deadlines to meet, it can be a fast paced environment with the entirety of the work being hands on.

Duties Include, but are not limited to:

Assist with general maintenance of the facilities, fences and fabrication of materials (welding a variety of steels), Repairs, cleaning etc. General cleaning duties of work sites, work sheds and equipment, assist tradespersons as requested, operation of plant/machinery, irrigation as required, operating basic tools and machinery.

This position requires the following:

The applicant must be fit for physical work, enthusiastic, able to demonstrate a high level of work ethic/initiative, be able to work well as a team and unsupervised, previous maintenance/labouring/trade experience, experience operating tools and machinery related to the position with appropriate Licences/Qualifications, hold a current manual drivers licence. Welding/Fabrication experience is a necessity.

If you are interested in the above position and feel you would be an asset to our team, send your letter of application and resume to:

Attn: Recruitment Officer
Altina Wildlife Park
c/- 683 Hillston Road, Griffith NSW 2680
Email: info@altinawildlife.com

CLOSING DATE: 5pm, Friday 3rd November 2017



The A Grade Carpheds were washed out this week, resulting in a draw.



The B Grade Carps this week cruised in to a nine wicket win.

CRICKET SCOREBOARD A GRADE

LEETON PHANTOMS

H Emerson	b M Tilyard	4
C Hopkins	b J Anderson	62
T Rolls	b R Rehwinkel	5
B Buster	b J Anderson	18
J Yelland	b J Williamson	13
S Weckert	lbw b J Anderson	0
J Carmm	lbw b J Anderson	0
L Hamilton	c J Sullivan b J Williamson	2
R Keith	c J O'Brien b R Rehwinkel	6
J Semmens	c C Daaboul b R Rehwinkel	10
G Anthony	not out	1
Extras	(nb 1, w 3, b 1, lb 1)	6
Total		127
Overs		31.4

NARRANDERA CARPHEADS

R Argus	lbw b J Yelland	7
J Doyle	not out	62
J Sullivan	c T Rolls b L Hamilton	26
J Anderson	not out	0
Extras	(nb 0, w 4, b 0, lb 0)	4
Total		2/99
Overs		12.4

B GRADE

LEETON PHANTOMS

T Studholme	c C Irons b A Hayes	2
R Lacey	b A Hayes	0
N Anderson	c C Irons b A Hayes	0
V Wate	c J Schofield b W Gilbert	28
J Rasmus	c G Khan b C Irons	16
J Caldwell	c J Schofield b C Irons	14
C Carter	c O Park b T Butterfield	0
L McMaster	c D Whiteman b O Park	20
GM Clark	b B Perram	4
N Bennett	not out	2
W Dixon	c C Vearing b B Perram	0
Extras	(nb 7, w 2, b 2, lb 0)	11
Total		97
Overs		30.4

NARRANDERA CARPHEADS

A Cabban	c N Bennett b N Anderson	2
J Schofield	not out	75
G Khan	not out	12
Extras	(nb 2, w 8, b 0, lb 1)	11
Total		1/100
Overs		14.5

Narrandera Argus

Fairfax Media



12.33 The Daily Advertiser: Monday 23rd & Monday 30th

dailyadvertiser.com.au

Monday, October 23, 2017 THE DAILY ADVERTISER 17

Connect with Classifieds

The Daily Advertiser

Phone: 1300 656 562

Email: riverinaclassifieds@fairfaxmedia.com.au

Fairfax Media

Index

Adult Services.....	18
Boats and Accessories.....	17
Death Notices.....	17
Funeral Directors.....	17
Livestock.....	17
Motor Vehicles.....	17
Motorcycles & Scooters.....	17
Positions Vacant.....	17-18
Public Notices.....	17
Trades & Services.....	18

Motorcycles & Scooters

HONDA CBF100 & CBF70

Honda, CBF100, 2007 model and Honda CBF70, 2006 model, excellent condition, good tyres, just serviced, \$1500 each. 0428 410 800.

Boats and Accessories

Get Your Boat or JetSki Licence
Wagga
Wednesday
1st November at 5pm
Call : 1300 889 321
www.abccollicent.com.au
NSW Maritime Approved
BOOK NOW

Public Notices

Public Notices



MTC A.G.M.

The Annual General Meeting of the Murrumbidgee Turf Club will be held in the Members Lounge at the racecourse on Tuesday, 21st November, 2017, at 6pm.

Should any member wish to bring forward any motion to alter or repeal any rule or to add any new rule, he/she should give written notice to the Chief Executive prior to 4pm on Tuesday, 31st October, 2017.

Scott Sanbrook,
Chief Executive Officer
PO Box 34, Wagga Wagga, 2650.
Ph: 6821 2151.

Livestock

100 MERINO wether
lambs woolly, nicely
grown, good con-
d, drenching, handy to
Wagga, \$77 incl GST.
Phone: 0428 212 782.

Positions Vacant

**MCCABE
TRANSPORT**
DRIVERS REQUIRED
HC & MC LICENCE
Tipping experience
required
To cart scrap metal
country work to
Sydney.
0407 868 858
4271 1687

**MERIMBULA
BULLDOGS**
Hugby League positions
2018 available with
Merimbula Bulldogs.
Email: Club Pres Laurie,
ldv@dragnet.com.au

Positions Vacant

FULL TIME PHARMACIST

Capital Chemist Temora has an exciting opportunity for a full time Pharmacist to join their professional team.

Would you like to get to the end of each day and know you have made a difference?

We are looking for a highly motivated, and energetic Pharmacist to continue fostering ongoing, nurturing relationships with its customers, based on sound healthcare advice and complete health care solutions.

The position will involve working between two pharmacies within Temora.

AHPRA registration is essential

Please apply via SEEK or
email: mfguson@capitalchemist.com.au

Welder/Fabricator

Full Time

Qualified and Apprentice

Experience in metal fabrication, MIG/TIG
welding. Onsite work available.

Wagga Stainless Steel

0438 213 199
admin@waggastainlesssteel.com.au

Qualified Spray Painter

Graeme Hull Smash Repairs is looking for a Spray Painter to operate within our exciting facility in Young, NSW. A generous remuneration package for the right candidate. Forward resumes to admin@ghsyoung.com.au. Closes 3/11/17

Area: Young NSW
Ph: 02 6382 7909
Email: admin@ghsyoung.com.au

Qualified Panel Beater

Graeme Hull Smash Repairs is looking for a Qualified Panel Beater to operate within our exciting facility in Young, NSW. A generous remuneration package for the right candidate. Please Send resumes to admin@ghsyoung.com.au. Applications close 3/11/17

Area: Young NSW
Ph: 02 6382 7909
Email: admin@ghsyoung.com.au

The Daily Advertiser

Connect with Classifieds

Place a Classifieds ad

1300 656 562
riverinaclassifieds@fairfaxmedia.com.au
Save time, get in, online 24/7
advertiser.com.au

Print and online packages available
throughout Australia

Ongoing business advertising self service
enquiries: admadon@fairfaxmedia.com.au

Email now available

Death Notices

CASTLE, Frances Mary:

Passed away at Boree Creek, on Thursday, 12 October 2017. Late of Back Cemetery Rd Boree Creek. Beloved wife of Neil. Loving mother and mother in law of Kellie and Eddie. Cherished Grandmother of Jack.

Aged 72 years.

Hosting peacefully in Gods care.

The relatives and friends of the late Frances Mary Castle are respectfully informed that a graveside service will be held on Thursday, 26 October 2017 at the Boree Creek Cemetery, commencing at 2.30 pm.

Flowers most welcome.



Warkins Funeral Directors
Narandera 6699 9062
Leeton 6953 3499

Funeral Directors

JOHN BANCOR & SON
Funeral Home
*Celebrating
Lives*
6925 4444
www.johnbancor.com.au



SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 660MW) near Sandigo, approximately 20kms south of Narandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Cedric Berge
Level 4, 13 Cremorne St, Richmond, Vic 3121
Cultural.heritage@escopacific.com.au

**PROMOTE
YOUR
BRAND
ADD A
LOGO
TO
YOUR AD**

Fairfax Media



Sell your Wheels
— — — — —
for only \$5
for up to 4 lines

*Private sales only

Connect with **Classifieds**

Bringing home the



Let our unique
ValueMyCV tool tell
you what you should be
earning. You might get a
nice surprise.

Upload your CV to
Adzuna.com.au

adzuna
Your new job starts here

Connect with Classifieds

The Daily Advertiser

Phone: 1300 656 562
Email: riverinaclassifieds@fairfaxmedia.com.au



Fairfax Media

Index

Adult Services.....	18
Boats and Accessories.....	17
Death Notices.....	17
For Sale.....	17
Funeral Directors.....	17
Funeral Notices.....	17
Motor Vehicles.....	17
Positions Vacant.....	17-18
Public Notices.....	17
Trades & Services.....	18

The Daily Advertiser Connect with Classifieds

Place a Classifieds ad

1300 656 562
riverinaclassifieds@fairfaxmedia.com.au
Save time, submit online 24/7
advertiser.com.au

Print and online packages available
throughout Australia.
Ongoing business advertising self service
enquiries: admadonline@fairfaxmedia.com.au

Emoji now available 😊

Death Notices

EARSMAN

Kitty "Pauline"

A Service to Celebrate the life of Pauline will be held in the Crematorium Chapel, 2 Brunskill Road, Wagga, Wagga, on Wednesday, 1st November 2017 commencing at 11.30am. Relatives and friends are respectfully invited to attend.



DANIEL WOODS
FUNERAL CARE
(02) 69218218
www.danielwoods.com.au

PEACOCK Betty Lorraine

Peacefully at Calvary Hospital on Saturday 28th October 2017. Dearly loved wife of Frank (dec'd). Loving mother and mother in law of John & Tonya, Wayne & Cheryl and Sue and Jeff Tickner. Adored grandmother and great grandmother. Cherished sister and sister in law of Alan & Beverly Rolton, Peggy & Ron Peacock (both dec'd), Walter & Val Rolton (both dec'd), and Irene & Greg Hardie. Aged 85 Years.

"Together again...as it should be"

Funeral details to appear in tomorrow's edition of The Daily Advertiser.



DANIEL WOODS
FUNERAL CARE
(02) 69218218
www.danielwoods.com.au



Funeral Notices

BURGESS

Lee Ann

Relatives and friends are warmly invited to attend a Service to Celebrate Lee Ann's life to be held in the Inspire Church, Kooragang Road, Wagga Wagga on Wednesday 1st November 2017 commencing at 1.30pm, after which a private cremation will take place.

JOHN BANCE & SON
FUNERAL HOME
Celebrating Lives
www.johnbance.com.au

Funeral Directors

JOHN BANCE & SON
FUNERAL HOME

Celebrating
Lives

6925 4444
www.johnbance.com.au



For Sale

TYRE SPECIALS

1/6/65R14 \$69
205/65R15 \$79
205/65R16 \$95
215/60R16 \$95
235/45R17 \$110
235/40R18 \$120
185R14C \$79
245/70R16 AT \$150
ABC TYRES
25 PEARSON ST
Ph: 6925 5305

Motor Vehicles



BMW Sports Coupe 320Ci, 2005

Excellent condition,
142,000 KM reg-EB11A
\$15,500 ono. Ph.
0427 011 986.

Boats and Accessories

BOATING LICENCE

Wagga Wagga 15 Nov.
1 limited places avail.
Phone 0478 691 620

Get Your Boat or JetSki Licence

Wagga
Wednesday
1st November at 5pm
Call : 1300 888 321
www.achosailboats.com
NSW Maritime Accredited
BOOK NOW

Public Notices

SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Cedric Berge
Level 4, 13 Cremorne St, Richmond, Vic 3121
Cultural.heritage@escopacific.com.au

Public Notices

ROAD CLOSURE

TUESDAY 31ST OCTOBER 2017

Forsyth Street

(Between Baylis St & Berry St)

Light pole maintenance

between the time 8:00pm - 4:00am

RIVERINA TRAFFIC SERVICES

PTY LTD WAGGA

The Carnival is Over!! Cloutys Amusements has been sold

We wish to thank all our supportive community and friends. We have had so much pleasure in giving young children and families happiness and to see your smiling faces throughout the 45 years.

"The memories we will hold forever"
Special thanks to The Daily Advertiser for their support over the years.
Geoff & Val

Positions Vacant



SALES/ADMINISTRATION POSITION:

A great opportunity exists for a highly motivated person to join our team, catering to the local building industry. Ideally the person we are seeking should possess the following skills and attributes.

