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Aboriginal Cultural Heritage Assessment

AVONLIE SOLAR FARM

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INTRODUCTION

NGH Environmental has been contracted by RES Australia Pty Ltd (RES) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed Avonlie Solar Farm, located at Sandigo, south of Narrandera in New South Wales

The solar farm proposal would involve ground disturbance that has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act). The purpose of the Aboriginal Cultural Heritage Assessment (ACHA) is therefore to investigate the presence of any Aboriginal sites and to assess the impacts and management strategies that may mitigate any impact.

The Secretary of the DPE Environmental Assessment Requirements (SEARs) relating to Aboriginal heritage were as follows:

> Include an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including adequate consultation with the local Aboriginal community (SEARS for Avonlie Solar Farm 09/02/18).

This ACHA Report was prepared in line with the following:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a), and
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRP) (OEH 2010b) produced by the NSW Office of Environment and Heritage (OEH)

The proposal area is within the Narrandera Shire Local Government Area.

PROJECT PROPOSAL

The Avonlie Solar Farm proposal would comprise the installation of a solar plant with a capacity of approximately 200MW. The power generated will be fed into the National Electricity Market (NEM) at the transmission level directly into the existing TransGrid 132kV network that runs through the eastern side of the property. RES proposes to develop 608ha of land including Lot 5 DP 133396, Lots 1 and 2 DP 606800, Lot 1 DP 100042 and Lots 13, 22, 26, 30, 40, 43, 53 DP 754538 ('the proposal area'). The proposal area is agricultural land comprising several large paddocks which are generally flat, largely cleared and cultivated for pastures and grazing.

The proposal will consist of the following components:

- Solar arrays mounted on either a fixed or single-axis tracking system;
- Power conversion units;
- A substation including an elevated busbar, switchroom, a lightning protection system, current and voltage transformers and a connection into the existing 132kV TransGrid overhead line;
- A battery storage facility;
- Operations and maintenance buildings with associated car parking;
- Access points to the site via Muntz Road;

- Underground cabling;
- Internal access tracks;
- Emergency lighting;
- CCTV system including infrared (non-visible) lighting; and
- Security fencing.

ABORIGINAL CONSULTATION

The consultation with Aboriginal stakeholders was undertaken in accordance with clause *80C of the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* following the consultation steps outlined in the (ACHCRP) guide provided by OEH.

The full list of consultation steps, including those groups and individuals that were contacted and a consultation log is provided in Appendix A.

As a result of this process, three groups contacted the consultant to register their interest in the proposal. The groups who registered interest were the Narrandera Local Aboriginal Land Council (Narrandera LALC), Bundyi Aboriginal Cultural Knowledge and Warrabinya Cultural Heritage and Assessment Group . No other party registered their interest.

The fieldwork was organised and all the registered parties were asked to participate in the fieldwork.

A copy of the draft report was provided to registered parties for comment.

ARCHAEOLOGICAL CONTEXT

The assessment included a review of relevant information relating to the landscapes within the proposal area. Included in this was a search of the OEH AHIMS database. No Aboriginal sites have, previous to this survey, been recorded within the proposal area. The closest sites to the proposal area are AHIMS#49-6-0038 and AHIMS #49-6-0039 located approximately 5km east of the Avonlie proposal area. These two sites are recorded on the AHIMS system as modified trees which are located within the Sturt Highway road reserve. Of the site types that have been recorded in the general area, modified trees are the most prevalent.

Assessment of Aboriginal site models for the region suggest that there is a pattern of site location that relates to the presence of potential resources for Aboriginal use. Archaeologically sensitive areas occur in association with major water sources, including anabranches and ephemeral and relict lake systems Grey Box fringed depressions. The extreme surface disturbance in the form of 100+ years of agricultural development of the proposal area is noted. Nonetheless, given that Aboriginal people have lived in the region for tens of thousands of years, there is some potential for archaeological evidence to occur across the proposal area. This would most likely be in the form of stone artefacts, ovens and scarred trees.

SURVEY RESULTS

The survey strategy was to cover as much of the ground surface as possible within the proposal area given that the proposal was going to disturb approximately 570 hectares, within the proposal site. Survey transects were undertaken on foot across the proposal area to achieve maximum coverage. All mature trees within or adjacent to the development footprint were also inspected for evidence of Aboriginal scarring. Visibility within the proposal area was variable with visibility ranging from 90% in exposures to 20% along the fringes of the Muntz Rd access way. The average effective visibility for the wheat and barley

fields was 70% and overall was quite good. Thepaddocks with wheat crop stubble had exposures providing very high visibility with an average of around 75%.

Between the survey participants, over the course of the field survey, approximately, 60 km of transects were walked across the wheat and barley fields within the proposal area. Allowing for an effective view width of 5 m each person, this equates to a surface area examined of 97ha. However, allowing for the visibility restrictions, the effective survey coverage is reduced to 70 ha, or 70%.

Four artefact scatters, a scarred tree and 64 isolated artefacts were recorded during the survey. The sites have been recorded as Avonlie Artefact Scatter 1, Avonlie Artefact Scatter 2, Avonlie Artefact Scatter 3, Avonlie Artefact Scatter 4, Avonlie Scarred Tree 1 (AHIMS 49-6-0148).

Based on the land use history, an appraisal of the landscape, soil, level of disturbance and the results from the field survey it was concluded that there was negligible potential for the presence of intact subsurface deposits with high densities of objects or cultural material within the proposal area

Given that the majority of the proposal area has been subject to extensive modification the disturbed and fragmented nature of the scatters and a lack of intact ovens as a site type was not unexpected. The modelling for the region notes that dominance of scarred trees in the area, especially where there are remnant stands of native trees. The survey results have confirmed the presence of a scarred tree however, a large number of artefacts were also recorded which is considered a more realistic representation of Aboriginal archaeological material across the region. A small stand of remnant Grey Box outside the proposal area yielded six further Culturally Significant trees as recorded by Aboriginal Representative. These trees are not within the proposal area and are not expected to be impacted by the proposed activity.

The cultural significance of the sites is only determined by the local Aboriginal community.

POTENTIAL IMPACTS

Four archaeological sites were located within the proposal area. Subsequent to the survey, RES Pty Ltd agreed to limit harm to these sites. Accordingly, Avonlie Artefact Scatter 1, Avonlie Artefact Scatter 3 and Avonlie Artefact Scatter 4 have had either partial or total exclusion zones placed over them and the design of the Avonlie Solar Farm has been updated to reflect this exclusion (see Figure 12).

The remainder of Avonlie Artefact Scatter 1, Avonlie Artefact Scatter 2, all isolated artefacts and Avonlie Scarred Tree 1 are within the development footprint and could be impacted by the proposed activity.

The impact to the scientific values of the sites Avonlie Artefact Scatter 2 and all isolated artefacts is considered to be low. While these sites are likely to be impacted by the development, they are considered to be sites of low potential to enhance our current understanding of the Aboriginal occupation of the area.

The impact to the scientific values if the site Avonlie Scarred Tree 1 was to be impacted by the current proposal is considered high. Consequently, there is potential that the intrinsic values of the tree and the scarring may be affected by the installation of solar array panels. Any damage to the trees would result in high impact to the representative values of the trees.

The Avonlie Solar Farm proposal is classified as State Significant Development under the EP&A Act which have a different assessment regime. As part of this process and provided it is authorised by a development consent, Section 90 harm provisions under the NPW Act are not required, that is, an AHIP is not required to impact Aboriginal objects as the Department of Planning and Environment provides development approval.

RECOMMENDATIONS

It is recommended that:

1. The development must partially avoid Avonlie Artefact Scatter 1 and Avonlie Artefact Scatters 3 and 4 as per the agreed exclusion zones and development design plans detailed in this report.
2. Partial salvage through artefact collection of Avonlie Artefact Scatter 1 must be undertaken post determination and prior to construction, where the artefact scatter extends beyond the agreed exclusion zone and development design plans detailed in this report impact the site.
3. The development must avoid the site Avonlie Scarred Tree 1. A minimum 10m buffer around the tree should be in place to protect the tree root zone.
4. As complete avoidance of Avonlie Artefact Scatters 2, 3 and 4 and the remaining isolated artefacts within the proposal area is not possible or warranted, the artefacts within the development footprint must be salvaged through collection. Artefacts will be moved to a safe area within the property that will not be subjected to any ground disturbance. This can only occur post project determination and prior to construction.
5. RES Australia Pty Ltd commits to undertaking the salvage collection post project determination and prior to construction, and under the auspices of an approved Cultural Heritage Management Plan (CHMP), developed in consultation with the RAPs. This CHMP will contain provisions such that the collection and relocation of the artefacts should be undertaken:
    - by an archaeologist accompanied by representatives of the registered Aboriginal parties.
    - An Aboriginal Site Impact Recording Form will be completed and submitted to AHIMS following relocation for each site harmed or destroyed by the salvage and construction works.
    - A new site card/s will be completed once the artefacts are moved to record their new location on the AHIMS database.
    - Artefact disposition and storage will be undertaken in accordance with Requirement 26 of the Code of Practice (DECCW 2010:35-6).
    - RAPS and an archaeologist will be provided an opportunity to collect artefacts from any proposed fencing or firebreak alignments along the boundary of the proposal area, particularly within the designated exclusion areas following post project determination.
6. To address the potential for finding Aboriginal artefacts and in accordance with provisions outlined in the Avonlie Solar Farm SEARs, an Unexpected Finds Protocol (Appendix C) has been developed to outline procedures to be followed to avoid or mitigate harm to objects further to those documented in this AHCAR potentially located during *any stage* of the life of the Solar Farm project. The CHMP developed for the Salvage Collection will update this Unexpected Finds Protocol with any further project specific information to assist with avoiding and mitigating harm to any further objects located.
7. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
8. Further archaeological assessment will be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal parties and may include further field survey.

9. RES Australia Pty Ltd are reminded that it is an offence under the NSW National Parks and Wildlife Act 1974 to disturb, damage or destroy and Aboriginal object without approval.

1 INTRODUCTION

Renewable Energy Systems Australia Pty Ltd (RES) proposes to develop a solar farm at Avonlie, approximately 20 km south-east of Narrandera, New South Wales (NSW). The solar farm would occupy around 608 hectares of Lot 1/DP606800, Lot 30/DP754538, Lot 26/DP754538, Lot 13/DP754538, Lot 22/DP754538, Lot 43/DP754538, Lot 2/DP606800, Lot 53/DP754538, Lot 5/DP133396 and would generate approximately 200MW of renewable energy. NGH Environmental has been contracted by RES to prepare an Aboriginal Cultural Heritage Assessment (ACHA) to investigate and examine the presence, extent and nature of any Aboriginal heritage sites within the proposal area as part of an Environmental Impact Assessment (EIS).

The solar farm proposal would involve ground disturbance that has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act). The purpose of the Aboriginal Cultural Heritage Assessment (ACHA) is therefore to investigate the presence of any Aboriginal sites and to assess the impacts and provide management strategies that may mitigate any impact.

1.1 DEVELOPMENT CONTEXT

The development of renewable energy projects is one of the most effective ways to achieve the commitments of Australia and a large number of other nations under the Paris Agreement to reduce greenhouse gas emissions. The Avonlie Solar Farm would provide the following benefits:

- Reduction in greenhouse gas emissions.
- Provision of embedded electricity generation to supply into the Australian grid close to a main consumption centre.
- Provision of social and economic benefits through the provision of direct employment opportunities.

The establishment of a Solar Farm would therefore have both local, National and International benefits.

As part of the development impact assessment process, the proposed development application will be assessed under part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed solar farm at Avonlie is classified as a "state significant development" (SSD) under Part 4 of the EP&A Act. SSDs are major projects which require approval from the Minister for Planning and Environment. The EIS has been prepared in accordance with the requirements of the Secretary of the Department of Planning and Environment (DPE).

The Secretary of the DPE Environmental Assessment Requirements (SEARs) relating to Aboriginal heritage were as follows:

> Include an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including adequate consultation with the local Aboriginal community (SEARS for Avonlie Solar Farm 09/02/18).

1.2 THE SITE

The Avonlie Solar Farm would occupy approximately 608ha of land and includes Lot 1/DP606800, Lot 30/DP754538, Lot 26/DP754538, Lot 13/DP754538, Lot 22/DP754538, Lot 43/DP754538, Lot 2/DP606800, Lot 53/DP754538, Lot 5/DP133396. The proposal area is agricultural land comprising several large paddocks which are generally flat, largely cleared and cultivated for pastures and grazing.

The property holds several dams, an unmanned irrigation channel occurs on the east of Lot 30 DP 754538 and Sandy Creek occurs approximately 2 kilometres to the north east. There are no residences within the proposal area, and adjoining land uses include grazing and cropping for agriculture.

The proposal area has remnant native vegetation in the form of paddock trees. Remnant native woodlands occur along west of the proposal area and along Muntz Road. Planted vegetation is located between paddocks, and along the southern boundary on Muntz Road.

There is an existing TransGrid 132 kV powerline that runs through the eastern side of the property, allowing a connection to the existing power grid.

1.3 THE PROPOSAL

The proposed Avonlie Solar Farm is located approximately 20 kilometres south east of Narrandera between Muntz Road and Quilters Road, Sandigo Road and Sandigo Boree Creek Road and A20 Sturt Highway (see Figure 1 and 2) in the Narrandera Local Government Area.

The proposal area is agricultural land comprising several large paddocks which are generally flat and largely cleared and cultivated for pastures and grazing. The Avonlie Solar Farm would involve the installation of a solar plant with a capacity up to 200 MW that would supply electricity to the national electricity grid. There is an existing TransGrid 132 kV powerline that runs through the eastern side of the property, allowing a connection to the existing power grid.

The solar farm proposal would include the following elements

- Solar arrays mounted on either a fixed or single-axis tracking system
- Power conversion units
- A substation including an elevated busbar, switchroom, a lightning protection system, current and voltage transformers and a connection into the existing 132kV TransGrid overhead line
- An Energy Storage Facility
- Operations and maintenance buildings with associated car parking
- Access points to the site via Muntz Road
- Underground cabling
- Internal access tracks
- Emergency lighting
- CCTV system including infrared (non-visible) lighting
- Security fencing

The proposed infrastructure footprint is shown in Figure 3. This includes all land likely to be directly impacted by the proposal, including the grid connection options.

The Avonlie Solar Farm is expected to operate for 30 years. The construction phase of the proposal is expected to take eighteen months and commence in Autumn 2019. After the initial operating period, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability (12 months), or upgraded with new photo voltaic equipment.

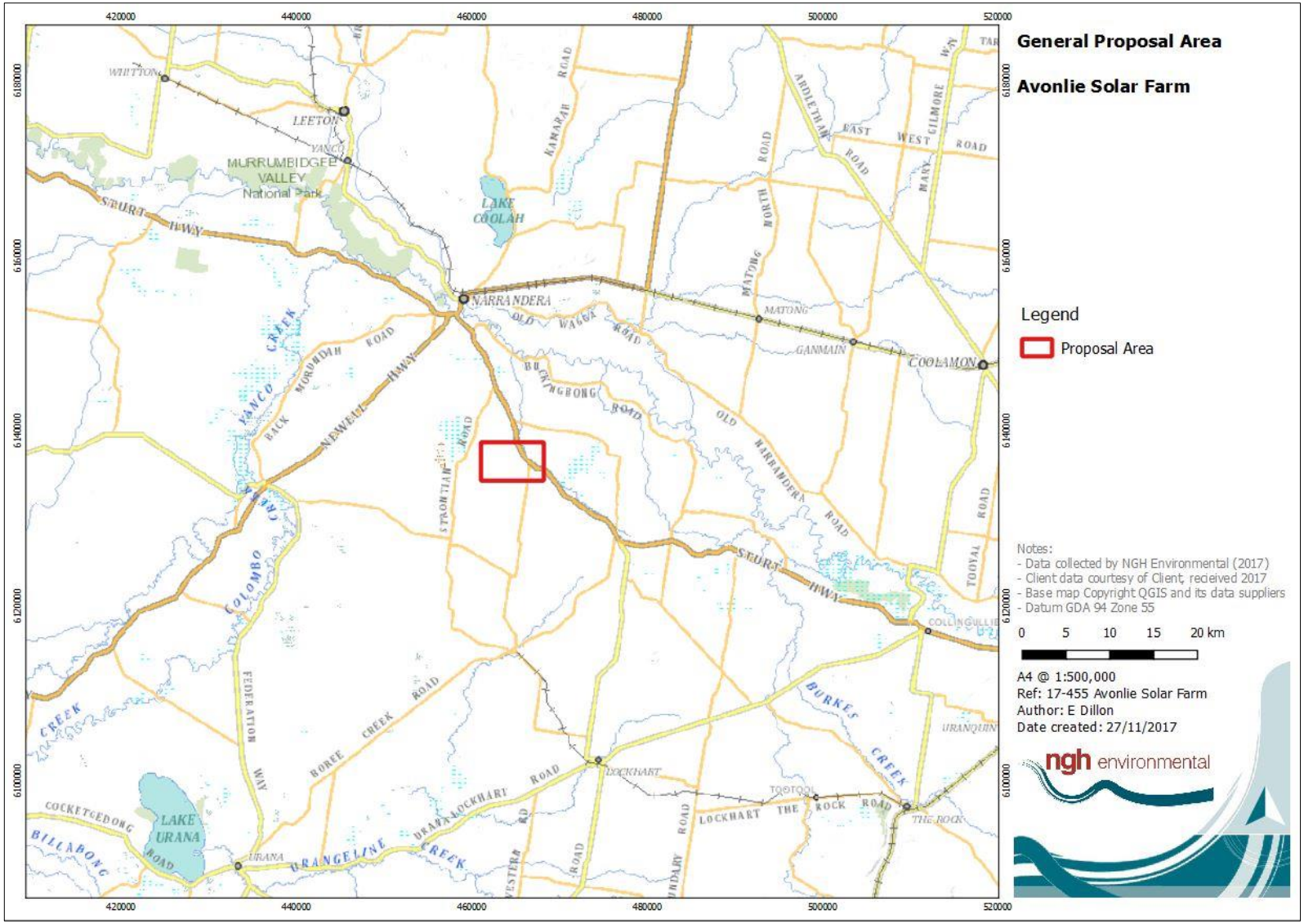

Figure 1. General location of the proposed Avonlie Solar Farm

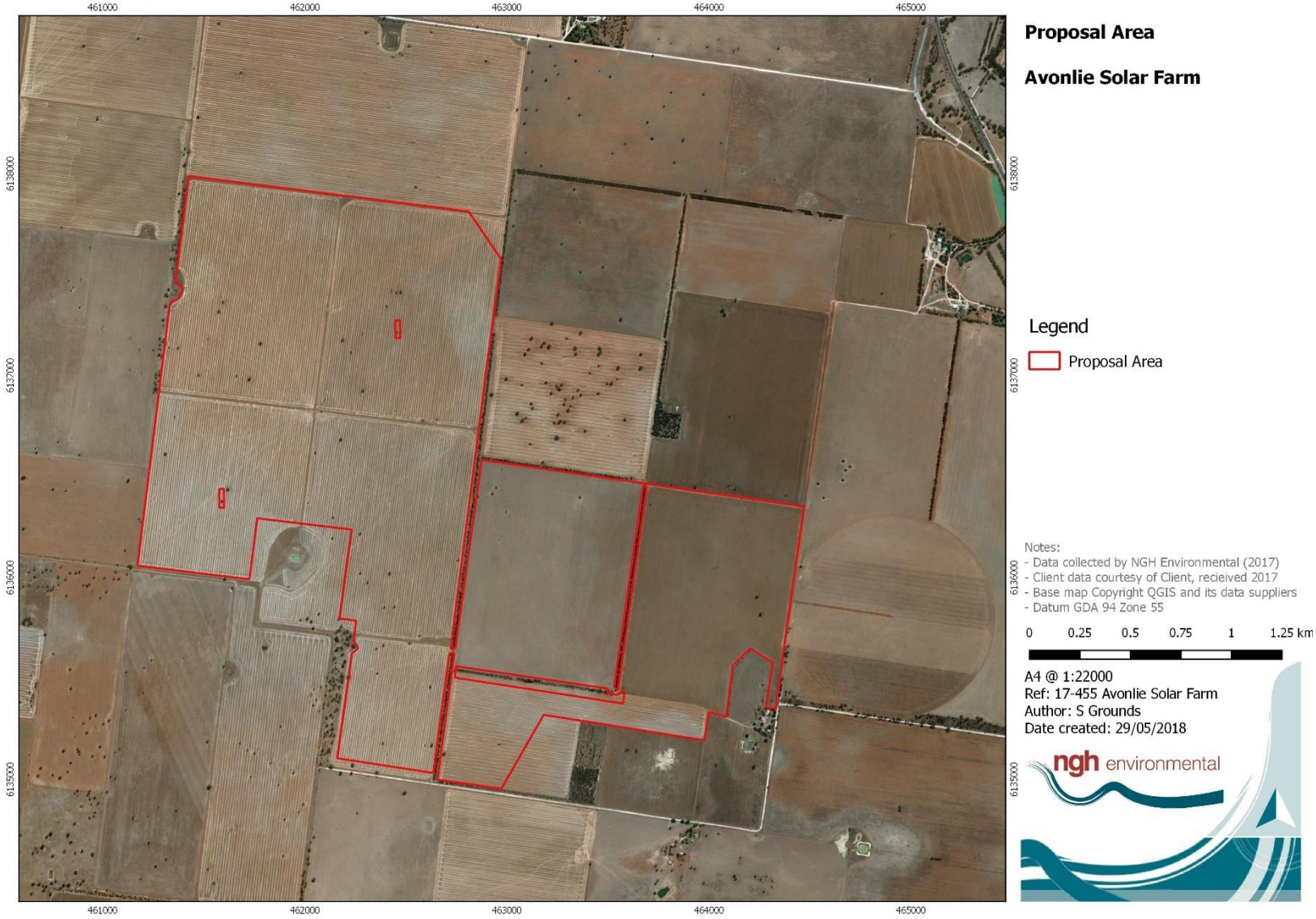

Figure 2. Proposal area of the Avonlie Solar Farm

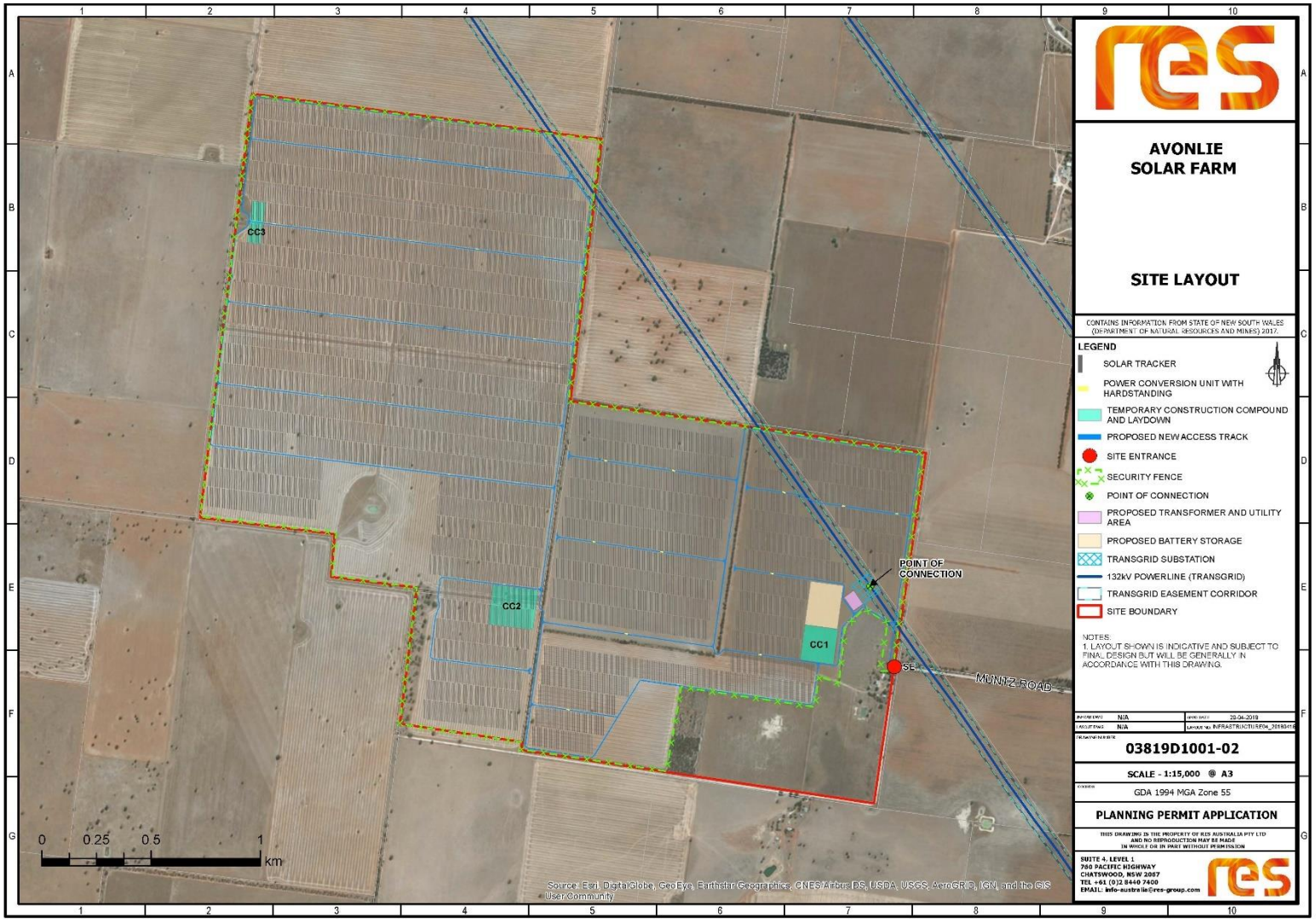

Figure 3. Proposal area layout

1.4 PROJECT PERSONNEL

The assessment was undertaken by archaeologists Shoshanna Grounds, Matthew Barber, Kirsten Bradley and Emily Dillon of NGH Environmental, including research, Aboriginal community consultation, field survey and report preparation. Shoshanna Grounds and Matthew Barber completed the field survey for this project from 26 February to 2 March 2018 .

Consultation with the Aboriginal community was undertaken following the process outlined in OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010.* Three Aboriginal groups registered their interest in the proposal. These groups were:

- Narrandera Local Aboriginal Land Council (Narrandera LALC); and
- Bundyi Aboriginal Cultural Knowledge (Bundyi ACK); and
- Warrabinya Cultural Heritage and Assessment Group (Warrabinya)

Representative who participated in the fieldwork were:

- Eddie Whyman (representing Warrabinya);
- Brett Whyman (representing Warrabinya);
- Mark Saddler (representing Bundyi ACK); and
- Chris Simpson (representing Narrandera LALC).

Further detail and an outline of the consultation process is provided in Section 2.

1.5 REPORT FORMAT

For the purposes of this assessment of the Avonlie Solar Farm, we have prepared the report in line with the following:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a), and
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRP) (OEH 2010b) produced by the NSW OEH.

The purpose of this ACHA Report is therefore to provide an assessment of the Aboriginal cultural values associated with the study area and to assess the cultural and scientific significance of any Aboriginal heritage sites. This conforms to the intention of the SEARs.