- Good communication and organizational skills
- Strong work ethic - decision making ability
- Tidy appearance
- Able to work in a team environment
- Drivers Licence
- Fork licence an advantage (or willing to obtain)
- Computer skills an advantage (working with MYOB)

Job Roll would involve:

- Logistics Management
- Involvement in Internal and External Sales (ongoing training involved)
- Computer and general office duties
- Flexible work hours an option

Please submit a covering letter, along with your CV to Peter Sedunary: peter@waggaibricks.com.au

Application close 13th November, 2017.

Sell it for a river!

Sell your Wheels

for only \$5

for up to 4 lines

Traders only

Connect with Classifieds

12.34 The Riverine Grazier: Wednesday 25th and Wednesday 1st Nov

Wednesday October 25, 2017

The Riverine Grazier - 13

Riverine Grazier Classifieds

Phone (02) 6993 1002
Fax (02) 6993 1386
Email: advertising@thegrazier.com.au

FOR SALE

2007 MAZDA BT50 4X4 twin cab, second owner, tub, tow pack, bull bar, cruise control, air conditioned, 6 stack CD player, regularly serviced, tyres 80%, air hags recently replaced after recall. Registered to 08/2018. 265,000km, \$11,000 ono. Phone (0418) 161 824 for more information. Located Hay.

CEREAL HAY oats, wheaten rye, new season, just cut. \$120 per tonne. Call Craig 0408 505 479.

STOCK FEED barley and oats at Deniliquin \$150 per tonne. Phone (0409) 983 629.

AVAN CRUISELINER caravan 2005. Very good condition \$16,000. Two spare tyres, two gas cylinders, three-way fridge, air con, solar panel, large front storage compartment, electric water pump, two berth. Registered to March 2018. Phone 6993 8190 after 7pm.

CHURCH NOTICES

UNITING UCA
Sundays at 150 Lachlan Street.
Services - 10 am English & 5.30 pm Fijian/English.
General info 0428 932 161 SMS and Notice board.

ANGELICAN CHURCH
9am morning prayer Sunday October 29.

HAY CRC 2nd and 4th Sunday of every month 5pm at the RSL Meeting Room. Contact Ingrid Jackson 0432 949 683 or Trevor Murphy 0428 591 332.

PUBLIC NOTICES

SANDBLASTING AVAILABLE at Motormatics. 6993 4458.

GME UHF authorised dealer. Full range in stock. Motormatics 6993 4458.

SEWING MACHINE repairs mechanic will be in Hay this week from October 29 to November 2 for service and repairs to machines and overlockers. Enquiries phone Nick 0411 208 041.

CHRIS MCCLELLAND Gallery closed Friday October 27. Re-open Tuesday October 31. Enquiries 0427 873 122.

ANNUAL JUNIOR tennis competition commences this Friday for all ages - register at courts by 6pm. Play finishes about 7.30.

CAN ASSIST Rally 2 cars withdrawn, if you are interested in participating, contact Crightons ASAP.

HAY TENNIS Club calendar, birthdays, anniversaries, meetings. \$1 - entries close November 17. Entries to Hay Visitor Centre or Tennis Club house.

WANTED TO BUY

OLD FURNITURE, household and shed items. From antiques to 1970s items. That Retro Shop - Now visiting Hay. Phone Rebecca 0400 327 696.

HAY HEALTH AND FITNESS

ANNUAL GENERAL MEETING
Saturday October 28, 5.30pm at Hay Services Club.
All welcome

POSITION VACANT

Haydays Retirement Hostel are seeking a **CLERICAL & ADMINISTRATIVE EMPLOYEE** **TEMPORARY POSITION - SIX MONTHS**
The position is for 16 hours per fortnight and to cover Annual Leave.

Essential:

- Formal Business Management/Accounting qualifications
- Previous Administrative experience
- Computer skills
- Knowledge of Banking procedures.
- Information Handling
- Current National Police Check.
- A current drivers licence

For position description and application forms please contact the Hostel Manager
02 6993 1680 or manager@hayseniorcit.com
Applications close of business 4.30pm November 2, 2017.

WANTED TO RENT

WANTED TO Rent 4-5 bedroom house with shed. Contact Claudia 02 6753 5115 or 0488 441 259.

FOR SALE

ACCO TRUCK for sale. V11 190 Cummins V8 diesel. GMV 21.9. GCM 25.4. Tray 25' X 8'. Lazy axle. Located at Hay. \$7000 ono. Phone 0427 934 807.

PUBLIC NOTICE

BIG SPRINGS
Natural Water - local stockist Engine Hub, 68 Lachlan Street. 6993 1296.

DEATH & FUNERAL NOTICE

SHEIL, DOT PATSY
19.3.1932

Passed away peacefully 19.8.2017
Mother of Patricia and Walter.
Will be sadly missed.

Family and friends are invited to St Fergal's Church, Friday November 3, 2017, 10am, to celebrate her life.

ETHEL MAY HARVEY
Passed away October 22, 2017
Aged 94 years

Loved wife of Joseph Barry Harvey (dec)
Wonderful Mother, Grandmother and Great Grandmother of Roslyn, David, Branda, and families.

A graveside service will be held at the **Hay Lawn Cemetery**
At 11am Friday October 27.
Rest in peace Mum

Funeral arrangements are in the care of
Anthony and Denise Hyde - Hay Funerals.

Hay Lions Football Netball Club
ANNUAL GENERAL MEETING

Tuesday 21st
November at 6pm
@ Lions Clubrooms
Everyone Welcome

**Hay Shire Council**
EXTRAORDINARY MEETING OF COUNCIL

Notice is hereby given that an Extraordinary Meeting of Hay Shire Council will be held on **Monday 30 October 2017**, commencing at **9.30am** in the Council Chambers, **134 Lachlan Street, Hay.**

**Public Exhibition**

At its ordinary meeting held on 19 October 2017, Council resolved to place the following items on public exhibition:

- Draft Code of Meeting Practice
 - Draft Councilor Expenses and Facilities Policy
- Both items are on exhibition from Monday, 23 October to Monday, 20 November 2017. Both policies are available from Council's website at www.edwardriver.nsw.gov.au. Printed copies of the policies are available for inspection from Council's Customer Service Centre at 180 Cressy Street, Deniliquin.

Australia Day Committee

Nominations are currently invited for two (2) Community Representatives to join Edward River Council's Australia Day Committee. Nomination forms and a copy of the Australia Day Committee Charter are available from Council's website or Customer Service Centre. Nominations must be submitted to Council by **Friday, 3 November 2017.**

Further information is available from Council's website at www.edwardriver.nsw.gov.au. Please direct enquiries to Council's Customer Service Centre on 03 5888 3000 or via email at council@edwardriver.nsw.gov.au.

Adam McSwain
General Manager

THANK YOU

Greg (Ocker) Moorhouse
26.10.1950 - 06.09.2017

The family of the late Greg (Ocker) Moorhouse would like to extend our sincere gratitude to our family, relatives and friends for their love and support shown to us at this most difficult time. Our heartfelt thanks to all that send flowers, cards, food and kind words.

A special thank you to Dr Dodd and the staff of The Pioneer Lodge for their care and dedication shown to Greg during his illness. Your kindness, support and generosity was a great comfort to us and will never be forgotten.

Please accept this as our personal thank you.
Joyce, Erin and Roxanne and Tom.

CASE

Annual General Meeting
Wednesday November 1, 7pm
at 420 Macauley Street.

WATERVALLEY PTY LTD
THE HOME OF GATHERING'S GATTLIE**STATION HAND**

Large farming enterprise requires a Station Hand in the Hay region NSW

Previous experience with animal husbandry, machinery, fencing and general farm duties is essential.

Must hold current driver's licence.

Enquiries to Kym Lehmann 0427 251 071

Email resumes to: finance@watervalley.com.au

Applications close 10 November 2017

PUBLIC NOTICE
SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by **8th November 2017.**

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment

Cedric Berge
Level 4, 13 Cremorne St, Richmond, Vic 3121
Cultural.heritage@escopacific.com.au

MACKER'S MEATS
WEEKLY SPECIALS
Legs of lamb - **\$9.99/kg**
Chicken Kiev - **\$11.99/kg**
Gourmet beef schnitzel - **\$14.99/kg**
BULK SPECIALS AVAILABLE
Phone: 6993 1099

Riverine Grazier

Phone (02) 6993 1002
Fax (02) 6993 1386
Email: advertising@thegra-

FOR SALE

AS NEW Subaru XV wagon, 1,700 kms. Reg February 2017, Grey, \$30,000. Well below new price. Contact Bob 6993 1753 or 0428 931 753.

STOCK FEED barley and oats at Deniliquin \$150 per tonne. Phone 0409 983 629.

AVAN CRUISELINER caravan 2005. Very good condition \$16,000. Two spare tyres, two gas cylinders, three way fridge, air con, solar panel, large front storage compartment, electric water pump, two berth. Registered to March 2018. Phone 6993 8190 after 7pm.

ACCO TRUCK for sale. VT 190 Cummins V8 diesel. GMV 21.9. GCM 25.4. Tray 25' X 8'. Lazy axle. Located at Hay. \$7000 ono. Phone 0427 954 807.

2007 MAZDA BT50 4x4 twin cab, second owner, tub, tow pack, bull bar, cruise control, air conditioned, 6 stack CD player, regularly serviced, tyres 80%, air bags recently replaced after recall. Registered to 08/2018. 265,000km, \$11,000 ono. Phone 0418 161 824 for more information. Located Hay NSW.

CEREAL HAY oats, wheat, rye, new season, just cut. \$120 per tonne. Call Craig 0408 505 479.

PUBLIC NOTICES

SANDBLASTING AVAILABLE at Motormatics. 6993 4458.

GME UHF authorised dealer. Full range in stock. Motormatics 6993 4458.

HAY TENNIS Club calendar, birthdays, anniversaries, meetings. \$1 - entries close November 17. Entries to Hay Visitor Centre or Tennis Club house.

HAY RODEO Club meeting 4pm November 5, at South Hay Hotel.

RSL MONTHLY meeting at the RSL rooms on Friday November 3, 4pm. All welcome.

HAY GOLF CLUB presentation Saturday November 11, 7pm at the Golf Club. \$35 per head to Heather Jackson by November 6. Courtesy bus available.



Riverina Local Land Services

1080 Rabbit Baiting

Riverina Local Land Services wishes to advise the public that a 1080 baiting program for rabbits will be conducted from Monday 12 until Monday 27 November 2017.

Baiting will commence 12 November on McKinley Rd Traveling Stock Reserve, Sturt Highway Traveling Stock Reserve and B4 Bri Lank Stock Route within the Hay District. Poisoned baits will contain Sodium Fluoroacetate (1080).

Landholders, neighbours and visitors are warned not to enter baiting locations with domestic pets and to tie up dogs; non-target animals such as domestic cats and dogs may be affected. Working dogs should be muzzled while working stock and restrained during non-working periods during and after the poisoning period.

For more information: James Gillespie, Riverina Local Land Services 0419 840 160.

CASE

Annual General Meeting
Wednesday November 1, 7pm
at 420 Macauley Street.

Hay Senior Citizens Association Incorporated

ANNUAL GENERAL MEETING

NOVEMBER 13, 2017

6PM at HAYDAYS RETIREMENT HOSTEL

MACKER'S MEATS
WEEKLY SPECIALS
BARBECUE WEEK
AT MACKER'S
Hamburgers \$8.99
Flavoured sausages \$7.99/kg
Sandwich steak \$14.99/kg
BULK SPECIALS AVAILABLE
Phone: 6993 1099

CHURCH NOTICES

UNITING UCA
Sundays at 150 Lachlan Street. Services - 10 am English & 5.30 pm Pijin/English. General info 0428 932 161 SMS and Notice board.

ANGLICAN CHURCH
9am morning prayer. All welcome to attend.

HAY CRC 2nd and 4th Sunday of every month. 5pm at the RSL Meeting Room. Contact Ingrid Jackson 0432 949 683 or Trevor Murphy 0428 591 332.

BIG SPRINGS NATURAL WATER

Contact Michael McColl 0437 215 175

Local stockist Engine Hub 68 Lachlan Street 6993 1296



Shear Outback

Annual General Meeting
Thursday 23rd November 2017
5.30pm at Shear Outback



STATION HAND

Large farming enterprise requires a Station Hand in the Hay region NSW

Previous experience with animal husbandry, machinery, fencing and general farm duties is essential.

Must hold current driver's licence.