The objectives of the assessment were to:

- Conduct Aboriginal consultation as specified in clause 80c of the *National Parks and Wildlife Regulation 2009*, using the consultation process outlined in the ACHCRP*;*
- Undertake an assessment of the archaeological and cultural values of the study area and any Aboriginal sites therein;
- Assess the cultural and scientific significance of any archaeological material, and
- Provide management recommendations for any objects found.

2 ABORIGINAL CONSULTATION PROCESS

The consultation with Aboriginal stakeholders was undertaken in accordance with clause *80C of the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* following the consultation steps outlined in the ACHCRP guide provided by OEH. The guide outlines a four-stage process of consultation as follows:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The full list of consultation steps, including those groups and individuals that were contacted and a consultation log is provided in Appendix A. A summary of actions carried out in following these stages are as follows.

Stage 1. Letters outlining the development proposal and the need to carry out an ACHA were sent to the Narrandera LALC and various statutory authorities including OEH, as identified under the ACHCRP. An advertisement was placed in the local newspaper, the *Wagga Daily Advertiser* on the 11th of November 2017 and the *Narrandera Argus* on the 9th of November 2017 seeking registrations of interest from Aboriginal people and organisations. A further series of letters was sent to other organisations identified by OEH in correspondence to NGH Environmental. In each instance, the closing date for submission was 14 days from receipt of the letter.

As a result of this process, three groups contacted the consultant to register their interest in the proposal. The groups who registered interest were the Narrandera Local Aboriginal Land Council (Narrandera LALC), Bundyi Aboriginal Cultural Knowledge (Bundyi ACK) and Warrabinya Cultural Heritage and Assessment Group (Warrabinya). No other party registered their interest.

Stage 2. On the 7th of December 2017, an Assessment Methodology document for the Avonlie Solar Farm was sent to the Narrandera LALC, Bundyi ACK and Warrabinya. This document provided details of the background to the proposal, a summary of previous archaeological surveys and the proposed heritage assessment methodology for the proposal. The document invited comments regarding the proposed methodology and sought any information regarding known Aboriginal cultural significance values associated with the subject area and/or any Aboriginal objects contained therein. A minimum of 28 days was allowed for a response to the document. No comments were received on the methodology from the registered parties.

Stage 3. The *Assessment Methodology* outlined in Stage 2 included a written request to provide any information that may be relevant to the cultural heritage assessment of the study area. It was noted that sensitive information would be treated as confidential. No response regarding cultural information was received.

At this stage, the fieldwork was organised and all of the registered parties were asked to participate in the fieldwork. The fieldwork was carried out over 5 days from the 26th of February 2018 to the 2nd March 2018 by two archaeologists from NGH Environmental and representatives from the Narrandera LALC, Bundyi ACK and Warrabinya.

Following the fieldwork maps with two proposed exclusion areas where sent to Narrandera LALC, Bundyi ACK and Warrabinya. The two exclusion areas proposed encompassed high-density areas of artefacts, including a number of grindstone fragments.

Stage 4 In May 2018 a draft version of this *Aboriginal Cultural Heritage Assessment Report* for the proposal (this document) was forwarded to the RAPs inviting comment on the results, the significance assessment and the recommendations. A minimum of 28 days was allowed for responses to the document. No responses were received from the RAPs on the draft ACHAR.

2.1 ABORIGINAL COMMUNITY FEEDBACK

Community consultation occurred throughout the project. The draft report was provided to each of the Registered Aboriginal Parties (RAPs) and feedback was sought on the recommendations, the assessment and any other issues that may have been important.

In response to the results of the survey and the initial proposed exclusion areas, Mark Saddler provided a report detailing the locations that he recorded during the survey. A search of the AHIMS database subsequent to the survey indicates that Mark recorded and registered 15 Artefact sites, seven Modified Tree sites and one Aboriginal Ceremony and Dreaming site within or immediately adjacent to the proposal area.

In discussion with the RAPs in relation to the initial results from the fieldwork, it was proposed that some areas be excluded from the development proposal to avoid disturbance of the main artefact concentrations. An indicative map of exclusion areas was provided to the RAPs for comment, with two responding that they agreed with the areas. Subsequently RES advised that for safety reasons a firebreak was required on the perimeter fencing which may impact the boundary of the exclusion areas. This was also communicated to the RAPs and Mark Saddler of Bundyi ACK advised that this was fine as long as the firebreak construction was monitored and artefacts collected prior to the fire break being installed.

3 BACKGROUND INFORMATION

3.1 REVIEW OF LANDSCAPE CONTEXT

3.1.1 *Geology, Topography and Soils*

The landscape context assessment is based on a number of classifications that have been made at national and regional level for Australia. The national Interim Biogeographic Regionalisation for Australia (IBRA) system identifies the proposal area as located within the South Western Slope Bioregion in the Riverina region of NSW (DEE 2016). The base geology of the region comprises vast flood deposits of Quaternary alluvium clays and silts with sand and gravel which either cut through or overlay older Tertiary deposits. The undulating terrain to the south of the Murrumbidgee River consist largely of granite and sedimentary geology.

The proposal area is entirely with the Murrumbidgee-Tarcutta Channels and Floodplains Mitchell landscape as shown in Figure 4 (DECC 2002). The Murrumbidgee Tarcutta Source bordering dunes and Lockhart Hills and Footslopes landscapes are located approximately 700m north-east and south-east of the proposal area. The descriptions of these Mitchell Landscapes are provided in Table 1 below.

Table 1 Description of the Mitchell Landscape relevant to the proposal (DECC 2002)

Mitchell Landscape
Murrumbidgee - Tarcutta Channels and Floodplains
Channels, floodplain and terraces of Murrumbidgee tributaries on Quaternary alluvium, general elevation 200 to 400m, local relief 25m. Undifferentiated organic sand and loam on the floodplain, brown gradational loam and yellow texture-contrast soils on higher terraces. River red gum (*Eucalyptus camaldulensis*) gallery woodland on banks, yellow box (*Eucalyptus melliodora*) and grey box (*Eucalyptus microcarpa*) open woodland on floodplain and terraces.
Murrumbidgee Tarcutta Source bordering Dunes
Low sandy rises on Quaternary sand blow from adjacent river channels, general elevation 150m, local relief <5m. Red-brown gradational profile of loamy sand, white cypress pine (*Callitris glaucophylla*) and grasses.
Lockhart Hills and Footslopes
Isolated steep rocky ridges on Devonian conglomerate, quartz sandstone and limited siltstone standing as prominent peaks and ridges above the plain. General elevation 250 to 550m, local relief 80 to 200m. Crests with thin stony sands and rock outcrop, benched slopes with alternating rock outcrop and low cliffs and benches with gradational or occasional red-brown texture-contrast soils. Wide foot slopes with layered colluvium, sandstone boulders and stony brown harsh texture-contrast soils. Tumbledown red gum (*Eucalyptus dealbata*), red ironbark (*Eucalyptus sideroxylon*), red stringybark (*Eucalyptus macrorhyncha*), hill oak (*Allocasuarina verticallata*), daphne heath (*Brachyloma daphnoides*), golden wattle (*Acacia pycnantha*), and grasses. White cypress pine (*Callitris glaucophylla*) around the base of the hill and black cypress (*Callitris endlicheri*) on the crests.

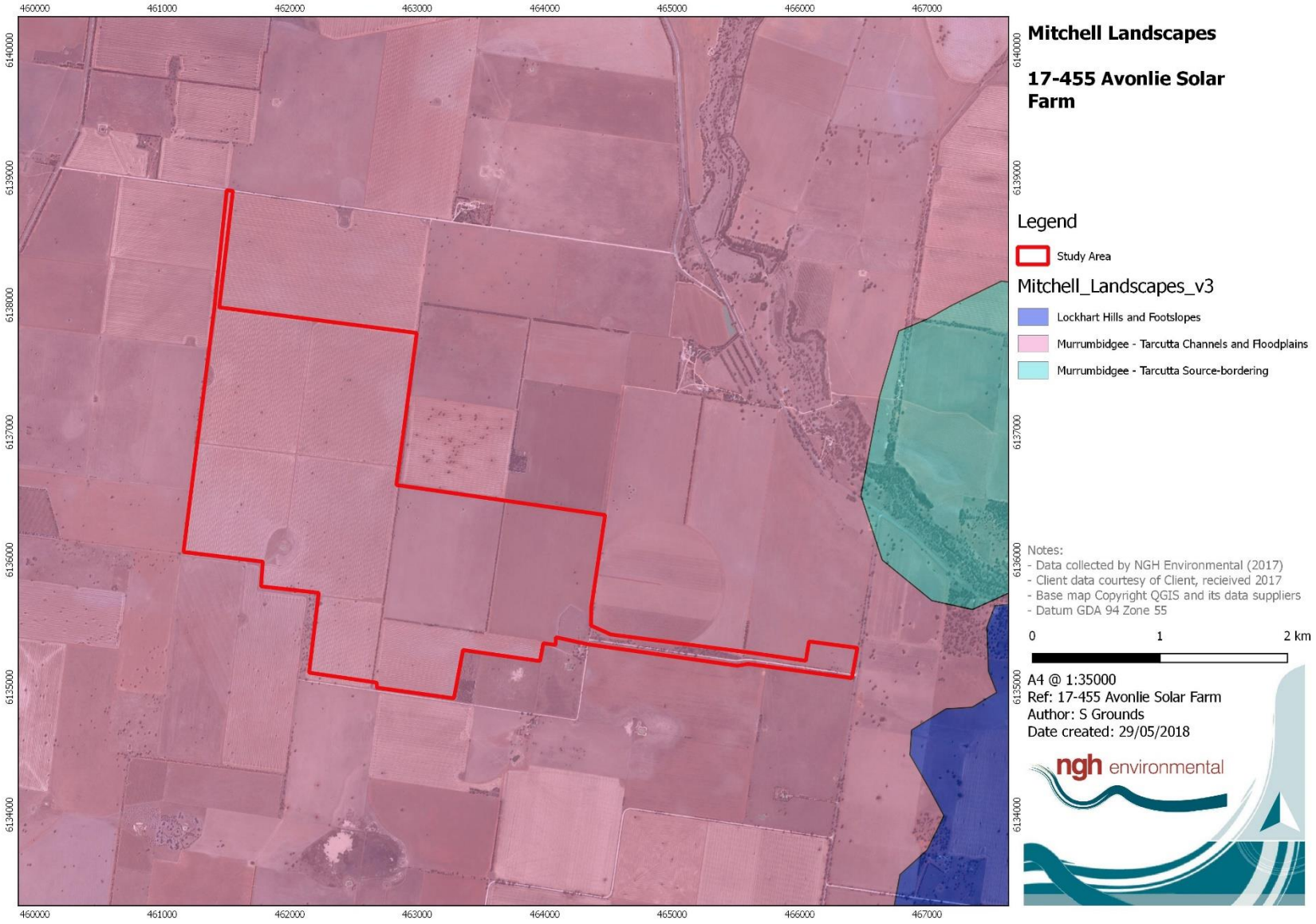

Figure 4. Location of Mitchell landscapes

The Murrumbidgee Tarcutta Channels and Floodplains land system unit covers the proposal area. The area is devoid of naturally occurring bedrock outcrops which would indicate that stone material for artefacts would have to be brought to the area. There is limited topographic variation within the proposal area which is flat with only marginal depressions observed in some locations.

The Murrumbidgee River is a dominant feature within the Riverine landscape and the key factor in the formation of the landforms present. Through the Pleistocene, the river system migrated across the plain forming a complex series of channels, levees, source bordering dunes, lunettes and lakes. Some of these features are visible today and along with more recent Holocene features such as cut off meanders or billabongs, swamps and many distributary creeks and anastomosing channels, which together form a highly complex landscape of overlapping and interwoven land units. The current proposal area is approximately 11 km south of the Murrumbidgee River and Sandy Creek is approximately 1.2 km north east of the proposal area. Sandy Creek is a fourth order stream (Class 2 waterway) in accordance with Strahler stream classification system (Strahler 1952). There are no prescribed water courses within the proposal area.

Manmade irrigation channels extend across the eastern part of the proposal area. Most of these irrigation channels are involved in existing agricultural activities on the property and are periodically ploughed. The irrigation channels are shallow, and grass lined. The proposal area also holds two farm dams. These dams have no fringing vegetation and provide poor habit for native fauna. Dams within the proposal area are currently used for watering stock.

Soils within the proposal area are characterised by the Australian Soil Classification as being Chromosols which have a strong texture contrast between the A and B horizon. Soil profiles taken from within the proposal area from 1992 by Mr Dacre King (NSW Soil and Land Information System) identified the soil type as Red-brown earth, consistent with the Australian Soil Classification. Red-brown earths are defined as having a sandy loam to light clay topsoil overlying a clay subsoil. This type of soil is subject to hard setting, observed in the soil profile recorded by King. These soils have been largely confined to the Riverine Plain of south eastern Australia and are the most widespread soils used for agriculture.

The proposed solar farm area has been heavily modified for the purposes of cropping and grazing. This has included extensive ripping and cultivated management practices, the extensive clearing of native vegetation, ploughing and earth moving for the construction of dams. Additionally, there is an existing TransGrid 132kV line which runs east-west across the southern part of the proposal area.

3.1.2 *Flora and Fauna*

The biodiversity assessment carried out by NGH Environmental identified a number of distinct plant community types within the proposal area including 8ha of remnant Grey Box (Eucalyptus microcarpa) on the Western side of the development site, 42ha of planted Old Man Saltbush (*Atriplex nummularia*) used for grazing of stock, and 14ha of remnant Grey Box/White Cypress Woodlands along Muntz Road and Sandigo Road.

Cleared areas in the subject land are primarily agricultural land used for cropping and grazing. These areas have been frequently cultivated and lack any remnant native vegetation. Cleared areas provided very little in terms of native fauna habitat but could provide limited foraging habitat for raptors, parrots, cockatoos and macropods.

Approximately 95% of the proposal area is characterised as a highly disturbed and modified within cropping and pastoral areas. In these areas, there is a prevalence of exotic or planted non-local groundcover species. These include vegetation such as Wheat (*Triticum aestivum*) and Barley (*Hordeum* sp.).

3.1.3 *Historic Land Use*

The Narrandera region has a long history of intensive agricultural and pastoral use. The majority of the area has been utilised for grazing and crop production since European settlement in the early 1800's. The location of the proposed Avonlie Solar Farm is within pastoral and agricultural fields and therefore has been subject to considerable impacts from farming for many decades. Overall, the project area would be categorised as highly disturbed through consistent farming practices over many decades, including ploughing.

Overall, the proposal area would be categorised as highly disturbed through continual modification for farming activities over many decades.

3.1.4 *Landscape Context*

Most archaeological surveys are conducted in a situation where there is topographic variation and this can lead to differences in the assessment of archaeological potential and site modelling for the location of Aboriginal archaeological sites. However, as already noted, the proposal area has limited topographic variation as it is generally flat.

The initial desktop survey indicates that the proposal area consists of low relief alluvial floodplain and drainage lines.

Based on the proposal areas proximity to Sandy Creek and studies in the surrounding region the entire proposal area has a moderate potential for further Aboriginal cultural material to occur. Sites are expected to be identified in close association with water sources and on the edges of drainage lines, particularly in areas of slightly elevated ground.

3.2 REVIEW OF ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.2.1 *Ethnohistoric Setting*

Cultural areas are difficult to define and "must encompass an area in which the inhabitants have cultural ties, that is, closely related ways of life as reflected in shared meanings, social practices and interactions" (Egloff *et al*. 2005:8). Depending on the culture defining criteria chosen - i.e. which cultural traits and the temporal context (historical or contemporary) - the definition of the spatial boundary may vary. In Australia, Aboriginal "marriage networks, ceremonial interaction and language have been central to the constitution of regional cultural groupings" with the distribution of language speakers being the main determinate of groupings larger than a foraging band (Egloff *et al*. 2005:8 & 16).

The proposal area is within an area identified as part of the Wiradjuri language group. This is an assemblage of many small clans and bands speaking a number of similar dialects (Howitt 1996, Tindale 1974, MacDonald 1983, Horton 1994).

The Wiradjuri language group was the largest in NSW prior to European settlement. The borders were however, not static, they were most likely fluid, expanding and contracting over time to the movements of smaller family or clan groups. Boundaries ebbed and flowed through contact with neighbours, the seasons and periods of drought and abundance.

It was the small family group that was at the core of Aboriginal society and the basis for their hunting and gathering life. The immediate family camped, sourced food, made shelter and performed daily rituals together. The archaeological manifestations of these activities are likely to be small campsites, characterised

by small artefact scatters and hearths across the landscape. Places that were visited more frequently would develop into larger site complexes with higher numbers of artefacts and possibly more diverse archaeological evidence.

These small family units were part of a larger band which comprised a number of families. They moved within an area defined by their particular religious sites (MacDonald 1983). Such groups might come together on special occasions such as pre-ordained times for ceremonies, rituals or simply if their paths happened to cross. They may also have joined together at particular times of the year and at certain places where resources were known to be abundant. The archaeological legacy of these gatherings would be larger sites rather than small family camps. They may include large hearth or oven complexes, contain a number of grinding implements and a larger range of stone tools and raw materials.

Identification and differentiation of such sites are difficult in the field. A family group and their antecedents and descendants occupying a particular campsite repeatedly over a long period of time may leave a similar pattern of archaeological signatures as a large group camped over a shorter period of time.

The explorers Hume and Hovell in 1824 were the first Europeans to mention Aboriginals in the Wagga Wagga area as they noted fires and footprints as they explored rivers in the area. European settlers started arriving in the district in the 1830s, after Captain Charles Sturt passed through the region in 1829 (NGH 2013:5). The ethno-history of Wagga Wagga compiled by Green (2002) notes that between the 5th and 8th of December 1829 two Wiradjuri men guided Charles Sturt's expedition from Wantabadgery past the future site of Wagga Wagga to Mount Arthur (Green 2002:106).

It wasn't long after European arrival in the area that the Aboriginal population began to decline, due to diseases such as small pox and influenza as well as dispossession from traditional lands and acts of violence against the Aboriginal people which all caused great social upheaval and partial disintegration of the traditional way of life. This meant that access to traditional resource gathering and hunting areas, religious life, marriage links and access to sacred ceremonial sites were disrupted or destroyed.

However, despite these disruptions, Aboriginal people continued to maintain their connections to sites and the land in the early days of European settlement. Where Aboriginal people were taken to places like Warangesda, a mission established near Darlington Point in 1880, or Brungle Reserve between Gundagai and Tumut, people were able to maintain at least some form of association with country and maintain traditional stories.

Early settlers and others who wrote about the Wiradjuri people and customs differentiated between the origin of some groups, referring to people as the Lachlan or Murrumbidgee tribes, or the Levels tribe for those between the two major rivers (Woolrych 1890). The extent of the Wiradjuri group means that there were many different environments that were exploited for natural resources and food. Like everywhere in Australia, the Wiradjuri people were adept at identifying and utilising resources either on a seasonal basis or all year round.

Terrestrial animals such as the possum were noted by many early observers as a prime food source and the skins were made into fine cloaks that evidently were very warm (Evans 1815, Oxley 1820, Mitchell 1839). Kangaroos were also eaten and their skins made into cloaks as well. A range of reptiles and other mammals were food sources. Fish and mussels would have been prevalent from the rivers and creeks and insects were also a common food type, in particular grubs and ants and ant eggs (Pearson 1981, Fraser 1892). Birds including emus were common as a food source, often being caught in nets made from fibres of various plants such as flax, rushes and kurrajong trees. Bird hunts were also often undertaken as group activities, with emus, ducks and other birds targeted through groups of people flushing them out and driving them into pre-arranged nets (Ramson 1983).

Plant foods were equally as important and mostly consisted of roots and tubers, such as *Typha* or Cumbungi whose tubers were eaten in late summer and the shoots in early spring. Other edible plants from the Wiradjuri region include the Yam Daisy or *Murnong*, eaten in summer and autumn, the Kurrajong seeds and roots, Acacia seeds and other rushes (Gott 1982).

Some of the early settlers and pastoralists, surveyors, explorers, administrators and others observed traditional Aboriginal activities, including ceremonies, burial practices and general way of living, and recorded these in letters, journals and books. These early records of Aboriginal lifestyle and society within the region assist in understanding parts of the traditional Aboriginal way of life, albeit already heavily disrupted at the time of the observations and through the eyes of largely ignorant and uninformed observers.

The early observations also note that some weapons and tools were carried, some made from wood such as spears, spear throwers, clubs, shields, boomerangs, digging sticks, bark vessels and canoes. Other materials were observed in use such as stone axes, shell and stone scrapers and bone needles.

In an archaeological context, few of these items would survive, particularly in an open site context. Anything made from bark and timber and animal skins would decay quickly in an open environment. However, other items, in particular those made of stone would survive where they were made, placed or dropped. Shell material may also survive in an archaeological context. Sources of raw materials, such as the extraction of wood or bark would leave scars on the trees that are archaeologically visible, although few trees of sufficient age survive in the modern context. Outcropping stone sources also provide clues to their utilisation through flaking, although pebble beds may also provide sources of stone which leave no archaeological trace.

3.2.2 *AHIMS Search Prior to Survey*

The Aboriginal Heritage Information Management System (AHIMS) is maintained by OEH and provides a database of previously recorded Aboriginal heritage sites. A search provides basic information about any sites previously identified within a search area. However, a register search is not conclusive evidence of the presence or absence of Aboriginal heritage sites, as it requires that an area has been inspected and details of any sites located have been provided to OEH to add to the register. As a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area.

A search of the AHIMS database was conducted over an area approximately 50 km east-west x 50 km north-south centred on the proposal area, was undertaken on the 27th of November 2017. The AHIMS Client Service Number was: 315016. There are 112 Aboriginal sites recorded in the search area. No declared Aboriginal Places are held for the search area in the database. Table 1 below shows the site types previously recorded in the region and Figure 5 shows the location of AHIMS sites in relation to the Avonlie Solar Farm prior to undertaking the pedestrian survey in February of 2018.

Table 2 Breakdown of previously recorded Aboriginal sites in the region.

Site Type	Number
Modified Tree	66
Artefact	22
Earth Mound and Hearth	13
Conflict	4
Burial	3
Burial and artefact	2
Artefact and Stone Quarry	1
Restricted/ Unknown	1
TOTAL	**112**

None of these previously recorded sites are located within the current proposal area. The closest sites to the project area are three scarred trees located approximately 3.3 km south-east of the proposal area along the Sturt Highway that were recorded by Mr Mark Saddler. No survey report is available on AHIMS in relation to these three sites.

There is a dominance of scarred trees in the area especially where there are remnant stands of native trees. Scarred trees provide a tangible link to the past and provide evidence of Aboriginal subsistence activities through the deliberate removal of bark or wood. It is likely that the lower number of other site types in the area surrounding the proposal area is related to lack of surveys in the area and the more obtrusive nature of scarred trees when compared to small artefact scatters and isolated stone artefacts.

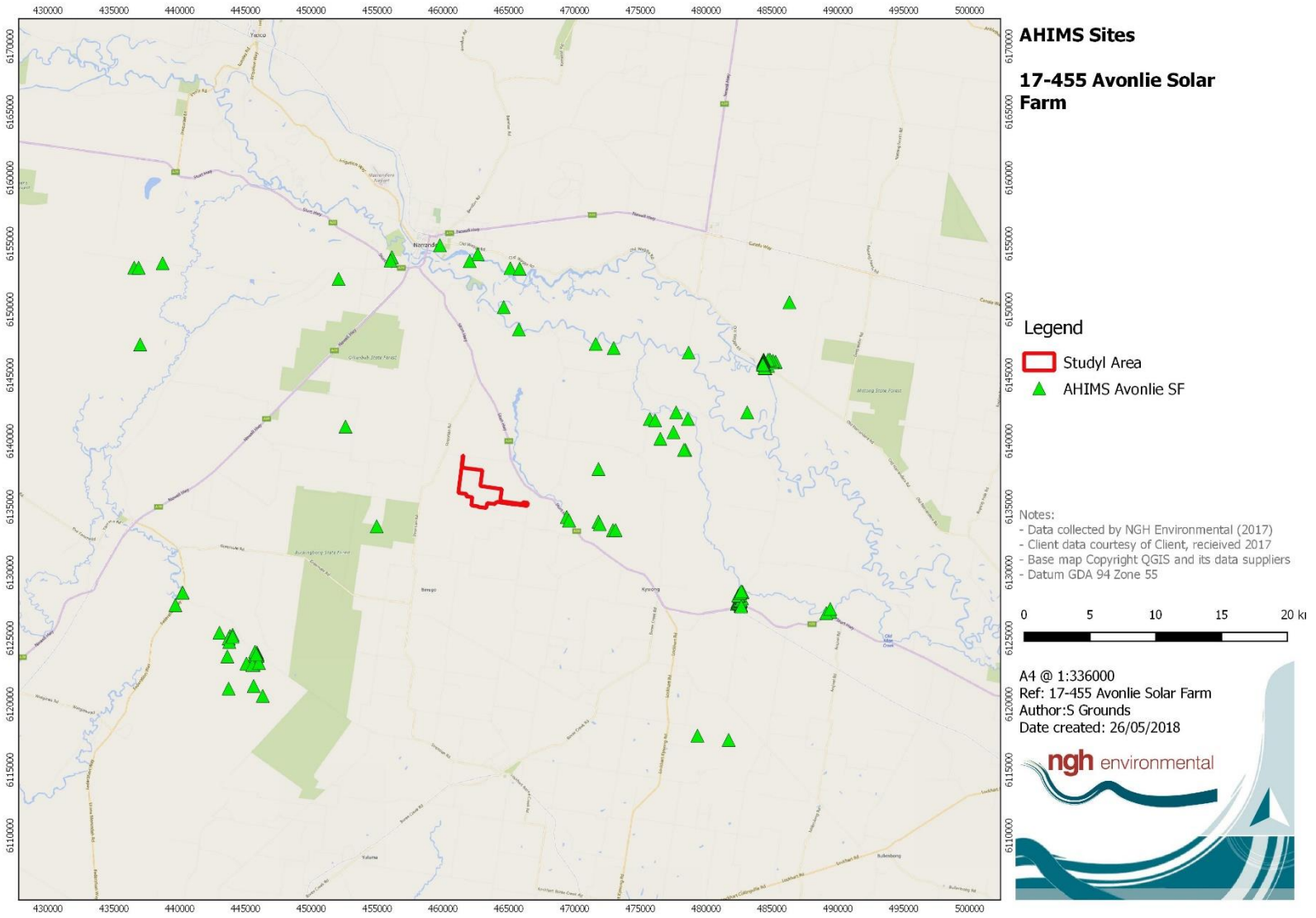

Figure 5. Location of know sites recorded with AHIMS in relation to the proposed Avonlie Solar Farm.

3.2.3 *Previous archaeological studies*

The following are summaries of those archaeological survey reports that have been completed in the Narrandera area and in close proximity to the current assessment area, these have been primarily driven by development and infrastructure requirements.

In 1985 McIntyre carried out a survey for a 167 km transmission line between Darlington Point and Deniliquin. A total of 27 Aboriginal archaeological sites were recorded with one associated with historic features. The site types recorded were primarily scarred trees with artefact scatters, hearths and mounds also recorded. Artefacts were manufactured from silcrete, quartz, basalt, siltstone, chert and siliceous rock. All scarred trees recorded during the survey were Grey Box trees. McIntyre noted that the majority of the sites recorded were clustered around existing water courses. It was suggested that such areas were favoured by Aboriginal people as they provided a number of resources such as food, water and shade.