Enquiries to Kym Lehmann 0427 251 071

Email resumes to: finance@watervally.com.au

Applications close 10 November 2017

St Fergal's Catholic Parish Quotation Reverse Cycle Air Conditioning

Specifications: • Remove existing evaporative coolers and electric heaters and make good penetration to building.

• Supply and install 4 x 10KW Highwall splits that ramp up to 13 KW each and one console 6 KW behind the altar, giving a total of 60 KW with confessional having an air transfer kit.

• All units to be controlled by one wired controller located in the Church.

• Outdoor unit to be located on wall bracket with all pipework to be covered.

To arrange inspection please call 6993 1023

All written quotes should be received by the Parish Priest, PO Box 51, Hay NSW 2711 by 5pm, December, 2017.



NOTICE OF

annual general meeting

SUNDAY 12 NOVEMBER,
1PM AT SOUTH HAY HOTEL

Agenda items and apologies can be emailed to the Secretary at caillyn.jubb@bigpond.com. A light BBQ lunch will be served from 12.30pm. All players, supporters and members of the public welcome.



Health Far West Local Health District

For more information about a career in the Far West, please visit our Careers Lifestyle Website at www.farwesthealthjobs.com.au

PATIENT SERVICES

Balranald

Care Service Employee

PPT Salary: \$23.86 ph, Recruitment No: 425/84, Enquiries: Jane Bailey (02) 5071 9800 or jane.bailey@health.nsw.gov.au. Close: 12/11/17.

For an Application Kit or to apply online please go to <http://nswhealth.recruit.com.au>

We are committed to Equal Employment Opportunity. We are committed to the principles of cultural diversity and promote a smoke-free environment. Appropriate criminal record and child protection checks conducted on all positions. All employees (except casuals) are eligible for salary packaging.

DEATH NOTICE

Michael Ernest Callanan

passed away peacefully at Hay Hospital on October 30, aged 70.

Loving husband of wife Kate and loving father of Rebecca, Dale, Brett and Sam. Loving pop to his grandchildren.

DEPARTMENT OF INDUSTRY - CROWN LANDS AND WATER DIVISION (formerly DPI Water)

WESTERN MURRAY POROUS ROCK GROUNDWATER SOURCE

An application for a bore has been received from CRISTAL MINING AUSTRALIA PTY LTD for dust suppression purposes on Lot 1 DP1198331.

Objections to the granting of this approval must be registered in writing to PO Box 205, Deniliquin NSW 2710 within 28 days of this notice (A011228).

The objection must include your name and address and specify the grounds of objection. Any queries please call 03 5898 3939, Jane Taylor.



Office of Environment & Heritage

National Parks and Wildlife Service aerial shooting operation

The Office of Environment and Heritage (OEH) National Parks and Wildlife Service (NPWS) is planning to undertake an aerial shoot operation targeting feral animals within the following NPWS managed reserves:

- Lachlan Valley State Conservation Area (LVSCA) - Bocligh Station - Friday 27 October to Thursday 2 November 2017
- Yanga National Park and State Conservation Area - Friday 27 October to Thursday 2 November 2017
- DPI-W, Nimmie Cairn - Wednesday 1 November to Saturday 4 November 2017

Some visitor areas may be closed to the public for the periods indicated. The NPWS website will advertise all the local park closures. www.nationalparks.nsw.gov.au/alerts/alerts-list

For more information: please call South West Area Manager, Mr Daniel Basham on (03) 5483 9102

PUBLIC NOTICE SANDIGO SOLAR FARM

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW. The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment

Cedric Berge

Level 4, 13 Cremorne St, Richmond, Vic 3121
Cultural.heritage@escopacific.com.au

12.35 The Southern Riverina: Wednesday 25th and Wednesday 1st Nov

PAGE 16—'Southern Riverina News', Wednesday, October 25, 2017

localclassies



localclassies

Classified advertising, it works — one easy call

1300 660 886

Email: advertise@localclassies.com.au

Fax: 1300 714 453

CLASSIFIED INFORMATION

For your convenience the Southern Riverina News provides a centralised Classified booking service known as localclassies. If you would prefer dealing in person with one of our staff when placing a classified advertisement you are welcome to do so at our Finley office.

localclassies may be contacted as follows

Phone: 1300 660 886

Fax: 1300 714 453

Email: advertise@localclassies.com.au

Postal: PO Box 204, Shepparton, 3632

Office: Melbourne Road, Kialla

localclassies office hours

Our phone lines are open from:

Monday to Friday 8.30am to 5.30pm

Our Shepparton office is open from:

Monday to Friday 8.30am to 5pm

Southern Riverina News office hours:

Monday to Friday 9am to 5pm

Classified Deadline

Line Ads: 10am Tuesday

Semi Ads: 10am Tuesday

Payment

Payment for classified advertisements can be made over the phone using credit card or in person at the Southern Riverina News office: 17 Pinnauck Street, Finley, NSW, 2713.

Phone: (03) 5883 1033

For your convenience we accept Visa or MasterCard. Prepayment is required prior to publication. 30 day accounts are available to registered businesses upon credit approval.

Births / Birth Congratulations

Family members may place notices with the parents' consent

Engagements

Family members may place notices with the couple or their parents' consent.

Packages

When booking a package, please note that the full cost of the advertisement will be charged on the first edition. Therefore we are unable to offer refunds on any portion of packages once the advertisement has begun running.

Please check your advertisement

It is important to check that your advertisement is correct on the first day it appears. While every care is taken to ensure your advertisement is correct, errors can occur. If this happens to your ad please contact us the first day your advertisement appears and we will be happy to correct it as soon as we can. Credits will only be issued for the first appearance date, and no further credits shall be issued for consecutive advertisements.

Conditions of Advertising

All advertisements are subject to the approval of the Southern Riverina News. Southern Riverina News may refuse to accept or publish any advertisement.

The Southern Riverina News may omit or alter any advertisement's content, size, form, position and placement without prior notice. To the extent permitted by law, Southern Riverina News accepts no liability for any intentional or accidental omission or modification.

Southern Riverina News gives no guarantee regarding the positioning of advertisements and credits will NOT be given for advertisements appearing out of alphabetical sequence.

Southern Riverina News accepts no responsibility for the content of any advertisement.

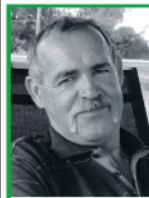
Copyright

Southern Riverina News Pty Ltd, the publisher of the Southern Riverina News is the owner of the copyright in all advertisements (including artwork) prepared by the servants and/or agents of the newspaper on behalf of its advertisers. Neither the newspaper's advertisers nor any person on their behalf are authorised to publish, reproduce or copy in any manner, any of the said advertisements (including artwork) without the prior written licence of the paper.

Privacy Policy

Our Privacy Policy includes important information about our collection, use and disclosure of your personal information. The personal information we request from you enables us to provide you with the services you require. Our Privacy Policy also makes clear the ways in which you can access your personal information and how you can make a complaint if you believe a breach of the Australia Privacy Principles has occurred. Our Privacy Policy can be viewed at www.rnng.com.au

BIRTHDAYS



HAPPY 60TH BIRTHDAY MARK

- Love from Lisa, Eliza, Emily and Lachie. xxxxxx

DEATHS

BARON, Alan.
We are deeply saddened by the death of our friend and valued work colleague, Alan Baron.
Our deepest sympathy is extended to Carolyn, Justin, Keith, Chloe, and their families.
- From all at David Walsh Gas.

BRANNICK, Peter.
19.11.1922 - 20.10.2017.
Passed away peacefully at Tumucwal Hospital, aged 94 years.
Loved and loving Husband of Pat (dec). Much loved father of Terry (dec), Jan, Colleen, Kathy and all their families.
- Remembered with Mum and Terry

remember loved ones...
localclassies 1300 660 886

DEATHS

TYNDALL, Rosemary.
11.11.1924 - 20.10.2017.
Peacefully at Finley Hospital.
Loved Mum of Helen, Mum in law of Ross, Grant of Nicole, Michael, Geoffrey and families.
Together Again With Dad, And David
A gentle nature, A heart full of gold. These are the memories. We will hold.

A Funeral Service will be held at the Catholic Church, Deniliquin on Monday, October 30, 2017 at 1 pm.

FUNERALS

BRANNICK.
Requiem Mass for the repose of the Soul of Mr Peter Brannick will be offered at St Peter's Catholic Church, Charlotte Street, Tumucwal, Thursday, October 26, 2017, commencing at 1 pm.

The Funeral will leave at the conclusion of Mass for Rural at the Tumucwal General Cemetery.

HUTSON & TUTTLE
Funeral Directors
Tumucwal 1800 622 482
Bendigo 5792 2161
Member AFDA

CHURCH SERVICES

ANGELICAN PARISH OF TUMUCWAL/FINLEY JERILDERIE

Sunday Services
Tumucwal: 8.30 am.
Finley: 10 am.
Jerilderie: 5 pm.
Third Sunday, 10 am only.
Priest: Stephen Davis
0429 845 525
(03) 5883 1262

ANGELICAN PARISH OF MULLALBA-BERRIGAN AND OAKLANDS

1st Sunday
Oaklands: 9 am.
Berrigan: 11 am.
2nd, 3rd, 4th Sunday
Tumucwal: 9 am.
Berrigan: 11 am.
Saturday before 1st Sunday
Mullalba: 6 pm.
Moor to follow.

CATHOLIC PARISH JERRILDERIE

Saturday:
8 pm - Every 1st, 3rd and 5th weekend.
Sunday:
10.30 am - Every 2nd and 4th weekend.

CATHOLIC PARISH TUMUCWAL

Saturday Vigil: 5.30 pm
Sunday: 8.30 am

CATHOLIC PARISH FINLEY

Saturday Vigil: 7 pm
Sunday Mass: 10.15 am

RIVER OF LIFE CRC

16 Denison St Finley.
Pentecostal Service
Sunday, 10.30 am.
Worship Service
Enquiries to
Pastor Val Head
0418 207 429

FINLEY COMMUNITY CHURCH

Every Sunday
Finley High School Multi Purpose Room
10 am

Mick and Nicki Wane
0421 468 010

CHURCH SERVICES

THE CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS

Mosks Sundays, 10 am, at 48 Osborne St, Finley.

Family History Centre open to public:
Monday:
10 am - 12 pm
Thursday:
10 am - 12 pm
or by appointment.

Free Service to the Community
Ph (03) 5883 1335.
Pres: Aaron Taylor
0428 768 652.

REFORMED CHURCH SERVICES

Berrigan: 1st and 3rd Sunday 9 am.
Tumucwal: 2nd and 4th Sunday 9 am.
Finley: 11 am, 7 pm.

Midweek activities for young people and adults.

Enquiries to C Monamy
Phone (03) 5881 2476
www.presbyterian-tb.com.au

BERRIGAN UNITING CHURCH

Berrigan:
Every Sunday 11 am

Oaklands:
4th Sunday 9 am

Savemake:
1st / 3rd Sundays 9 am

Phone (03) 5885 2384; (03) 5885 6521; (03) 5885 2512

UCA SOUTHERN NEWELL CONGREGATION TUMUCWAL, FINLEY JERRILDERIE

Finley: 11 am
Tumucwal: 9 am
Jerilderie: 9.30 am
Enquiries:
Myra Cowall
(03) 5883 2788
Elaine Anderson
(03) 5883 4043.

TO LET

VERY LARGE

2 B/V, fully furnished unit with built in wardrobes, air cond, stove, fridge and washing machine, close to supermarket, undercover parking. \$110 p/w. Phone (03) 5883 1211.

SERVICES

DO YOU NEED A CLEANER/CARER?
Min 3 hours. Efficient, caring and experienced. Earth friendly, \$30 per hour. Phone 0427 212 012.

Call today to place your CLASSIES AD...

PHONE: 1300 660 886

localclassies

MEETINGS

Central Coree Community Centre

A.G.M.

Monday, November 13, 2017
7.30 pm.
All Welcome

Tumucwal Public School P & C

Annual General Meeting
Wednesday, November 8, 7.00 pm

In the school library
All welcome

Jerilderie Football Club

Annual General Meeting
Tuesday, 21st October 2017
at 7pm at Club rooms
with all positions available

Finley Amateur Dramatic & Music Society

Annual General Meeting
To be held at the Finley RS Club on Wednesday November 8, 7.30 pm.
Main item for discussion: 2018 production.
All welcome
Any enquiries to: Rose Whitaker
0419 649 508.

PHONE: 1300 660 886
localclassies

PUBLIC NOTICES

NOTICE OF MEETING

THE RICE MARKETING BOARD FOR THE STATE OF NEW SOUTH WALES

Notice is hereby given that the Rice Marketing Board for the State of New South Wales will be holding its Annual Meeting in the Function Room, Heritage Motor Inn, Leeton on Wednesday 22 November 2017, commencing at 6pm. Refreshments will be provided prior to the meeting at 5.30pm.

All rice growers are invited to attend.

Carol Chiswell
BOARD SECRETARY

Sandigo Solar Farm

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW.

The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid. Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Cedric Berge Level 4,
13 Cremorne St, Richmond, VIC 3121
Cultural.heritage@escopacific.com.au

1300 660 886

localclassies

SITUATIONS VACANT

TOCUMWAL LIONS COMMUNITY HOSTEL

A position exists for a Kitchen Assistant/Cook within our aged care facility

This position will be casual to begin with but could work into permanent part time. There is shift work and weekend work involved. A current food handlers certificate would be beneficial.

A current Police check is essential. Applications should be addressed to: Lyn Morey (Manager)

Tocumwal Lions Community Hostel
PO Box 260, Tocumwal NSW 2714
lyn.morey@tocumwal.com.au
Enquiries to 5874 3650

Turf Management Apprenticeship

An opportunity exists for a positive, energetic individual to join the staff at the Tocumwal Golf & Bowls Club.

Available for immediate start, the position involves maintaining our 36 hole Golf Course. The apprenticeship is for a four year period which consists of both on site and off site TAFE training.

The successful applicant will possess a team orientated approach, a willingness to learn, and a strong work ethic. A supportive environment and excellent conditions await the right person.

Tocumwal Golf & Bowls Club currently enjoys enviable reputation as one of the must play courses in the Murray River and benefits from busy trade and a bright future.

Wages are paid in accordance with the Registered & Licensed Clubs Award 2010.

Send applications to: Ben Lucas
Course Superintendent
Tocumwal Golf & Bowls Club
PO Box 93, Tocumwal NSW 2714
Email to: course@tocumwalgolf.com
Applications close at 5pm, Wednesday November 8th 2017

TOCUMWAL GOLF & BOWLS CLUB

REGIONAL NFP ORGANISATION SEEKS NEW MEMBERS FOR BOARD OF MANAGEMENT

South West Music is a regional not-for-profit based in Deniliquin. New members are sought for the Board of Management of this dynamic and expanding program.

South West Music's mission is to promote and foster the playing, learning, appreciation and availability of music throughout South Western NSW. The Board Members and the Director work together to steer the organisation towards this mission.

Skills required:

- Knowledge of governance issues
- Budgetary experience
- Internet and media experience
- Project management
- Funding and grant applications
- Community knowledge and networking

A position on the South West Music Board of Management will enable you to contribute to decisions that affect your local community.

Our Board embraces diversity of membership to reflect the diversity of the communities we work in.

For further information and Expression of Interest Forms please contact:

Stephanie Robinson, Secretary, SWM Regional Conservatorium, PO Box 887 Deniliquin 2710
Expression of Interest Forms are also available at our office 162 Harding St.

Phone: 5881 4736
Email: admin@swmusic.org.au
www.swmusic.org.au

NSW Education

1300 660 886 localclassies

SITUATIONS VACANT

TOCUMWAL HOT BAKE

is offer a **Baker**

with pastry cooking skills.

Monday - Friday, 3am - 11am.
Occasional weekends and public holidays.

Must be able to work independently.

NSW award rates.

3 or 4th year apprentice may apply.

Please send resumes to: chrisblachford@hotmail.com or phone 0427 385 308.

LOOKING?

Phone localclassies to find out about employment rates and packages.

PHONE 1300 660 886

localclassies

MEETINGS

Central Coree Community Centre

A.G.M.

Monday, November 13, 2017
7.30 pm.

All Welcome

Finley Amateur Dramatic & Music Society

Annual General Meeting

To be held at the Finley RS Club on Wednesday November 8, 7.30 pm.

Main item for discussion 2018 production.

All welcome

Any enquiries to Ross Whitaker 0419 619 508.

1300 660 886 localclassies

SITUATIONS VACANT

Sporties Barooga

APPRENTICE GREENKEEPER

The Barooga Sports Club is seeking applications for a first year Apprentice Greenkeeper to assist in the management of our 36-hole golf course, two sports fields and surrounds.

The successful applicant should possess the following:

- An enthusiastic attitude.
- Strong work ethic.
- Interest in golf / outdoor work.
- An ongoing Commitment to the successful completion of the apprenticeship including the education component which includes attending TAFE in Wodonga.

Email application to **Matt.McLeod@sporties.com.au**
Applications close Friday 3rd November

BAXTER TRANSPORT ADMINISTRATION POSITION - FULL TIME

Person required for interesting and challenging role with our Transport Administration team located just north of Berrigan.

This role requires very good communication skills, the ability to accurately input data into our systems and financial programs and a willingness to perform general office duties as a team player.

Essential Qualifications

- Sound knowledge of the Microsoft Office Suite
- Previous experience in an Office Administration role
- Knowledge of Quicken (or similar) with experience in payroll, invoicing and accounts payable

Desired Qualifications

- Advanced knowledge of MS Excel and MS Access
- Knowledge of quality procedures, compliance, auditing, WHS and COE
- Qualifications in Business Administration or other formal Accounting or Banking Training

Attractive salary package commensurate with qualifications including assistance with travel. Opportunities exist to advance within our national and Logistics teams.

Email applications close 10.11.2017
kel@kelbaxter.com.au
www.baxtertransport.com.au

MEETINGS

Finley Show Society Inc.

Annual General Meeting

Wednesday, November 22 at 8 pm.

At the Finley RS Club.

PUBLIC NOTICES

WATERNSW LOWER MURRAY GROUNDWATER SOURCE

An application for a WATER SUPPLY WORKS APPROVAL has been received from:

STUART HENRY TUCK for a bore on Lot 1 DP612286, Parish Tocumwal, County Denison for the purpose of irrigation. (A11311).

Objections to granting of this approval must be registered in writing to WaterNSW, PO Box 453, Deniliquin NSW 2710 or email customer.helpdesk@waterNSW.com.au, within 28 days of this notice. The objection must include your name, address and specify the grounds of objection. Any queries please call 1300 662 077 or email the above. Rob Monteith, Manager Water Regulation South.

Sandigo Solar Farm

ESCO Pacific Pty Ltd intends to develop a utility scale solar farm (up to 550MW) near Sandigo, approximately 20kms south of Narrandera, NSW.

The project will involve the installation of solar panels arrays across an area of up to 1,000 hectares within the project area and a local connection to the NSW power grid.

Aboriginal People or other parties who hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) within the vicinity of the Sandigo project area are invited to participate in consultation with ESCO Pacific Pty Ltd regarding the proposed project. The consultation is to enable assessment of Aboriginal cultural heritage associated with the project area.

Aboriginal people or other parties who wish to register their interest in this consultation process are invited to respond in writing (including your name, organisation, address, contact details and phone number) to Cedric Berge by 8th November 2017.

All registered parties will be contacted to discuss the proposed project and any consultation opportunities to inform the Aboriginal Cultural Heritage Assessment.

Cedric Berge Level 4,
13 Cremorne St, Richmond, VIC 3121
cultural.heritage@escopacific.com.au

Coming Events

Advertisers Please note:

A charge of \$5.50 per listing, applies to events listed within this space if the event is to be held within a three month period. A charge of \$11.00 per listing applies if the event is to be held within a six month period. Items will be printed every issue until the event is held.

All Coming Events listings are required to be prepaid at the time of the booking.

Friday, November 17
Retreat Hall Committee Old Time Dance.

Saturday, November 18
Finley Show Society Rose Show.

Friday, December 15
Retreat Hall Committee Family Dance.

Wednesday, December 20
Xmas Xtravaganza and Carols by Candlelight, Railway Park 6.30pm - 9.30pm.

Sunday, December, 31
Retreat Hall Committee NYE Dances.

Southern Riverina News

Looking for staff...?

1300 252 774 localclassies

MARKETS

TOCUMWAL FORESHORE MARKET

This Saturday November 4

Melbourne Cup

No dogs allowed at the market.

LIVESTOCK

ALPACAS FOR SALE

Females, mixed ages.

Phone 0488 072 602.

POULTRY

GEESSE FOR SALE

From four weeks old.

Phone 0488 072 602.

Call today to place your CLASSIES AD

PHONE: 1300 660 886

localclassies

GARAGE SALE

AT 65 Kelly St, Toc on Sunday, Nov 5 from 9 am. Fridge, freezer, leather lounge suite and house lot.

Visited To Visit Priority

YARD SALE

At 363 Fowlers Rd, Strathmerton, Sat, Nov 4, Sun, Nov 5, 8 am - 3 pm. No early birds. Lots of tools, bric-a-brac collectibles and assorted treasures, books, so much more...More details photos on local BSS sites.

Visited To Visit Priority

PUBLIC NOTICES

WATER BROKERS

SOUTHERN RIVERS WATER BROKERS

Specialising in all Water Trading

Permanent & Temporary
NSW, VIC & SA.

Instant online transfers offered
ROB CROW 0428 763 264
16 Deniliquin Street, Tocumwal NSW 2714
rob.crow@southernrivers.com.au
www.southernrivers.com.au

OFFICE: 03 5874 2732 MEMBER: AWBA

Edward River COUNCIL

Temporary Office Closure 7 November 2017

Edward River Council's Customer Service Centre and the Central Murray Regional Library will be closed to the public on Tuesday, 7 November 2017 for an award approved Union Picnic Day.

Both the Deniliquin Visitor Information Centre & Picnic Heritage Centre and the Deniliquin Landfill Depot will remain open. Household rubbish collection services will not be impacted.

If you require emergency or after-hours assistance during this period, please contact Council on (03) 5888 3000 or via email at council@edwardriver.nsw.gov.au.

BOATS, MARINE EQUIPMENT

CAMERA

LEGEND SERIES 3

350 hp Chev Vortec engine, 224 hours. Bimini with removable centre high pole, 120L fuel tank. Ski locker, carpeted floor with velour seats. Clarion stereo with 4 speakers. Easy Tow tandem trailer. Custom travel cover. \$34,000. Phone 0418 646 596.

VEHICLES

WANTED

ANY UNWANTED JAP COMMERCIAL VEHICLES. ANY AGE ANY CONDITION FREE SCRAP CAR REMOVALS

Phone 1800 WEREMOVE
1800 537 366
www.1800weremove.com.au
LMCT 11s60

UTILITIES & 4WD'S

HOLDEN COLORADO

2010 Spacecab 3Lt, diesel, 5 sp manual, set up for towing caravan, dual batteries, 136,500 km. Reg. TED-138 till 08/18, \$17,500. Phone 0426 619 957.

Call today to place your CLASSIES AD...

PHONE: 1300 660 886

localclassies

12.4 Agencies Contacted

- OEH (Albury)
- The Registrar, Aboriginal Land Rights Act 1983
- Narrandera LALC
- NNTT (Canberra)
- Narrandera Shire Council
- NTSCorp
- Local Catchment Management Authority

12.5 Cultural Values Report by Mark Saddler (RAP)

Bundyi Cultural Services

Mark Saddler

Sandigo Solar Farm, Kywong, NSW.

Bundyi Cultural Services, Mark Saddler

05/02/2018



Artwork by Mark Saddler. (Copyright)

Artwork Title, Murrawarra (stand your ground, protect)

This report was compiled by Bundyi Cultural Services, Mark Saddler.

Contents:

Page 1:	Title Page.
Page 2:	Contents, Acknowledgement.
Page 3:	Travelling Stock Reserves (TSRs)
Page 4:	Objectives, Objects.
Page 5:	Due Diligence.
Page 6:	Due Diligence Flow Chart.
Page 7:	AHIMS Data Base Search.
Page 8:	Site Location Maps.
Page 9:	Site Recordings, Site Information.
Page 10:	Site Recordings, Site Information (Continued)
Page 11:	Site Report and Recommendations.
Page 12:	Site Map Directions to Sensitive Artefact areas.
Page 13:	References and End Report

“I would like to acknowledge the traditional custodians of this land, my land, “The Wiradjuri People”

What I record and find is dedicated to those who have gone before us, to those present and to those who will follow us”

Mark Saddler, Wiradjuri Gibirr (man)

Travelling Stock Reserves (TSRs)

Travelling Stock Reserves (TSRs) are parcels of Crown land reserved under legislation for use by travelling stock. Local Land Services is responsible for the care, control and maintenance of almost 500,000ha of TSRs in NSW.