In 1992 Woods undertook the assessment of areas in the Wagga Wagga regions for the establishment of a naval communications base. The area assessed comprised of 150 ha for the receiving station and 1.1 ha for the transmitting station. A total of fourteen oven mounds, 14 modified trees, ten hearths features and eight open camps sites were recorded. The majority of sites were located adjacent to watercourses.

In 1995 Hamm carried out a survey for a 117 km optical fibre cable to link telephone exchange networks from Darlington Point, Coleambally, Finley and Jerilderie. A total of 20 sites were recorded during the survey with three scarred trees located between Darlington Point and Coleambally and 17 scarred trees recorded between Finley and Jerilderie. All scars were on Yellow Box trees.

In 1997 Australian Archaeological Survey Consultants assessed several unused gravel pits at Hull's Quarry located between Wagga Wagga and Narrandera that were identified for further extraction approximately 22 km east of the current assessment area. The study area was 5 km north of Old Man Creek and 5 km south of the Murrumbidgee River. No sites were recorded and it was noted that this may be due the distance from a reliable water source. It was also suggested that the absence of sites may be the result of prior disturbances in the area.

In 1998 Central West Archaeological and Heritage Services (CWS) surveyed the 40 km proposed optic fibre cable route between Morundah and Dundure that followed the Newell Highway (CWS 1998a). This survey route is approximately 26 km south-west of the current assessment area. A total of five sites were recorded during the survey. The sites were three mounds, a scarred tree and a mound/open campsite with an artefact scatter. The mounds were all located in close proximity to watercourses (Yanco Creek). Five additional areas of potential archaeological sensitivity were also identified at sandhill and/or dune deposits along the proposed route for a total of 2.6 km. It was recommended that due to the sensitivity of these landforms that works should be monitored in these locations by a LALC representative or an archaeologist. It was noted that the potential for sites over the majority of the survey was low given that presence of black soils and the generally high level of surface disturbance.

In 1998 CWS surveyed the 22 km proposed optic fibre cable route between Narrandera and Euroley (CWS 1998b). No sites were recorded during the survey however two archaeologically sensitive sand hills were located along the Sturt Highway approximately 9.5 km and 16 km west of Narrandera. It was recommended that due to the sensitivity of the sand hill landforms that works should be monitored in these location by a LALC representative or an archaeologist. It was noted that the potential for sites over the majority of the survey was low.

In 1999 CWS surveyed the proposed widening of the Colombo Creek Bridge and the Colombo Creek Floodway Channel Bridge approximately 33 km south of Narrandera on the Newell Highway. A single quartz flake and

an associated area of potential archaeological deposit (PAD) were recorded. It was noted that the PAD was a raised dune above the floodplain that had potential for burials and artefacts. It was recommended that works should be monitored and that the widening of the bridges and the approached occur on the western side of the road to avoid the archaeologically sensitive area.

In 2015 OzArk surveyed an approximately 90 ha impact footprint for the proposed Euroley poultry production complex approximately 30 km west of Narrandera. A total of three sites, two scared trees and a hearth, were recorded during the survey.

In 2018 Australian Cultural Heritage Management surveyed an area of approximately 600 ha for the proposed Sandigo Solar Farm, approximately 22 km south west of Narrandera, NSW. Six archaeological sites were located including two grindstones and four artefact scatters.

There have also been several archaeological surveys conducted in the broader Murrumbidgee Province with a focus on mounds that contribute to our understanding of the nature of Aboriginal occupation. The major relevant studies are summarised below.

As part of her Honours thesis, Klaver (1987) carried out field work around Old Man Creek, a tributary of the Murrumbidgee River located approximately 15 km east of the current assessment area. A total of 119 sites were identified around Old Man Creek with the vast majority (n=112) described as mounds. Klaver (1987) interpreted the majority of these mounds as earth ovens and noted that the sites were mainly located on the flood plains of the major water courses and were viewed as a specialised component in the exploitation of swampy reed dominated areas. Klaver (1987) suggested that the main occupation sites were not located in the immediate vicinity of the mounds and were instead located well above maximum flood levels, on the sand sheets and dunes fringing the flood plain. Based on the number of sites identified Klaver (1987) suggested that the area around Old Man Creek may have been the focus of quite intensive Aboriginal occupation.

Klaver (1998) as part of an unpublished PhD thesis recorded a number of sites within the Murrumbidgee Riverine Plain surrounding the current proposal area. The study area extended from Hay to Old Man Creek east of Narrandera and to Jerilderie. A total of 581 sites, comprising 787 components were recorded throughout the survey region. The main site types recorded were mounds (n=311; 39%), scarred trees (n=205; 26%), small oven (n=146; 18%), artefact scatter (n=54; 7%), middens (n=20; 3%) with a lesser number of isolated artefacts, shelters and burials.

Mounded sites were generally evident as raised roughly circular deposits of blackened ashy soil, with heat retainers and other cultural remains. Mound deposits were found in close association with water sources, of variable reliability, such as river and creek channels, billabongs and swamplands. Stone artefacts were often recorded in the vicinity of mound deposits, as were hearths and small ovens. Scarred trees were noted to be abundant in *Eucalypt* woodlands throughout the region. Klaver suggested that as a response to the effects of flooding in the region that Aboriginal camp preferences were strongly influenced by the availability of wetlands or wetland-related resources and elevated dry positions. She noted that Aboriginal populations in the Central Murrumbidgee Riverine Plain practiced a relatively mobile settlement strategy which involved cyclical movement between the riverine corridor and locations within the riverine plain hinterlands.

Sample surveys undertaken by Pardoe and Martin (2001) within the Murrumbidgee Province covered an area of approximately 30,000 square kilometres, extending from Balranald to Narrandera and Booligal to Jerilderie. Using an analysis of landforms and identifying gaps in the archaeological knowledge based on the sites recorded in the AHIMS database, they found that there was a bias in the distribution of sites along major waterways and some landforms such as lunettes but there were also large gaps where no sites had been recorded. Pardoe and Martin surveyed 61 sample areas or quadrants from 22 Stations or locations across

their project area. This resulted in 347 new sites being recorded. The major site types were scarred trees (26.2%), mounds (24.2%), open sites (14.4%), ovens (12.4%), burials (7.8%) and hearths (6.1%) as shown on Table 2.

Pardoe and Martin analysed their results in order to develop a predictive model for site distribution across the Murrumbidgee Province. They found that mounds varied in size, from 4m-140m in diameter and height also varied from 2cm to 2m. Mounds were most commonly found along floodplain creeks within River Red Gum and Black Box vegetation communities. They found that as well as being situated along the major rivers, they were also located on the plains to the north and south of the Murrumbidgee, such as around the edge of depressions such as lakes and swamps and also on palaeochannel features. Mounds were often characterised as being situated on elevated ground such as lunettes, levees and dunes where silty sandy soil was prevalent (Pardoe and Martin 2001).

Table 3. Sites recorded in Murrumbidgee Province survey (Pardoe and Martin 2001: Table 5.4)

Site Type	Number	%
Modified trees	91	26.2
Mound	84	24.2
Open Site (including Artefact scatters)	51	14.7
Oven	43	12.4
Burial	27	7.8
Hearth	21	6.1
Midden	9	2.6
Isolated artefact	6	1.7
Dinner camp	5	1.4
Shell midden	3	0.9
Historic	3	0.9
Soak	1	0.3
Myth	1	0.3
Historic burial	1	0.3
Bora ring	1	0.3
Total	347	100.0

Burials occurred mostly as individuals within mounds but there were six locations where more than one burial was recorded. Most of the burials were observed as highly fragmented bone disturbed by rabbit activity. Scarred trees were found to be quite variable in the size of the scar with the largest scars being on

River Red Gums. Scars were classified into three groups, ceremonial- which were associated with a known burial, extraction- used in extracting food such as honey or grubs, and functional- all other types. The latter varied in size from 0.18m to 3.6m in length and width from 0.09m to 0.55m with an average of 0.38 m (Pardoe and Martin 2001).

Pardoe and Martin (2001) developed a predictive model of site distribution based on their results and an analysis of variables through the use of GIS mapping. They examined proximity to water and found that no sites were more than 12 km from a major river channel (in this case the Murrumbidgee River, and the Yanco, Box and Mirrool Creeks). They also found that 75% of sites were within 3.3 km of such water courses. An assessment of proximity to minor stream was made difficult by the presence of irrigation channels in their GIS layer but nevertheless, they also found that the average distance from a minor stream was 1.8 km and 75% of sites were within 2.2 km (Pardoe and Martin 2001).

3.2.4 *Summary of Aboriginal land use*

The results of previous archaeological surveys in close proximity to the proposal area show that there are sites and artefacts present throughout the landscape. There is a dominance of scarred trees and artefacts either as isolated finds or in clusters as artefact scatters. There appears to be a pattern of site location that relates to the presence of potential resources for Aboriginal use. The Aboriginal site modelling for the region to date suggests that while Aboriginal sites may be expected throughout all landscapes the most archaeologically sensitive areas occur in proximity to water.

The Aboriginal land use of the area is in reality little understood, as few in-depth studies have been completed and no sites have been dated. It is possible however, to ascertain that proximity to raw materials and resources was a key factor in the location of Aboriginal sites. It is also reasonable to expect that Aboriginal people ventured away from these resources to utilise the broader landscape but the current archaeological record of that activity is currently limited.

3.2.5 *Archaeological Site Location Model*

Based on the previous archaeological investigations and knowledge of Wiradjuri cultural practices and traditional activities it is possible to predict the likely archaeological site types that may occur within the project area. These are outlined below.

Stone artefact scatters – representing camp sites can occur across the landscape, usually in association with some form of resource or landscape unit such as spur and ridge crests. Within the Wagga Wagga and Narrandera area, the Murrumbidgee River is an obvious resource as are large billabongs and swamps. However, smaller water holding bodies, such as ephemeral swamps and wetlands can also be a focus of Aboriginal occupation. Sand bodies, topographically elevated areas or changes in soils with associated changes in vegetation can also be a desirable location for occupation particularly when they are associated with resource changes. Artefact scatters, if they do occur, are more likely to be characterised as low-density scatters across broad landforms.

Mounds- are accumulations of heat retainer ovens that have built up over time. They are typically round or oval in shape and range in length from just a few metres to over 100m and range in height from 0.1m to 2m. They are identified by the presence of baked clay heat retainers, which have usually been brought to the location from a nearby source of natural clay such as a lake bed, swamp or drainage line. Mounds are generally found in proximity to wetland areas such as lakes, swamps and creeks, often elevated above these areas by being situated on sandy rises, lunettes, source bordering dunes and palaeochannels. Mounds are

likely to contain a range of other archaeological features such as bone, shell, stone artefacts and burials. This feature has been recorded in the region and along the Murrumbidgee River. This feature may possibly occur.

Burials – are generally found in elevated sandy contexts or in association with rivers and major creeks. No such features exist with the proposal area and therefore such sites are unlikely to occur.

Scarred Trees – these require the presence of old growth trees and are likely to be concentrated along major waterways and around swamp areas. There are mature trees remaining in the proposal area and this feature is therefore likely to occur.

Hearths/Ovens – are identified by burnt clay used for heat retainers. A number are recorded in the district but they could occur either independently or in association with other Aboriginal cultural features such as campsites, often in association with resource locations. Such places are not obvious within the proposal area however this feature may occur.

Stone resources – are areas where people used natural stone resources as a source material for flaking. This requires geologically suitable material outcropping so as to be accessible. The proposal area contains no natural outcropping stone of suitable material.

Shell Middens – are the agglomeration of shell material disposed of after consumption. Such places are found along the edges of significant waterways, swamps and billabongs. The proposal area contains no significant waterways, swamps and billabongs and this feature is therefore unlikely to occur.

Isolated Artefacts – are present across the entire landscape, in varying densities. As Aboriginal people traversed the entire landscape for thousands of years, such finds can occur anywhere and indicate the presence of isolated activity, dropped or discarded artefacts from hunting or gathering expeditions or the ephemeral presence of short term camps.

In summary, the topography and landscape features within the proposed Avonlie Solar Farm indicate that this area would likely have been part of the Wiradjuri landscape and has a possibility of providing an archaeological signature. Nonetheless, given that Aboriginal people have lived in the region for tens of thousands of years, there is potential for archaeological evidence to occur throughout the area, this is most likely to be in the form of stone artefacts, mounds, hearths and scarred trees where old growth native trees remain.

3.2.6 *Comment on Existing Information*

The AHIMS database is a record of those places that have been identified and had site cards submitted to OEH. It is not a comprehensive list of all places in NSW as site identification relies on an area being surveyed and on the submission of site forms to AHIMS. There are likely to be many areas within NSW that have yet to be surveyed and therefore have no sites recorded. However, this does not mean that sites are not present.

Within the proposal area there have only been a few archaeological investigations. The information relating to site patterns, their age and geomorphic context is little understood. The robustness of the AHIMS survey results are therefore considered to be only moderate for the present investigation. There are likely to be sites that exist that have yet to be identified although the scale of farming development has altered the natural landscape in some places. This activity has also greatly disturbed the archaeological record and there are unlikely to be many places that retain *in situ* archaeological material due to the scale of agricultural and pastoral development. The current study is the most comprehensive assessment of this locality and therefore the results outlined in this report are the most thorough and up to date available.

With regard to the limitations of the information available, archaeologists rely on Aboriginal parties to divulge information about places with cultural or spiritual significance in situations where non-archaeological

sites may be threatened by development. To date, we have not been told of any such places within the Avonlie Solar Farm proposal area however there is always the potential for such places to exist but insofar as the current proposal is concerned, no such places or values were identified for the proposal area prior to undertaking the pedestrian survey and archaeological investigation in February 2018.