TSRs provide pasture reserves for travelling or grazing stock. These reserves can be beneficial in times of drought, bushfire or flood. They are also used for public recreation, apiary sites and for conservation.

Local Land Services manages the land to strike a balance between the needs of travelling or grazing stock and the conservation of native species.

The role of Local Land Services role in managing TSRs includes:

- Authorising and monitoring stock, recreation and apiary site use
- Controlling noxious weeds
- Controlling pest animals and insects
- Provision and maintenance of fencing, watering points and holding yards
- Consideration of land management and animal health legislation.

Local Land Services has developed the first draft state-wide planning framework for TSRs to support the future management of this land. We are now keen to hear from the public with their opinions on how to manage TSRs in the future. We want to understand the values people hold important for TSRs, including biodiversity and Aboriginal cultural heritage values.

The draft state-wide framework allows for the development of TSR regional management plans to facilitate more consistent and transparent management, resourcing and reporting.

[NSW Travelling Stock Reserves Draft State Planning Framework 2016-19](#)
[TSR State Planning Framework Fact Sheet](#)
[Frequently asked questions](#)

Aboriginal objects:

Aboriginal objects are physical evidence of the use of an area by Aboriginal people. They can also be referred to as 'Aboriginal sites', 'relics' or 'cultural material'.

Aboriginal objects include:

- * Physical objects, such as stone tools, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps
- * Material deposited on the land, such as middens
- * The ancestral remains of Aboriginal people.

Handicrafts made by Aboriginal people for sale are **not** 'Aboriginal objects' under the NPW Act. Known Aboriginal objects and sites are recorded on OEH's Aboriginal Heritage Information Management System (AHIMS). If you find a site you should report it to us.

Protecting Aboriginal objects and places:

You will need to exercise due diligence in determining whether your actions will harm Aboriginal objects. The **Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW** <http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf>

This link will explain and provide practical guidance about what due diligence means. Anyone who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability objects offence if they later harm an Aboriginal object.

An Aboriginal Heritage Impact Permit (AHIP) can be issued by OEH under Part 6 of the NPW Act where harm to an Aboriginal object or Aboriginal place cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and/or Aboriginal places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened.

Find out about AHIPs, due diligence and care agreements see **Information on Aboriginal Heritage Impact Permits.** <http://www.environment.nsw.gov.au/licences/Section87Section90.htm>

Purpose of code of practice for Due Diligence.

This code of practice is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP). The National Parks and Wildlife Act 1974 (NPW Act) provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP.

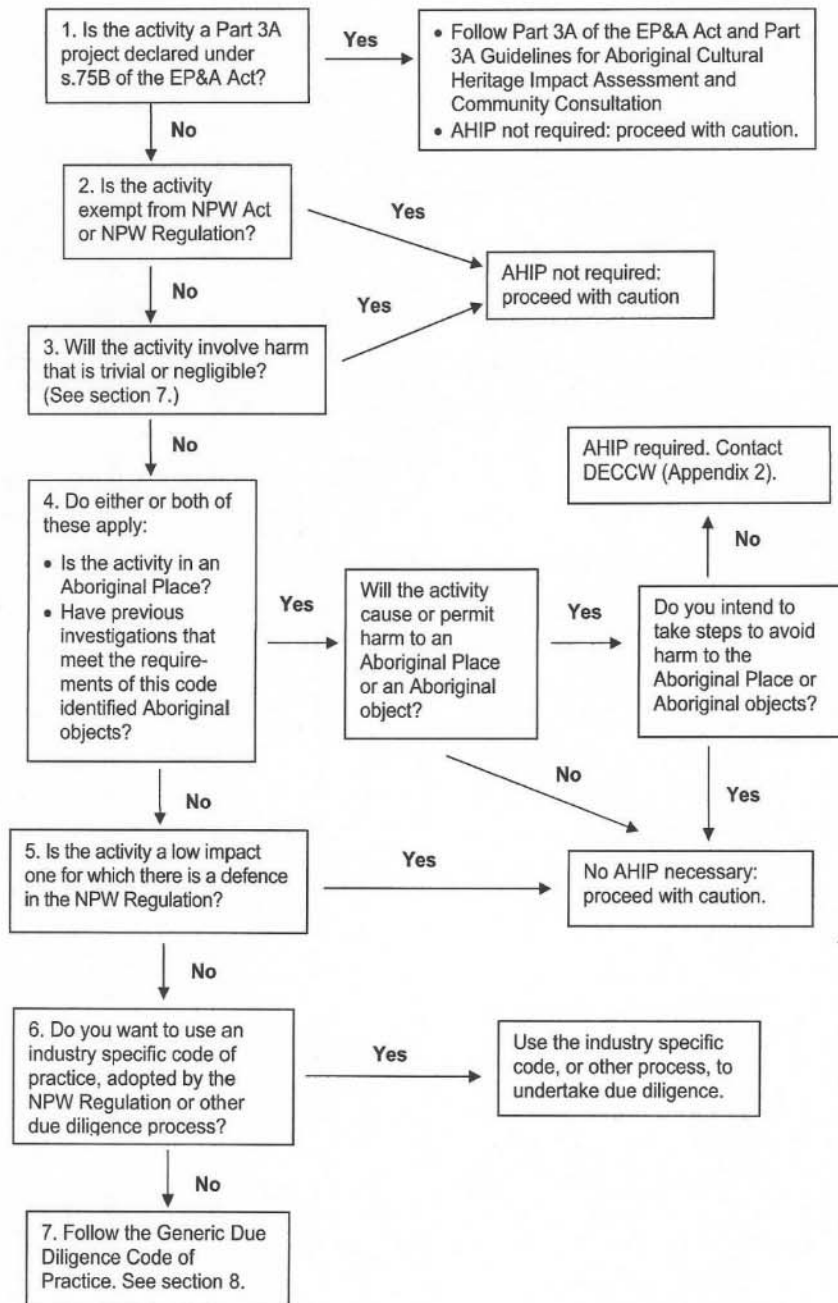
The NPW Act allows for a generic code of practice to explain what due diligence means. Carefully following this code of practice, which is adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation) made under the NPW Act, would be regarded as 'due diligence'. This code of practice can be used for all activities across all environments.

This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to: 1 identify whether or not Aboriginal objects are, or are likely to be, present in an area 2 determine whether or not their activities are likely to harm Aboriginal objects (if present) 3 determine whether an AHIP application is required.

If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an AHIP application will be required. Information about the permits and how to apply for them can be obtained through the Department of Environment, Climate Change and Water (DECCW) website at

www.environment.nsw.gov.au/licences/index.htm.

1 Do you need to use this due diligence code?



AHIMS Data Base Search.

Mark Saddler

Date: 25 January 2018

P.O.Box 8005 Koorringal Post Office
Koorringal New South Wales 2650

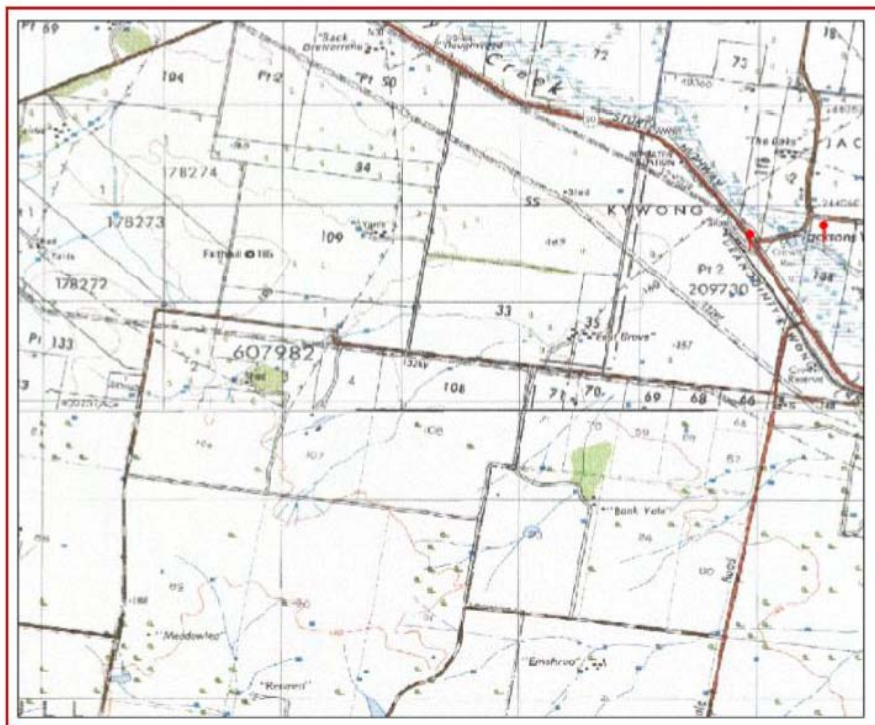
Attention: Mark Saddler

Email: marksad@live.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 470900 - 476000, Northings : 6127000 - 6128000 with a Buffer of 1000 meters. Additional Info : Checking on local sites, conducted by Mark Saddler on 25 January 2018.

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

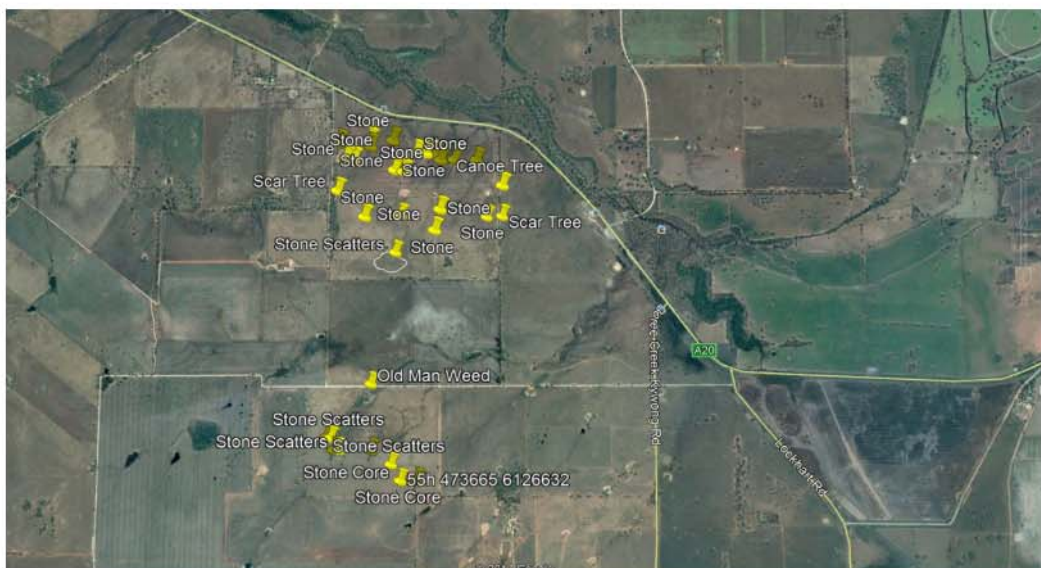
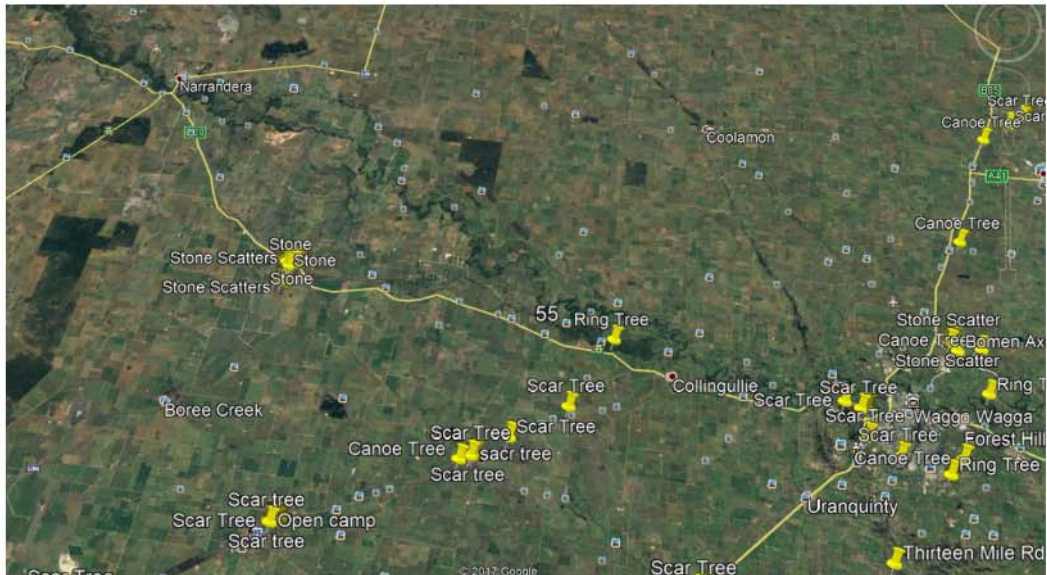


A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

44 Aboriginal sites are recorded in or near the above location.
--

0 Aboriginal places have been declared in or near the above location. *
--

Map and reference location to site:



Site recordings and location of site cards relevant to this site:

Site name	Sandigo Solar Farm, Kywong, NSW.		
Recorder	Mark Saddler		
Contact details	Ph 0412 693 030	Email:	marksad@live.com.au
Date prepared	05/02/2018	Web:	http://www.bundyculture.com.au/

AHIMS ID (Site Card ID)	Site Type	Location of Site Cards on Web Page.	Date Recorded
49-6-0124	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0125		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0126		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0129		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0128		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0127		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0130		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0135		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0134		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0133		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0132		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0131		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0130		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0131		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0136		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0153		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0154		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0132		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0133		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0139		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0138		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0137		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0136		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0135		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
49-6-0134		http://www.environment.nsw.gov.au/awssapp/login.aspx	25/01/2018
55-3-0142		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0151		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0138		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0152		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0137		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0140		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0139		http://www.environment.nsw.gov.au/awssapp/login.aspx	2/02/2018
55-3-0148		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0146		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0141		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0149		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0143		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018

55-3-0144		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0145		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0150		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018
55-3-0147		http://www.environment.nsw.gov.au/awssapp/login.aspx	5/02/2018

Site recordings and location of site cards relevant to this site: (Continued)

Stakeholder details	Responsibilities	
Cédric Bergé	Environmental Consultant - Development Manager	0402 055 443
Bundji Cultural Services, Mark Saddler	Culture Advisor, Recorder, Knowledge Holder	0412 693 030

To find out more about Cultural Site Management, rules and protection go to this these web page links for more in-depth information.

Do you need to use the due diligence code?

<http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf>

OEH **legislation** which ensures that Aboriginal cultural heritage must be considered as part of land management practices.

<http://www.environment.nsw.gov.au/conservation/aboriginalculture.htm>

Site Report and Recommendations.

05/02/2018

Sandigo Solar Farm, Kywong, NSW.

On my site inspection on beginning on the 11/12/2017 I felt an overwhelming sense of pain and lose. This area was inhabited by Wiradjuri people and was a place where many camped and lived over an extended period of time. It is also a place where many Wiradjuri people were killed and forced to move away from. To the South of the area is a creek known as "Poison Water Hole Creek" Also not to far away is an island in the river called "Massacre Island" Both of these places cause pain and lose for my people.

With regards to native animals and plants in this area, I noticed many species of bird including Grass Parrots, Willy Wag Tail, Eagles, Rainbow Lorikeet, Galah, Cockatoo, White Winged Chough, Pipit and Quail to name a few. On the day of the 24th January a very large Madhan Gugaa (Tree Goanna) was also seen by the survey crew as it was climbing one of the remaining trees in this area. The area also has good regrowth of salt bush, some native water plants and young tree suckers. This area needs to have exclusions zones and habitat left undisturbed. GPS 474241 6126501

The dams on the site, that were once old creeks and wetlands, also contains many water animals including Yabby, small fish, Turtles, Dragon Flies and a large array of Butterflies and bees.

This area has been heavily impacted by cattle and machinery. Many Aboriginal sites and items have been damaged and driven over, this needs to stop, and actions taken to stop this from happening again. Exclusion zones are needed around the scar trees, around the remaining habitat and trees and extra care and exclusions zones around the two areas that have many excellent quality artefacts remaining on the ground. Both these sites need to have test pits dug into them to determine the extent of the artefacts that are on and below the ground.

Both the sites that I have surveyed and want to re-inspect with test pits are show on the page 12 in pictures 1 and 2.

I would also ask for the planting of native trees that would enhance the area for both people and bird life. Some Bull Oak trees would also add to the area and may assist in the habitat and return of the Glossy Black Cockatoo.

When construction does start I would like to ask that I could be again involved in any ground works with regards to cultural assistance on site.

As this report has been asked for today the 5th Feb 2018 by Cedric, some AHIMS site recordings are still not on here due to the slowness of AHIMS Data Base, so ESCO need to do their due diligence by getting access to the full data from AHIMS by doing a full search via AHIMS site.

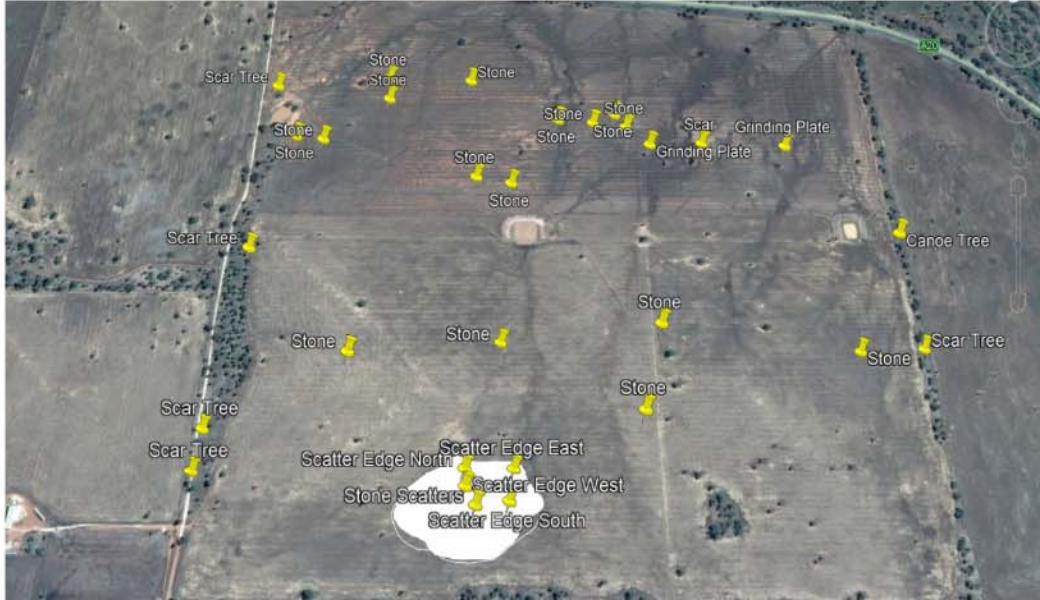
Also, items that are removed to be tagged and examined must be returned to site with a smoking ceremony to take place to ensure the safe return of items and our spirits.

Procedures to work around Aboriginal sites can be found at this link,

<http://www.aboriginalheritage.org/sites/legislation/>

Site Directions to Sensitive Artefact areas.

Site 1 55H 473926 6128804



Site 2 55H 472514 6128804



References:

OEH, <http://www.environment.nsw.gov.au/>

Local Land Services, <http://www.lls.nsw.gov.au/livestock/stock-routes>

Mark Saddler, Cultural Advisor and Knowledge holder, www.bundyculture.com.au

Goggle Earth Maps, <https://www.google.com/earth/>

Aboriginal Heritage, <http://www.aboriginalheritage.org/sites/legislation/>

Prepared by:

Mark Saddler, Bundyi Cultural Services

P.O.B 8005 Koorringal Post Office NSW 2650

Ph: 0412 693 030

Email: marksad@live.com.au

Web: www.bundyculture.com.au

Copyright Mark Saddler Artwork and Photography and Report.

13 Glossary

Absolute Dating: Is the process of determining a specific date for an archaeological or paleontological site or artefact. Some archaeologists prefer the terms chronometric or calendar dating, as use of the word "absolute" implies a certainty and precision that is rarely possible in archaeology. See also relative dating.

Adze: A stone tool made on flakes with steep flaking along the lateral margins and hafted for use as a wood working tool.

Alluvial Terrace: A terraced embankment of loose material adjacent to the sides of a river valley.

Amorphous: Showing no definite crystalline structure.

Angle Of Applied Force: The angle at which the force of flaking is applied to a core.

Angular fragment: A piece of stone that is blocky or angular.

Anisotropic: Having some physical properties which vary in different directions.

Anvil: A portable stone, used as a base for working stone tools. Anvils most frequently have a small circular depression in the centre which is the impact damage from where cores were held while being struck by a hammer stone. An anvil may be a multi-functional tool also used as a grindstone and hammer stone.

Archaeological Context: The situation or circumstances in which a particular item or group of items is found.

Archaeological site types: The archaeological site types encountered in Australia can be divided into three main groups:

Historical archaeological site: An archaeological site formed since the European settlement containing physical evidence of past human activity (for example a structure, landscape or artefact scatter).

Aboriginal contact site: A site with a historical context such as an Aboriginal mission station or provisioning point, or a site that shows evidence of Aboriginal use of non-traditional Aboriginal materials and technologies (e.g. metal or ceramic artefacts).

Aboriginal prehistoric archaeological site: A site that contains physical evidence of past Aboriginal activity, formed or used by Aboriginal people before European settlement.

These sites may be:

Artefact scatters	Scarred Trees
Isolated artefacts	Mounds
Rock shelters	Rock art
Burial Structures	Hearths
Shell middens	Quarries
Ethnographic Items	Grinding Patches

Archaeology: The study of the past through the systematic recovery and analysis of material culture. Archaeology relies heavily upon science and cognate disciplines to provide interpretations of the past life ways of the peoples under investigation.

Artefact: any movable object that has been utilised modified or manufactured by humans.

Artefact scatter: A surface scatter of cultural material. Aboriginal artefact scatters are often defined as being the occurrence of five or more items of cultural material within an area of about 10m x 10m.

Australian Height Datum: The datum used to determine elevations in Australia. The AHD is based on the mean coastal sea level being zero metres AHD.

Australian Small Tool Tradition: Stone tool assemblages found across Australia, with the exception of Tasmania, dating between 8000 BP to European contact. The tool types include hafted implements (e.g. Bondi points), bifacial and unifacial points, geometric microliths, and blades. The assemblage is named for its distinct lack of larger 'core tools' which characterised earlier assemblages.

Axe: A stone-headed axe or hatchet or the stone head alone, characteristically containing two ground surfaces which meet at a bevel.

Backed Artefact: Backed artefacts are flakes retouched until they have one or more steep and relatively thick surfaces that are covered with negative scars. Since the backing retouch was accomplished with a bipolar and/or anvil-rested knapping technique, these retouched surfaces typically show negative scars originating from two directions, a pattern that is sometimes described as "double backing". Backed pieces are a feature of the 'Australian small tool tradition', dating from about 8000 BP in southern Australia.

Bearing: An angle measured clockwise from a north line of 0° to a given surveyed line.

Bevelled Edge: An edge which has had its angle altered.

Biface: A flaked stone artefact which has flake scars on both ventral and dorsal surfaces.

Bipolar: Technique of knapping where a core is rested on an anvil and force applied to the core at an angle close to 90° in the direction of the core's contact with the anvil.

Blade: A flake at least twice as long as it is wide.

Blaze: A mark carved in a tree trunk at about breast height. This type of mark was traditionally used by explorers or surveyors to indicate a route of passage in a certain direction, or a particular camp location.

Bulb of Percussion: Is a convex protuberance located at the proximal end of the ventral surface of a flake, immediately below the ring crack.

Bulbar Scar: The negative scar on a core that results from the bulb of percussion on the extracted flake.

Burial site: Usually a sub-surface pit containing human remains and sometimes associated artefacts. Human burials can also occur above the ground surface within rock shelters or on tree platform burials.

Burin: A stone implement roughly rectangular in shape with a corner flaked to act as a point for piercing holes.

Cadastral: From the Latin, a cadastre is a comprehensive register of the real property of a country, and commonly includes details of the ownership, the tenure, the precise location (some can include GPS coordinates), the dimensions (and area), the cultivations if rural and the value of individual parcels of land.

Chert: Is a fine-grained silica-rich microcrystalline, cryptocrystalline or microfibrillar sedimentary rock that may contain small fossils. It varies greatly in colour (from white to black), but most often manifests as gray, brown, greyish brown and light green to rusty red. Its colour is an expression of trace elements present in the rock, and both red and green are most often related to traces of iron (in its oxidized and reduced forms respectively).