4 ARCHAEOLOGICAL INVESTIGATION RESULTS

4.1 SURVEY STRATEGY

The survey strategy was to cover as much of the ground surface as possible within the proposal area and proposed access road extending to the east and to the north from the main project area. Although the actual ground impact from the construction method for the proposed solar farm was likely to be low, the placement of solar arrays across the landscape has the potential to cover any cultural heritage sites.

As already noted, the assessment area is within heavily cropped paddocks and has therefore been subject to considerable impacts from farming for many decades with one area of remnant Grey Box (*Eucalyptus microcarpa*) vegetation adjacent to (but outside of) the south west margin of the proposal area.

Pedestrian survey of transects across the landscape was undertaken to achieve maximum coverage of the location, taking special care to check all remnant vegetation and areas bordering available water sources. The landform was generally flat cleared cropping paddocks therefore transects were spaced evenly, with the survey team spread apart at 30m intervals, and walking in parallel lines. The team were able to walk in parallel lines, at a similar pace, allowing for maximum survey coverage and maximum opportunity to identify any heritage features. The size of the survey team was a maximum of five people which allowed a 150 m wide tract of the proposal area to be surveyed with each transect. At the end of each transect, the team would reposition along a new transect line at the same spacing and walk back parallel to the previous transect.

Pockets of native remnant vegetation were directly adjacent but outside the south west margin of the proposal area and were therefore inspected. This area was determined to have high archaeological potential and mature trees were also inspected for any evidence of Aboriginal scarring (c.f Long 2005).

We believe that the survey strategy was comprehensive and the most effective way to identify the presence of Aboriginal heritage sites. Discussions were held in the field between the archaeologists and Aboriginal community representatives to ensure all were satisfied and agreed with the spacing, coverage and methodology.

The proposal area was divided into two sections as follows:

- Wheat (*Triticum aestivum*) and Barley (*Hordeum* sp.) Paddocks comprising the majority of the Project Area (approximately 543 hectares).
- Access road extending east to Sandigo Road, comprising approximately 27 hectares.

The survey of the solar farm proposal area was undertaken by archaeologists from NGH Environmental with representatives of the Aboriginal community between the 26th February and 2nd March 2018.

Notes were made about visibility, photos taken and any possible Aboriginal features identified were inspected, assessed and recorded if deemed to be Aboriginal in origin.

4.2 SURVEY COVERAGE

Survey transects were undertaken on foot, with high visibility (approximately 60-90%) recorded for the majority of the survey area due to the sparse vegetation cover of wheat or barley stubble. One patch of remnant native vegetation to the south west margin of the survey area had reduced ground surface visibility of approximately 30%.

Soils within the proposal area consisted of grey-brown or reddish-brown silty clays. Most of the paddocks had been ploughed and planted with wheat or barley crops which were, at the time of survey, reduced to stubble. No impediment to surface survey was experienced during the survey.

While the majority of the remnant vegetation will not be disturbed by the proposal, a number of remnant paddock trees were inspected during the survey as they had the possibility to have moderate archaeological sensitivity. The stands of trees offered a good representation of the vegetation communities that would have dominated the area prior to the intensive disturbance for cropping and grazing, and had the potential to contain scarred trees. Mature native trees were inspected to ascertain if there was any evidence of cultural modification.

Table 4 below shows the calculations of effective survey coverage and plates 1-8 show examples of the landscape and visibility encountered within the proposal area. Figure 6 shows the transect survey coverage within the proposal area.

Between the survey participants, over the course of the field survey, approximately, 60km of transects were walked across all survey units within the proposal area. Allowing for an effective view width of 5m each person, this equates to a surface area examined of approximately 150 hectares.

Overall, it is considered that the surface survey of the Avonlie Solar Farm proposal area had sufficient and effective survey coverage. The effective survey coverage is considered sufficient given that the proposed development area is highly modified. The results identified are considered a true reflection of the nature of the Aboriginal archaeological record present within the proposal area.

	
Plate 1 View south across wheat paddock with crop stubble eastern margin of survey area	Plate 2 View south across proposal area towards stands of saltbush.

	
Plate 3 View west across cropped wheat stubble towards the northern section of the proposal area.	Plate 4 View west from formed edge of turkeys nest bordering natural depression towards the south west of the proposal area.
	
Plate 5 View south from the natural depression and turkeys nest	Plate 6 View north from middle area of proposal area, towards northern boundary.
	
Plate 7 View west along proposed access road (Muntz Road)	Plate 8 View East along southern boundary of the proposal area facing stand of regrowth timber

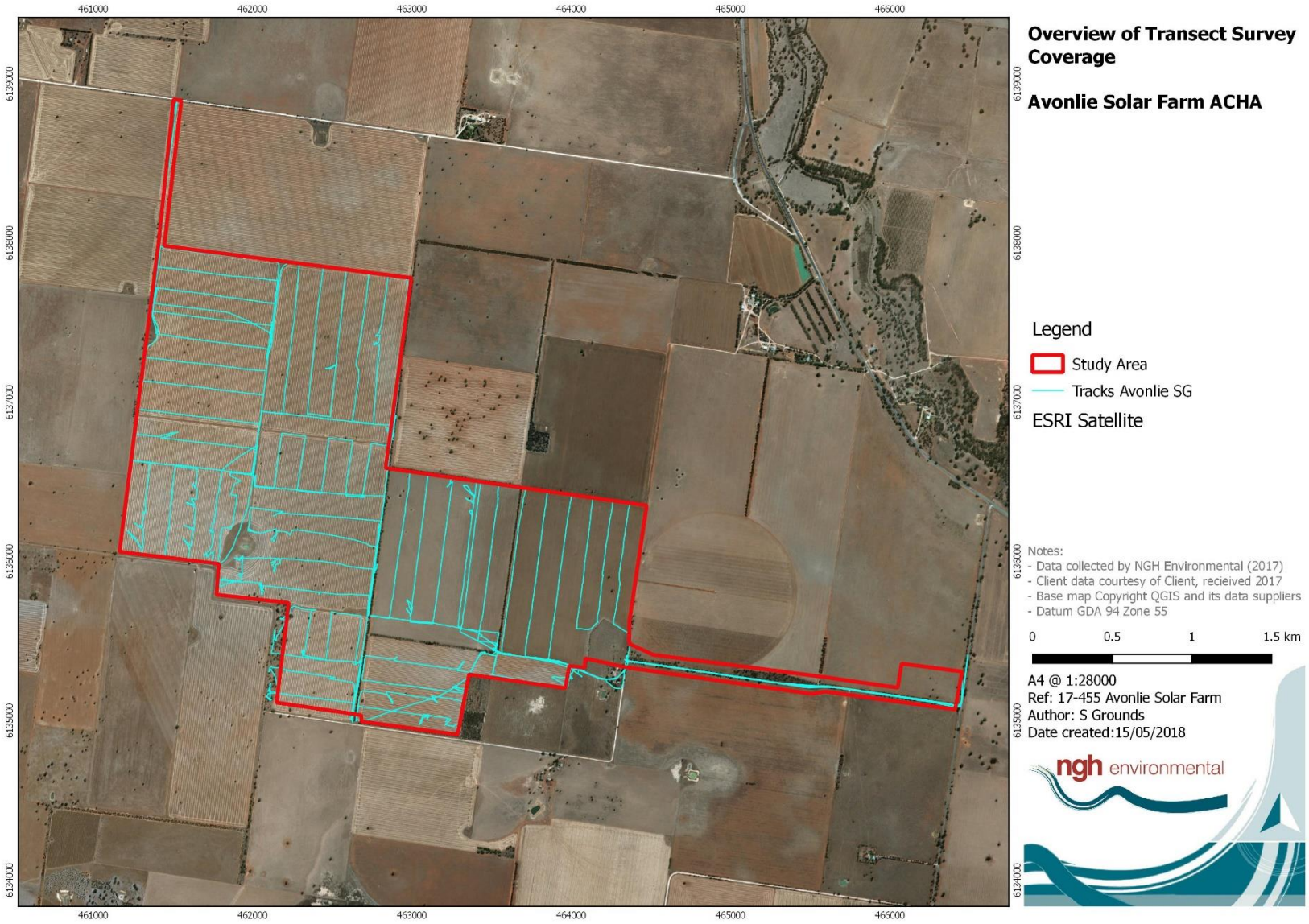

Figure 6. Overview of Transect Survey Coverage, Avonlie Solar Farm ACHA

Table 4. Transect Information

Survey Section	Number of Survey Transects	Topography	Exposure type	Proposal Area ha	Surveyed area (length m x width m)	Survey Area m^2	Visibility	Effective coverage (area x visibility) m^2	Proposal Area surveyed (ha)	Percentage of Proposal area effectively surveyed	Archaeological result
Wheat and Barley Paddocks including access road to the north	57	Level heavily cropped paddocks, minimal remnant vegetation	Bare ground, plough lines, vehicle tracks, stock tracks and pads,	543	~47000x25	1,175,000	70% average	936,000	93.6	25%	4 Artefact Scatters, 1 Scarred Tree and 64 Isolated Artefacts, plus 15 Artefacts recorded by Aboriginal Representative Mark Saddler
Access road extending east to Sandigo Road	1	Level plain with non-remnant cypress and eucalypt vegetation neighbouring road	Formed Gravel road, bare and sparsely vegetated ground	27	~2,000 x 25	270,000	30% average	162,000	16.2	60	2 isolated artefacts

4.3 SURVEY RESULTS

4.3.1 *Survey Finds*

Visibility was reasonably high across the proposal area at the time of survey. In total, 185 stone artefacts were located, the majority of which fall within four designated artefact scatters towards the southern boundary of the proposal area. In addition to these stone artefacts, a Scarred Tree was recorded.

An additional seven scarred trees (a tree with a scar that was unable to be deemed unequivocally Aboriginal in origin by an archaeologist but that the Aboriginal representatives onsite noted to have cultural significance to the local Aboriginal community) were identified and recorded by Aboriginal Representative Mark Saddler within a small stand of remnant vegetation adjacent to (but outside) the south western margin of the proposal area. These trees were registered on the AHIMS database by Mark Saddler. These trees are not within the proposal area and therefore will not be affected by the proposal.

Additionally, it should be noted that 15 of the stone artefacts were identified in the field and recorded independently by the Aboriginal representative Mark Saddler. Therefore, Mark Saddler independently assigned a naming convention to the sites he identified and submitted these sites to AHIMS. Six of the seven modified trees recorded by Mark Saddler fall outside of the proposal area and do not require specific management provided the proposal footprint remains within the proposal area. Surveyed. The seven modified trees recorded by Mark Saddler that are located outside the proposal area have not been detailed in this report. This information is instead provided in a report provided to NGH from Mark Saddler which is provided as Appendix C. The other modified tree recorded by Mark Saddler was located within the proposal area and has therefore been detailed below. The 15 (total) artefacts recorded by Mark have been subsumed within the descriptions of the artefact scatters and isolated artefacts detailed below.

Mark Saddler has provided NGH with a report on his participation in the Avonlie Solar Farm survey which is provided in full in Appendix C.

4.3.2 *Artefact Scatters and Isolated Finds*

A total of 170 stone artefacts were recorded during the survey, along with a further 15 artefacts recorded by Aboriginal representative Mark Saddler and registered as AHIMS sites subsequent to the survey, making a total of 185 stone artefacts recorded across the proposal area during this assessment. The majority of stone artefacts identified during the survey were flakes (n=90; 48.6%), followed by flaked pieces (n=49, 26.5%), broken flakes (n=12, 6.5%), grindstone fragments (n=6, 3.2%), cores (n=7, 3.8%), retouched flakes (n=4, 2.2%), a hammerstone (n=1, 0.5%), and one ground-edge axe (n=1, 0.5%).

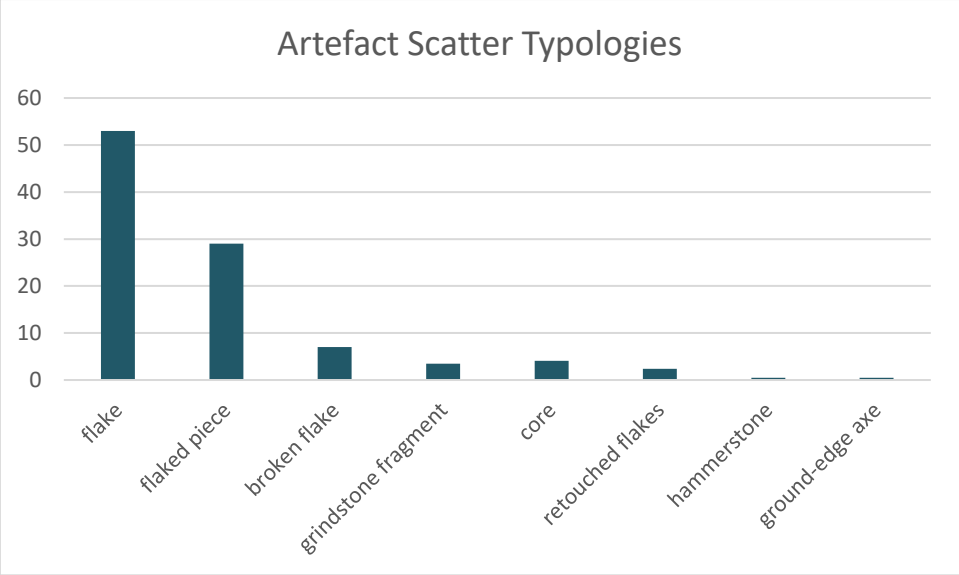

Figure 7 Artefact Typology

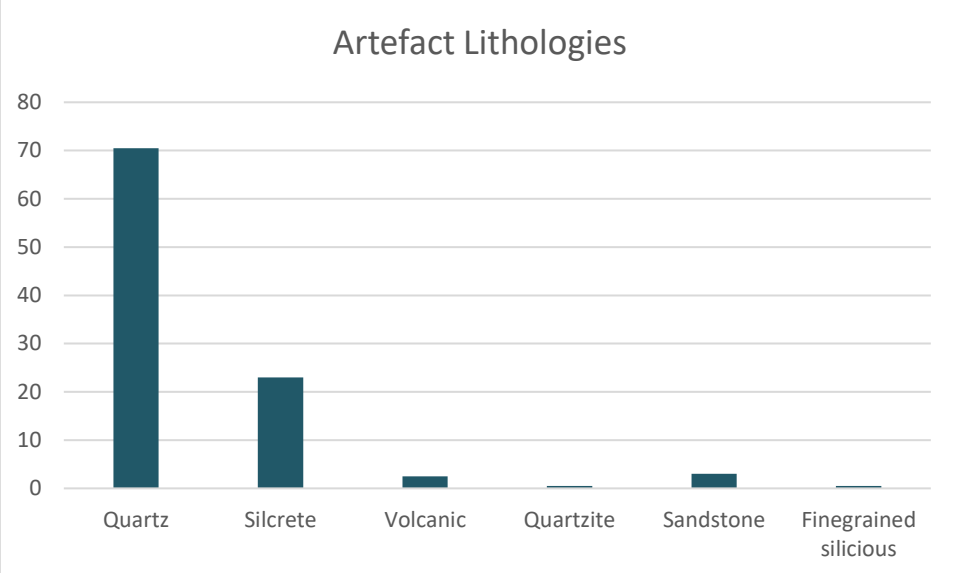

Figure 8 Artefact Lithology

Table 5. Size class of stone artefacts.

Size Class	Number	%
<10	2	1.1
<20	58	31.35
<30	76	41
<40	21	11.3
<50	6	3.2
<60	4	2.2
<70	3	1.6
<80	4	2.2
<90	3	1.6
>100	6	3.2
Unknown	2	1.1

As outlined in Figure 8, most stone artefacts recorded were manufactured from quartz (n=131; 70.5%) followed by silcrete (n=41, 23%) then sandstone (n=5; 3%). The reasonably high numbers of quartz and silcrete artefacts is consistent with previously recorded sites in the area, and the number of sandstone artefacts within the survey area may be attributed to the site being used for production of ground-seed food products. Lesser quantities of volcanic, quartzite, and fine-grained siliceous raw materials were also recorded (see Figure 8). No outcropping of rock was observed within the project area, suggesting that raw material was transported for use at the site. The relative infrequency of cortex on artefacts suggests that raw material may have been bought to site in an already reduced state.

The distribution of these artefacts appears to be in four main concentrations along with 64 isolated artefacts located across the proposal area (Figure 10).

Avonlie Artefact Scatter 1

Avonlie Artefact Scatter 1 encompasses 43% of the artefacts located during the assessment. This concentration of worked stone material appears to be in association with a small greyish silt depression that would have held water during the wet season. This landform has been subsequently turned into a turkey's nest dam and exploited for cattle grazing (see Figure 10 below).

Despite the depression being disturbed and the landform modified for farming purposes, and the flats surrounding it being heavily ploughed for cropping, the concentration of artefacts and, in particular grinding materials including five sandstone grindstone fragments and one volcanic top-stone, is indicative of the use of this area being directly attributable to obtainable water within the area. This relatively high instance of

grinding materials indicates that food processing (seed grinding) activity occurred in this location and is in alignment with results of archaeological assessments previously undertaken in the Sandigo area.

Also associated with Avonlie Artefact Scatter 1 is Avonlie Scarred Tree 2, which is located on the western margin of the concentration of stone artefacts, possibly indicating that the vegetation at the site would have been open Grey Box woodland before clearance for agriculture.

	
Plate 9. View South of Avonlie Artefact Scatter 1	Plate 10. Close up of sandstone grindstone fragment from Avonlie Artefact Scatter 1

Mark Saddler also recorded the location of Avonlie Artefact Scatter 1 as an Aboriginal Ceremony and Dreaming place (Figure 11).

Avonlie Artefact Scatter 2

This site consisted of 7 artefacts approximately 1.5 m apart on a flat area, in a cleared paddock. The artefacts were a three quartz flakes, one quartz broken flake, one quartz flaked piece, one quartz core and a silcrete flaked piece. The artefacts were located on a greyish silty clay deposits and visibility within the area was 90%.

	
Plate 11. View west of Avonlie Artefact Scatter 2	Plate 12. Close up of Avonlie Artefact Scatter 2, visibility of greyish silt exposure 90%

Avonlie Artefact Scatter 3

This site consisted of 8 artefacts approximately 1.5 m apart on a flat area, in a cleared paddock. The artefacts were a quartz flake, two quartz flaked piece, one quartz core, one quartzite broken flake, two silcrete flakes, and one silcrete flaked piece. The artefacts were located on a greyish silty deposits and visibility within the area was 90%.

Plate 13. View east of Avonlie Artefact Scatter 3

Avonlie Artefact Scatter 4

This site consisted of 29 artefacts approximately 1 - 1.5 m apart on a flat area, in a cleared paddock. The artefacts were twelve quartz flakes, seven quartz flaked piece, three quartz cores, four silcrete flakes, one silcrete core, one silcrete retouched flake and one silcrete flaked piece. The artefacts were located on a reddish brown silt deposits and visibility within the area was 60%.

Plate 14. View east of Avonlie Artefact Scatter 4

Plate 15. Close up of Silcrete Retouched Flake at Avonlie Artefact Scatter 4

The relatively low number of cores and small artefact sizes may be representative of the high intensity working of raw materials brought into the area, most likely due to the absence of local stone sources. One isolated ground-edge axe was located possibly indicating wood working practices at the site.

In addition to the artefact scatters and isolated artefacts recorded during the assessment by NGH archaeologists, Aboriginal representative Mark Saddler identified 15 artefacts across the proposal area, with nine of these being part of Avonlie Artefact Scatters 1 – 4, and the remaining six being isolated artefacts.

Table 6. Summary of Recorded Sites

AHIMS # (If Relevant)	Site Name	Site Type	Number of Artefacts	Raw Materials	% of total artefact material	Comments
49-6-0199 (Including Artefacts: 49-6-0152; 49-6-0153; 49-6-0154; 49-6-0155; 49-6-0157)	Avonlie Artefact Scatter 1 (AAS1)	Artefact Scatter	79	19 Silcrete, 2 Volcanic, 5 Sandstone, 53 Quartz	42%	The following AHIMS registered artefacts were recorded by Mark Saddler within the boundary of AAS 1: Avon 461914; Avon 462130, Avon 462131, Avon 462150 and Avon 461986
49-6-0201	Avonlie Artefact Scatter 2 (AAS2)	Artefact Scatter	7	1 Silcrete, 6 Quartz	3.8%	
49-6-0200 (Including Artefacts: 49-6-0144; 49-6-0145; 49-6-0146; 49-6-0147)	Avonlie Artefact Scatter 3 (AAS3)	Artefact Scatter	8	3 Silcrete, 1 Quartzite, 4 Quartz	4.3%	The following AHIMS registered artefacts were recorded by Mark Saddler within the boundary of AAS 3: Avon 463267; Avon 463273, Avon 643254, and Avon 463277
49-6-0198	Avonlie Artefact Scatter 4 (AAS4)	Artefact Scatter	29	7 Silcrete, 22 Quartz	15.7%	
49-6-0141	Avon 463340	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment
49-6-0142	Avon463431	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment
49-6-0143	Avon463511	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment

49-6-0150	Avon462418	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment
49-6-0156	Avon462800	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment
49-6-0165	Avon462256	Artefact	1	Unknown	0.5%	Registered on AHIMS by Mark Saddler subsequent to this assessment
49-6-0167	Avonlie IF 1 (AIF1)	flake	1	Quartz	0.5%	
49-6-0202	Avonlie IF 2	flake	1	Quartz	0.5%	
49-6-0230	Avonlie IF 3	flaked piece	1	Quartz	0.5%	
49-6-0203	Avonlie IF 4	flake	1	Quartz	0.5%	
49-6-0204	Avonlie IF 5	flaked piece	1	Quartz	0.5%	
49-6-0176	Avonlie IF 6	flaked piece	1	Quartz	0.5%	
49-6-0205	Avonlie IF 7	flake	1	Quartz	0.5%	
49-6-0206	Avonlie IF 8	flake	1	Quartz	0.5%	
49-6-0207	Avonlie IF 9	flake	1	Quartz	0.5%	
49-6-0211	Avonlie IF 10	flake	1	Quartz	0.5%	
49-6-0208	Avonlie IF 11	flake	1	Quartz	0.5%	
49-6-0209	Avonlie IF 12	flaked piece	1	Quartz	0.5%	
49-6-0212	Avonlie IF 13	retouched flake	1	silcrete	0.5%	

49-6-0141	Avonlie IF 14	flaked piece	1		0.5%	
49-6-0210	Avonlie IF 15	flake	1	Quartz	0.5%	
49-6-0213	Avonlie IF 16	broken flake	1	silcrete	0.5%	
49-6-0214	Avonlie IF 17	flake	1	Quartz	0.5%	
49-6-0215	Avonlie IF 18	flaked piece	1	Quartz	0.5%	
49-6-0216	Avonlie IF 19	retouched flake	1	silcrete	0.5%	
49-6-0217	Avonlie IF 20	flaked piece	1	Quartz	0.5%	
49-6-0218	Avonlie IF 21	Flake	1	Quartz	0.5%	
49-6-0219	Avonlie IF 22	flake	1	Quartz	0.5%	
49-6-0220	Avonlie IF 23	flake tool	1	silcrete	0.5%	
49-6-0221	Avonlie IF 24	flake	1	Quartz	0.5%	
49-6-0156	Avonlie IF 25	flaked piece	1	Quartz	0.5%	
49-6-0222	Avonlie IF 26	hammerstone	1	fine-grained siliceous	0.5%	
49-6-0223	Avonlie IF 27	flake	1	Quartz	0.5%	
49-6-0224	Avonlie IF 28	broken flake	1	Quartz	0.5%	
49-6-0225	Avonlie IF 29	flake	1	Quartz	0.5%	
49-6-0226	Avonlie IF 30	flake	1	Quartz	0.5%	
49-6-0227	Avonlie IF 31	broken flake	1	Quartz	0.5%	

49-6-0168	Avonlie IF 32	broken flake	1	Quartz	0.5%	
49-6-0169	Avonlie IF 33	core	1	na	0.5%	
49-6-0171	Avonlie IF 34	flaked piece	1	Quartz	0.5%	
49-6-0170	Avonlie IF 35	flake	1	silcrete	0.5%	
49-6-0172	Avonlie IF 36	flaked piece	1	Quartz	0.5%	
49-6-0173	Avonlie IF 37	axe	1	volcanic	0.5%	
49-6-0174	Avonlie IF 38	flaked piece	1	Quartz	0.5%	
49-6-0175	Avonlie IF 39	broken flake	1	Quartz	0.5%	
49-6-0177	Avonlie IF 40	flaked piece	1	Quartz	0.5%	
49-6-0178	Avonlie IF 41	broken flake	1	silcrete	0.5%	
49-6-0142	Avonlie IF 42	Broken Flake	1	Quartz	0.5%	
49-6-0179	Avonlie IF 43	Broken Flake	1	Quartz	0.5%	
49-6-0180	Avonlie IF 44	Flake	1	Silcrete	0.5%	
49-6-0181	Avonlie IF 45	Flaked Piece	1	Quartz	0.5%	
49-6-0182	Avonlie IF 46	Flaked Piece	1	Quartz	0.5%	
49-6-0183	Avonlie IF 47	Flake	1	Quartz	0.5%	
49-6-0184	Avonlie IF 48	Flake	1	Silcrete	0.5%	
49-6-0185	Avonlie IF 49	Flaked Piece	1	Quartz	0.5%	

49-6-0186	Avonlie IF 50	Flake	1	Quartz	0.5%	
49-6-0187	Avonlie IF 51	Flake	1	Silcrete	0.5%	
49-6-0188	Avonlie IF 52	Flake	1	Quartz	0.5%	
49-6-0189	Avonlie IF 53	Flake	1	Quartz	0.5%	
49-6-0190	Avonlie IF 54	Flake	1	Basalt	0.5%	
49-6-0191	Avonlie IF 55	Flake	1	Quartz	0.5%	
49-6-0192	Avonlie IF 56	Flake	1	Quartz	0.5%	
49-6-0193	Avonlie IF 57	Flake	1	Quartz	0.5%	
49-6-0194	Avonlie IF 58	Flaked Piece	1	Quartz	0.5%	
49-6-0195	Avonlie IF 59	Flake	1	Quartz	0.5%	
49-6-0196	Avonlie IF 60	Flaked Piece	1	Quartz	0.5%	
49-6-0197	Avonlie IF 61	Flaked Piece	1	Quartz	0.5%	
49-6-0229	Avonlie IF 62	Flake	1	Quartz	0.5%	
49-6-0228	Avonlie IF 63	Flake	1	Quartzite	0.5%	

1.1.1 Avonlie Culturally Modified Trees

A number of Culturally Modified trees were recorded and submitted to AHIMS by Aboriginal representative Mark Saddler after the survey. One of these trees was located within in the proposal area and is detailed below *(AHIMS 49-6-0148)*. The others are located within a stand of remnant vegetation outside the proposal area adjacent to the south-west boundary. These trees will not be affected by the proposal and are listed in Appendix A and detailed in Mark Saddlers reported provided in Appendix C.