Cleavage Plane: A plane of weakness or preferred fracture in a rock.

Composite: An artefact made up of two or more parts joined together.

Conchoidal Fracture: describes the way that brittle materials break when they do not follow any natural planes of separation. Materials that break in this way include flint and other fine-grained minerals, as well as most amorphous solids, such as obsidian and other types of glass. Conchoidal fractures often result in a curved breakage surface that resembles the rippling, gradual curves of a mussel shell; the word "conchoid" is derived from the word for this animal. A swelling appears at the point of impact called the bulb of percussion. Shock waves emanating outwards from this point leave their mark on the stone as ripples. Other conchoidal features include small fissures emanating from the bulb of percussion.

Conjoin: A physical link between artefacts broken in antiquity. A conjoin set refers to a number of artefacts which can be been refitted together.

Contours: Lines joining points of equal height on a topographic map. Contour lines that are relatively close together depict an area of steep terrain on the earth's surface; whereas lines depicted a distance apart represent flat areas on the earth's surface.

Core: An artefact from which flakes have been detached using a hammer stone. Core types include single platform, multi-platform, and bipolar forms.

Cortex: Weathered outer surface of rock, usually chemically altered.

Crazing: Production of visible surface cracks by uncontrolled heating of rock.

Crown land: Technically belonging to the reigning sovereign, is a class of public land, provided for the enjoyment and benefit of the people.

Crushing: Abrasion, small fracturing and the formation of ring cracks, usually along an artefacts edge.

Cryptocrystalline: Rock in which the crystal structure is too fine for clear resolution with an optical microscope.

Cultural significance: Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (Australia ICOMOS Burra Charter Article 1.2).

Cultural Materials: The products of human behaviour, such as stone artefacts or food debris.

Datum: In surveying and geodesy, a datum is a reference point or surface against which position measurements are made, and an associated model of the shape of the earth for computing positions. Horizontal datum's are used for describing a point on the earth's surface, in latitude and longitude or another coordinate system. Vertical datum's are used to measure elevations or underwater depths. The previous datum used in Australia was known as the Australian Geodetic Datum (AGD). However, this was restricted because it was defined to best fit the shape of the earth in the Australian region only. The change in datum's had a major consequence to all coordinates. Both latitudes/longitudes and eastings/northings were shifted by approximately 200 metres in a north-easterly direction.

Debitage: The term debitage refers to the totality of waste material produced during lithic reduction and the production of chipped stone tools. This assemblage includes, but is not limited to, different kinds of lithic flakes, shatter, and production errors and rejects.

Decortication: Removal of cortex from a stone artefact.

Dendrochronology: Is the method of scientific dating based on the analysis of tree-ring growth patterns.

Denticulated: Describes a stone tool which has one edge worked into a series of notches giving a toothed or serrated cutting edge.

Discard: The movement of an object from its systemic context to an archaeological context.

Distal: The end of a flake opposite the bulb; the area of a flake containing its termination.

Direct Freehand Knapping: A method of holding the material to be flaked in the unsupported hand and directing the hammer stone with the other hand.

Dorsal Surface: The face of a flake which was the core surface prior to flake removal and may therefore retain negative flake scars or cortex.

Edge ground implement: A tool, such as an axe or adze which has been flaked to a rough shape and then ground against another stone to produce a sharp edge.

Edge modification: Irregular small flake scarring along one or more margins of a flake, flaked piece or core, which is the result of utilisation/retouch or natural edge damage. Edge damage refers to the removal of small flakes from the edge of an artefact.

Elevation: The height above mean sea level.

Eraillure Flake: A flake formed between the bulb of force and the bulbar scar. Sometimes the eraillure flake adheres to the core in the bulbar scar. The eraillure flake leaves no scar on the core, but always leaves a scar on the ventral surface of the flake. The eraillure flake is convex / concave (like a meniscus lens), has no distinct features on the "dorsal face", but may contain compression rings on the bulbar face.

Ethno-archaeology: The study of human behaviour and of the material culture of living societies in order to learn how items enter the archaeological record, thus allowing the formation of hypotheses as to how items of material culture entered the archaeological record in pre-history.

Ethnographic Site: Often overlooked in cultural heritage management, an ethnographic site is one which has particular spiritual or ritual significance to a particular group of people. They are more commonly referred to as 'dreaming sites' in Australia, and most appropriately recorded by someone with anthropological qualifications.

Excavation: The systematic recovery of archaeological data through the exposure of buried sites and artefacts. Excavation is a destructive process, and hence it is accompanied by comprehensive recording of every aspect.

Excavation Report: Once an excavation has finished, a report outlining the reasons, aims, methods used and findings from the excavation as well as some conclusions drawn from interpreting the artefacts.

Faceted Platform: A platform which is created by the removal of a number of flake scars.

Feather Termination: A termination of the fracture plane that occurs gradually (i.e. there are no sharp bends in the plane), producing a thin, low angled distal margin.

Feature: In excavations, a feature is something that a human made in the past that has not been or cannot be moved. Examples of this would be a house floor or a hearth (fire pit). When archaeologists are excavating, they often come across features.

Flake: A piece of stone removed from a core during the process of knapping by the application of external force, which characteristically shows traces of the processes of removal: concentric fracture ripples and a bulb of percussion. Flakes with a length: breadth ratio of 2:1 or more are usually referred to as blades. In some cases flakes are the result of shaping a block of stone into a tool of some kind. When removed from a prepared core, however, they were usually used as blanks for making tools. Primary flakes (also called decortication flakes) are large, thick flakes struck off a core when removing the cortex and preparing it for working. Secondary flakes (also called reduction flakes) are large flakes struck off a piece to reduce its size or thickness. Tertiary flakes are small flakes struck off when shaping the detail of a piece to make a specific tool. Retouching flakes are tiny, extremely thin flakes pinched or pushed off a piece to finish it, to fine-shape part of the surface, sharpen it, or resharpen it. Notching flakes are produced when putting hafting notches in stone tools.

Force: The quantity of energy exerted by a moving body; power exerted; energy exerted to move another body from a state of inertia.

Formal tool: an artefact that has been shaped by flaking, including retouch, or grinding to a predetermined form for use as a tool. Formal tools include scrapers, backed pieces, adzes and axes.

Fracture: Irregular surface produced by breaking a mineral across rather than along cleavage planes.

GDA94: Geocentric Datum of Australia. A spatial reference system which is universally implemented across Australia. The Geocentric Datum of Australia (GDA) is a coordinate reference system that best fits the shape of the earth as a whole. It has an origin that coincides with the centre of mass of the earth, hence the term 'geocentric'

Geodesy: The science and mathematical calculations of the shape and size of the Earth.

Geographic coordinates: a geographic coordinate system enables every location on the earth to be specified, using mainly a spherical coordinate system. There are three coordinates: latitude, longitude and geodesic height.

Geographic Information Systems: Is any system for capturing, storing, analysing, managing and presenting data and associated attributes which are spatially referenced to Earth. GIS is a system or tool or computer based methodology to collect, store, manipulate, retrieve and analyse spatially (georeferenced) data.

Geometric microlith: A small tool that has been fashioned from breaking apart a microblade. The piece is then retouched or backed and a small tool formed.

Gilgai soils: Soils with an undulating surface, presenting as a pattern of mounds and depressions. Gilgai soils contain swelling clays, which shrink and swell with alternate drying and wetting cycles. They display strong cracks when dry. Elements of the soil circulate and move during the shrink-swell process.

Global Positioning System: GPS is a satellite based navigation system originally developed by the United State's Department of Defence. A GPS receiver calculates a position by measuring distances to four or more satellites of a possible 24. These orbit the Earth at all times.

Grain: A description of the size of particles or crystals in rocks or sand. Coarse grained rocks have particles or crystals which are large (1mm or more), and fine grained rocks have particles which are small (0.1mm or less).

Greywacke: Hard fine-grained rock of variable composition containing some quartz and feldspar but mostly very fine particles of rock fragments.

Graticule: A network of crossing lines on a map representing parallels of latitude and meridians of longitude as defined by the projection.

Grid: The division of an archaeological site into small squares that denote different areas of excavation, making it easier to measure and document the site.

Grid coordinates: A point on a map given as an easting and northing reading. The values are given in metres.

Grindstone: The abrasive stone used to abrade another artefact or to processes food. Upper and lower grind stones used to grind plants for food and medicine and/or ochre for painting. A hammer stone sometimes doubles as a hammer stone and/or anvil.

Hammer stone: a piece of stone, often a creek/river pebble/cobble, which has been used to detach flakes from a core by percussion. During flaking, the edges of the hammer stone become 'bruised' or crushed by impact with the core. Hammer stones may also be used in the manufacture of petroglyphs.

Hand-Held: Description of the method used to immobilize the rock during knapping, it which it is held in one hand and struck by a hammer stone held in the other hand.

Hardness: Resistance of material to permanent deformation.

Hearth: Usually a sub-surface feature found eroding from a river or creek bank or a sand dune – it indicates a place where Aboriginal people cooked food. The remains of hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved with a hearth.

Heat treatment: The thermal alteration of stone (including silcrete) by stone workers to improve its flaking qualities.

Heritage: The word 'heritage' is commonly used to refer to our cultural inheritance from the past that is the evidence of human activity from Aboriginal peoples through successive periods of later migration, up to the present day. Heritage can be used to cover natural environment as well, for example the Natural Heritage Charter. Cultural heritage can be defined as those things and places associated with human activity. The definition is very broad, and includes Indigenous and historic values, places and objects, and associated values, traditions, knowledge and cultures.

Heritage Place: A place that has aesthetic, historic, scientific or social values for past, present or future generations – 'this definition encompasses all cultural places with any potential present or future value as defined above'. Heritage place can be subdivided into Aboriginal place and historical place, for the purposes of this document.

Hinge Termination: A fracture plane that turns sharply toward the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is rounded and should not be confused with a step termination.

Historic place: A place that has some significance or noted association in history.

Homogeneous: Uniform structure and property throughout the material.

Hunter-gatherer: A member of a society who gains their subsistence in the wild on food obtained by hunting and foraging.

Hydrology: Is the study of the movement, distribution, and quality of water throughout the Earth.

ICOMOS (International Council on Monuments and Sites): ICOMOS is a nongovernment professional organisation closely linked to UNESCO, with national committees in some 100 countries with the headquarters in France. ICOMOS promotes expertise in the conservation of cultural heritage. It was formed in 1965, and has a responsibility to advise UNESCO in the assessment of sites proposed for the World Heritage List. Australia ICOMOS was formed in 1976. Its fifteen member executive committee is responsible for carrying out national programmes and participating in decisions of ICOMOS.

Incipient Crack: A crack or line of weakness in the rock.

Inclusion: An impurity or foreign body in the stone that reduces the homogeneity of the rock.

Indirect Percussion: Punch technique.

Interpretation: The process of explaining the meaning or use of an artefact.

Inward Force: Force applied to the platform, and directed into the body of the core.

Isolated artefact: The occurrence of less than five items of cultural material within an area of about 100 sq. metres. It/they can be evidence of a short-lived (or one-off) activity location, the result of an artefact being lost or discarded during travel, or evidence of an artefact scatter that is otherwise obscured by poor ground visibility.

Knapper: A person who creates stone artefacts by striking rocks and causing them to fracture.

Knapping Floor: The debris left on one spot and resulting from the reduction of one block of raw material. A knapping location is a site comprised of one or more knapping floors.

Koori: Koori is an Aboriginal term used to describe Indigenous people from Victoria and southern New South Wales.

Lateral Margins: The margins of a flake either side of the percussion axis.

Latitude: The angular distance along a meridian measured from the Equator, either north or south.

Layer: The layer is the level in which archaeologists dig. All excavation sites have different numbers of layers. Archaeologists try to work out when they are moving to a new layer by cultural or man-made clues like floors, but sometimes they will go by changes in soil colour or soil type.

Longitude: The angular distance measured from a reference meridian, Greenwich, either east or west.

Longitudinal Cross Section: The cross-section of a flake along its percussion axis.

Magnetic north: The direction from a point on the earth's surface to the north magnetic pole. The difference between magnetic north and true north is referred to as magnetic declination.

Maintenance: The process of keeping an artefact in a particular state or condition. An edge which is being used is maintained by flaking off blunted portions. A core is maintained by keeping its characteristics within the limits required for certain types of flaking.

Manufacture: The process of making an artefact.

Manuport: Foreign fragment, chunk or lump of stone that shows no clear signs of flaking but is out of geological context and must have been transported to the site by people.

Map scale: The relationship between a distance on a map and the corresponding distance on the earth's surface.

Margin: Edge between the ventral and dorsal surfaces of a flake.

Material culture: A term that refers to the physical objects created by a culture. This could include the buildings, tools and other artefacts created by the members of a society.

Mercator projection: A conformal cylindrical projection tangential to the Equator. Rhumb lines on this projection are represented as straight lines.

Meridian: A straight line connecting the North and South Poles and traversing points of equal longitude.

MGA94: The Universal Transverse Mercator coordinates of eastings, northings, and zones generated from GDA94 are called Map Grid of Australia 1994 coordinates.

Microblade: A very small narrow blade.

Microcrystalline: Rocks in which the crystals are very small but visible in an optical microscope.

Microwear: Microscopic use-wear.

Moiety: A moiety is a half. Tribes were composed of two moieties (halves) and each clan belonged to one of the moieties.

Mound: These sites, often appearing as raised areas of darker soil, are found most commonly in the volcanic plains of western Victoria or on higher ground near bodies of water. The majority were probably formed by a slow buildup of debris resulting from earth-oven cooking: although some may have been formed by the collapse of sod or turf structures. It has also been suggested some were deliberately constructed as hut foundations.

Morphology: The topographical characteristics of the exterior of an artefact.

Mosaic: A number of continuous aerial photographs overlapped and joined together by way of 'best fit' to form a single non-rectified image.

Negative Bulb of Force: The concave surface left after a flake has been removed. See Bulbar Scar.

Notched: Serration or series of alternating noses and concavities.

Obtrusiveness: How visible a site is within a particular landscape. Some site types are more conspicuous than others. A surface stone artefact scatter is generally not obtrusive, but a scarred tree will be.

Overhang: The lip on a core or retouched flake, caused by the platform being undercut by the bulb on the flake removed.

Overhang Removal: The act of brushing or tapping the platform edge in order to remove the overhang in a series of small flakes.

Overlays: The Victorian Planning Provisions establish a number of different Overlays to show the type of use and development allowed in a municipality. Heritage Overlays will list places of defensible cultural heritage significance.

Patina: An alteration of rock surfaces by molecular or chemical change (but not by attrition, hence not to be confused with sand blasting).

Pebble/cobble: Natural stone fragments of any shape. Pebbles are 2-60 mm in size and cobbles are 60-200 mm in size.

Percussion: The act of hitting a core with a hammer stone to strike off flakes.

Percussion Flaking: The process of detaching flakes by striking with a percussor.

Percussion Length: The distance along the ventral surface from the ring crack to the flake termination.

Place: Place means a site, area, land, landscape, building or other works, group of buildings or other works, and may include components, contents, spaces and views. (Australia ICOMOS Burra Charter Article 1.1)

Plane of Fracture: The fracture path which produces the ventral surface of a flake.

Planning scheme: The legal instrument that sets out the provisions for land use, development, and protection in Victoria. Every municipality in Victoria has a planning scheme.

Platform: Any surface to which a fabricator is applied when knapping.

Platform Angle: 1. The angle between the platform and core face on a core. 2. The angle between the platform and dorsal surface on a flake. 3. The angle between the platform and flaked surface on a retouched flake.

Platform Preparation: Alteration of the portion of the platform which receives the fabricator by grinding, polishing or flaking. Removal of small flake scars on the dorsal edge of a flake, opposite the bulb of percussion. These overhang removal scars are produced to prevent a platform from shattering.

Platform removal flake: A flake which contains a platform on the dorsal surface.

Point of force application: The area of the platform in contact with the indenter during knapping. Also known as point of contact.

Positive Bulb of Force: Bulb of force.

Post-depositional processes: The natural or cultural processes which may differentially impact upon archaeological sediments after they deposited.

Potlids: A concave-convex or plano-convex fragment of stone. Potlids never have a ringcrack or any other feature relating to the input of external force. They often have a central protuberance which indicates an internal initiation to the fracture. Potlids are the result of differential expansion of heated rock.

Pre-contact: Before contact with non-Aboriginal people.

Post-contact: After contact with non-Aboriginal people.

Pressure Flaking: The process of detaching flakes by a pressing force. Also Static Loading.

Primary decortication: The first removal of cortex from a core, creating a primary decortication flake. The flake will have a dorsal surface covered entirely by cortex.

Procurement: Obtaining raw materials.

Provenance: The location of an artefact or feature both vertically and horizontally in the site. Archaeologists record the provenance of artefacts and features in their field books and on the artefact bag. Provenance is important because it gives archaeologists the history and context of an object, i.e., exactly where it was found on the site.

Punch: An object which is placed on a core or retouched flake and receives the blow from the percussor.

Quarry: A place where humans obtained stone or ochre for artefact manufacture. A place where stone or ochre is exposed and has been extracted by Aboriginal people. The rock types most commonly quarried for artefact manufacture in Victoria include silcrete, quartz, quartzite, chert and fine-grained volcanics such as greenstone.

Quartz: A form of silica.

Quartzite: Sandstone in which the quartz sand grains are completely cemented together by secondary quartz deposited from solution.

Radiocarbon Dating: Also called carbon dating and C-14 dating. It is used to work out the approximate age of an artefact by measuring the amount of carbon 14 it contains. This dating technique is not perfect. It can only be used on organic remains (typically wood or charcoal). Also radiocarbon is only accurate to ± 50 years, and cannot accurately date objects more than 50,000 years old.

Redirecting Flake: A flake which uses an old platform as a dorsal ridge to direct the fracture plane.

Redirection: Rotation of a core and initiation of flaking from a new platform situated at right angles to a previous platform. It produces a redirecting flake.

Reduction: Process of breaking down stone by either flaking or grinding.

Reduction Sequence: A description of the order in which reduction occurs within one block of stone.

Rejuvenate: The process of flaking in such a way that further reduction is possible or is easier. This usually involves removing unwanted features, such as step terminations, or making unsuitable characteristics more favourable, for example changing the platform angle. A Rejuvenation flake is a flake that has been knapped from a core solely for the purpose of preparing a new platform and making it easier to get flakes off a core, as it reduces that angle between platform and core surface.

Relative Dating: A general method of dating objects, which uses their relation to other objects. For example, artefacts found in lower layer are typically older than artefacts in higher layer.

Relic: Deposit, object or material evidence of human past.

Replica: A copy of a prehistoric artefact made by a modern investigator for research purposes.

Replicative Systems Analysis: A method of analysing prehistoric artefacts by creating exact replicas of all the manufacturing debris.

Reserves: The word 'reserve' derives from the land being reserved for a particular public use. Crown land retained in public ownership, but not reserved is termed unreserved Crown land.

Resharpening: The process of making a blunt edge sharper by grinding or flaking.

Retouched Flake: A flake that has subsequently been re-flaked. A flake, flaked piece or core with intentional secondary flaking along one or more edges.

Retouching: The act of knapping a flake into a retouched flake.

Ridge: The intersection of two surfaces, often at the junction of two negative scars.

Ring Crack: A circular pattern of micro-fissures penetrating into the artefact around the Point of Force Application and initiating the fracture. It appears on the ventral surface usually as a semi-circular protuberance on the edge of the platform.

Rock art: Paintings, engravings and shallow relief work on natural rock surfaces. Paintings were often produced by mineral pigments, such as ochre, combined with clay and usually mixed with water to form a paste or liquid that was applied to an unprepared rock surface.

Run: A large area of land in which squatters could pasture their stock without a lot of fencing necessary. Employed shepherds looked after various areas of the runs. Runs became consolidated pastoral holdings. Many of the runs were about 25 sq miles in area and later became parishes.

Sand: Quartz grains with only a small content of other materials. Grain size 2.00 mm to 0.05 mm.

Sandstone: A sedimentary rock composed of sand, and with only a small amount of other material, which has been consolidated by argillaceous or calcareous bonding of grains.

Sahul: This is the name given to the continent when Australia and New Guinea were a single landmass during the Pleistocene era. During this period, sea levels were approximately 150 metres lower than present levels.

Scar: The feature left on an artefact by the removal of a flake. Includes negative bulb, negative ring crack and negative termination.

Scarred tree: Scars on trees may be the result of removal of strips of bark by Aborigines e.g. for the manufacture of utensils, canoes or for shelter; or resulting from small notches chopped into the bark to provide hand and toe holds for hunting possums and koalas. Some scars may be the result of non-Aboriginal activity, such as surveyors' marks.

Scraper: A flake, flaked piece or core with systematic retouch on one or more margins.

Screen: A screen is used by an archaeologist to sift excavated soil in search of small artefacts like nails, ceramic fragments, and organic material like seeds, shell, and bone. Can be either manual (hand held) or mechanical.

Secondary Decortication: The removal of cortex from a core after the primary decortication flake. A secondary decortication flake is one that has both cortex and flake scars on the dorsal surface.

Selection: Runs were subdivided into selections for farming, agriculture and grazing homesteads. After a period of yearly rental payments, the selector could often obtain freehold ownership.

Shell midden: A surface scatter and/or deposit comprised mainly of shell, sometimes containing stone artefacts, charcoal, bone and manuports. These site types are normally found in association with coastlines, rivers, creeks and swamps – wherever coastal, riverine or estuarine shellfish resources were accessed and exploited.

Sieve: See Screen.

Significance: Significance is a term used to describe an item's heritage value. Values might include natural, Indigenous, aesthetic, historic, scientific or social importance.

Silica: Silicon dioxide.

Silcrete: A silicified sediment.

Siliceous: Having high silica content.

Site: An area designated for archaeological exploration by excavation and/or survey usually due to the presence of a concentration of cultural material.

Step Termination: A fracture plane that turns sharply towards the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is sharp, often a right angle.

Stratification: Over time, debris and soil accumulate in layers (strata). Colour, texture, and contents may change with each layer. Archaeologists try to explain how each layer was added--if it occurred naturally, deliberately (garbage), or from the collapse of structures--and they record it in detailed drawings so others can follow. Stratigraphy refers to the interpretation of the layers in archaeological deposits. Usually, the artefacts found on top are the youngest (most recent), while those on the bottom are the oldest.

Structures (Aboriginal): Can refer to a number of different site types, grouped here only because of their relative rarity and their status as built structures. Most structures tend to be made of locally available rock, such as rock arrangements (ceremonial and domestic), fish traps, dams and cairns, or of earth, such as mounds or some fish traps.

Surface Site: A site where artefacts are found on the ground surface.

Taphonomy: The study of the depositional and preservation processes which produce archaeological or paleontological material.

Termination: The point at which the fracture plain reaches the surface of a core and detaches a flake.

Tertiary Flake: A flake without cortex.

Theodolite: Instrument used by a surveyor for measuring horizontal and vertical angles.

Thermal Treatment: Alteration of siliceous materials by controlled exposure to heat.

Thickness: Measurement of the distance between the dorsal and ventral surfaces of a flake.

Thumbnail scraper: A convex edged scraper that is small, generally the size of a thumbnail.

Tool: Any object that is used.

Topographic map: A detailed representation of cultural, hydrographic relief and vegetation features. These are depicted on a map on a designated projection and at a designated scale.

Transverse Cross Section: The cross section of a flake at 90° to the length.

Transverse Mercator projection: A projection similar to the Mercator projection, but has the cylinder tangent at a particular meridian rather than at the equator.

True north: The direction to the Earth's geographic North Pole.

Tula: A flake with a prominent bulb, large platform and platform/ventral surface angle of about 130°, which is retouched at the distal end. Not to be confused with a Tula Adze.

Tula Adze: A composite tool observed ethnographically, consisting of a stone artefact (often a Tula), a wooden handle and resin.

Unidirectional Core: Core from which flakes were removed from one platform surface and in only one direction.

Unifacial: Artefact flaked on only one side.

Unit: Archaeologists lay out a grid over a site to divide it into units, which may vary in size, and then figure out which units will be dug. Archaeologists dig one unit at a time. Keeping track of specific measurements between artefacts and features gives archaeologists the ability to draw an overall map looking down on the site (called a floor plan), to get the bigger picture of the site.

Use-wear: Damage to the edges or working surfaces of tools sustained in use.

Ventral Surface: The surface of a flake created when it is removed and identified mainly by the presence of a ring crack.

Visibility: The degree to which the surface of the ground can be seen. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land-use practices, such as ploughing or grading. Visibility is generally expressed in terms of the percentage of the ground surface visible for a project area.