Avonlie Solar Farm Scarred Tree 1 (AHIMS 49-6-0148)

This Modified Tree was registered on the AHIMS database by Mark Saddler subsequent to this assessment. It was also recorded by NGH archaeologists and is considered to be a Scarred Tree of Aboriginal origin. It stands alone in the north-eastern most paddock within the proposal area. It is in good condition and has a single scar oriented east. The tree is approximately 10m in height. The scar measures 0.9m long, 0.2m wide and 0.2m deep. While the scar continues to ground, axe marks at the top of scar may evidence human modification.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Plate 16. View west of Avonlie Scarred Tree 1 (AHIMS 49-6-0148).</td><td>Plate 17. Close up of Avonlie Scarred Tree 1 (AHIMS 49-6-0148).</td></tr>
</table>

Avonlie Solar Farm (Possible) Scarred Tree 2

This site consists of a single scarred tree considered to be of possible Aboriginal in origin and is a stand alone paddock tree. The tree is a mature living Grey Box in good condition that has a single scar assessed as conforming to the standard scarring morphology accepted for Aboriginal modification (cf. Long 2005). The tree is located west of Artefact Scatter 1 and is approximately 12m in height. It was noted that the tree had a number of other seemingly natural scars caused by branch fall. The oval scar is located on the trunk of the tree facing south. The base of the scar is approximately 65 cm above the ground.

	
Plate 18. View north of Avonlie Scarred Tree 2.	Plate 19. Close up of Avonlie Scarred Tree 2.

Table 7. Scarred tree characteristics

AHIMS #*	Site Name	Artefact Type	Raw Material	Dimensions (mm)	Comments
49-6-0148	Avonlie ST 1	Modified tree	Grey Box tree (living)	900 x 200 x 200	Oval scar on trunk, scar continues to ground surface a single axe mark noted.
-	Avonlie ST 2	Modified tree	Grey Box tree (living)	390 x 150 x 70	Oval scar on trunk face south, scar approximately 65cm above ground surface.

1.1.2 Consideration of Potential for Subsurface material

Discussions were held in the field with the representatives present to assess the potential for subsurface deposits across the proposal area. Based on the land use history, an appraisal of the landscape, soil, level of disturbance and the results from the field survey it was concluded that there was low potential for the presence of intact subsurface deposits with high densities of objects or cultural material within the proposal area. It was determined by the archaeologists and representatives from the Aboriginal community present during the survey that subsurface testing was not warranted.

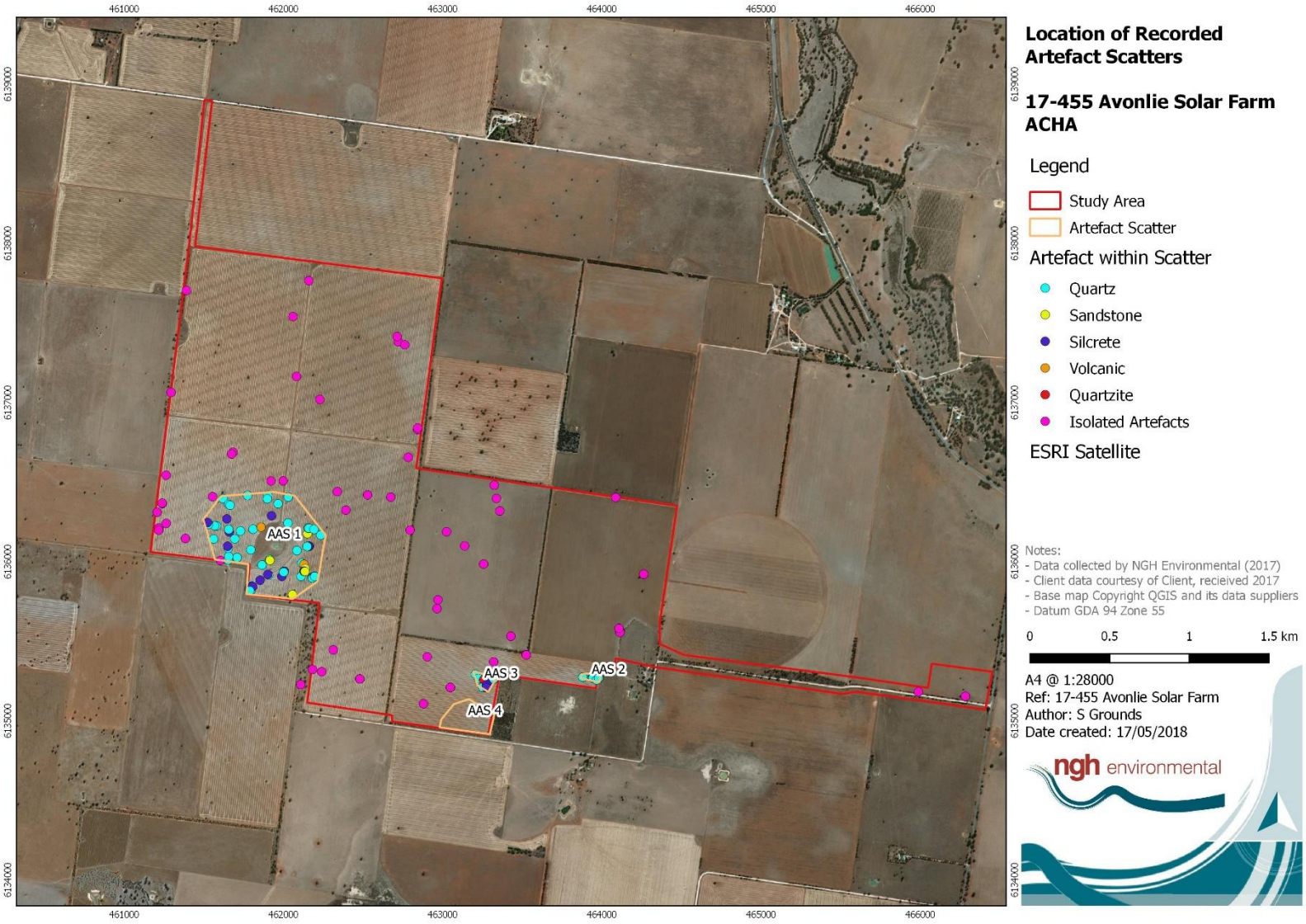

Figure 9. Location of recorded artefact scatters.

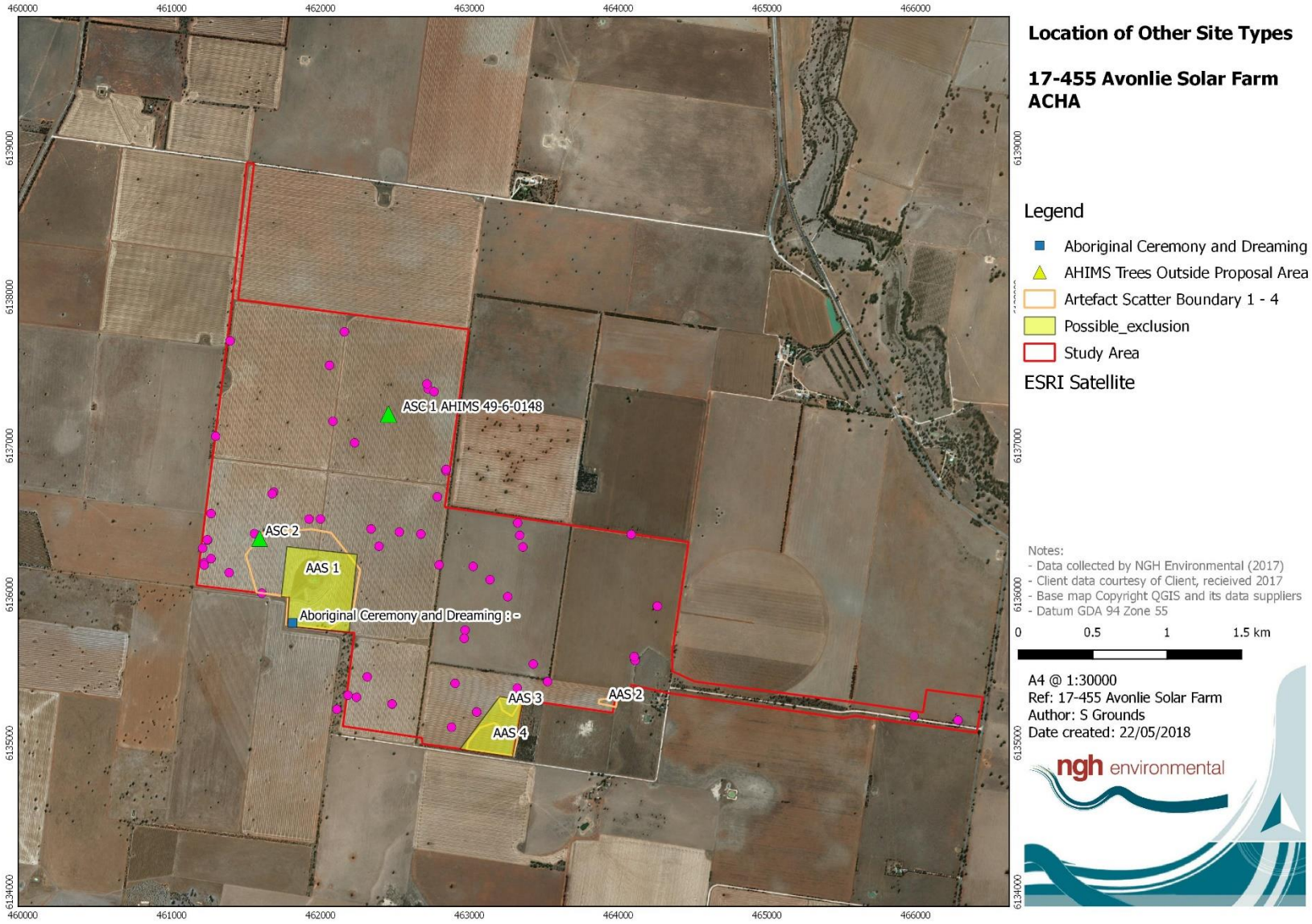

Figure 10. Location of other recorded sites.

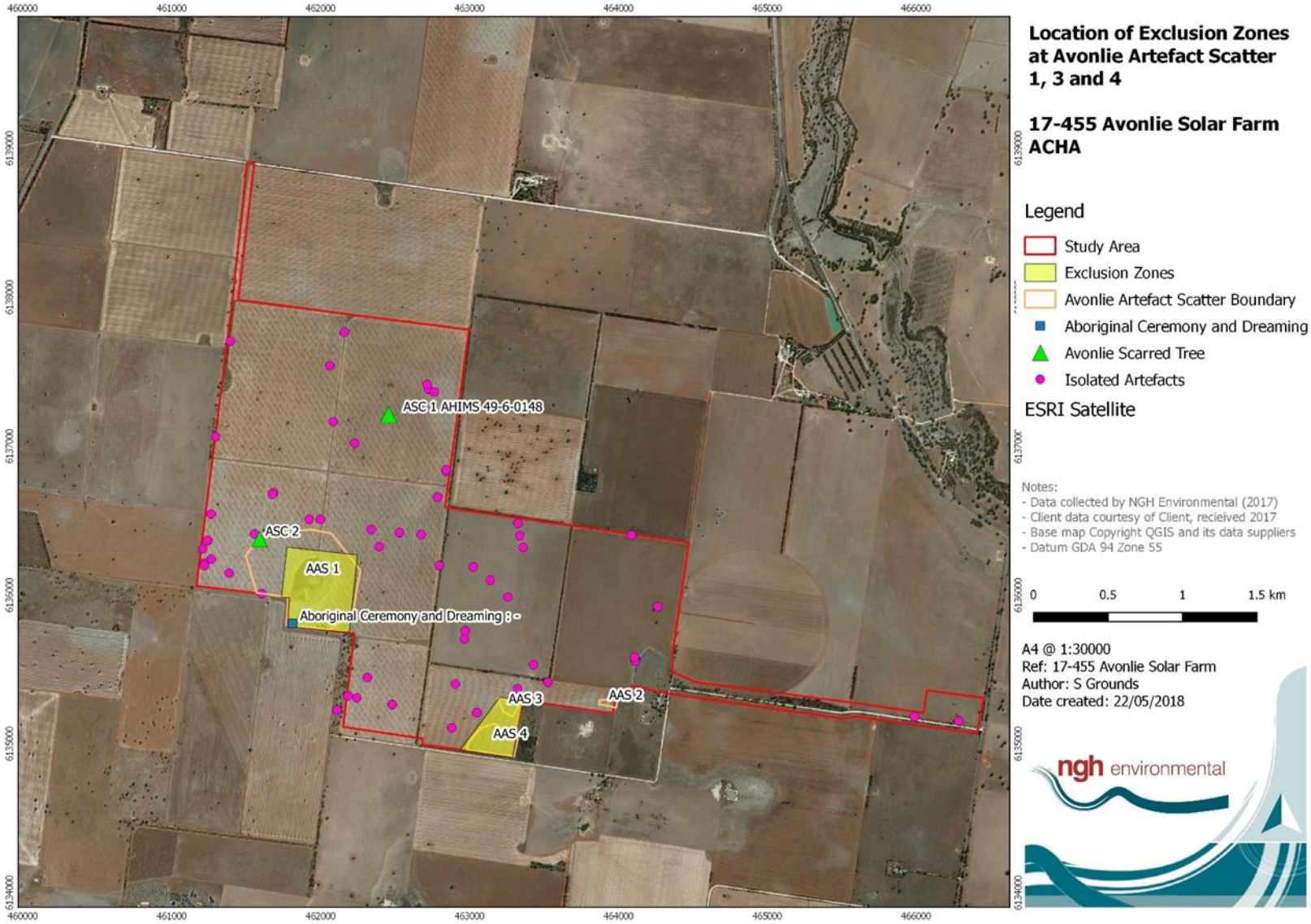

Figure 11. Proposed Exclusion Zones agreed by RES.

4.4 DISCUSSION

The predictions based on the modelling for the proposal area were that stone artefacts, ovens and scarred trees were the most likely manifestation of Aboriginal occupation of the area. It was noted that the one small remnant stand of native trees and Grey Box vegetation adjacent to the proposal area was likely to have scarred trees. Exposures and clear depressions that may hold water had an increased likelihood to contain stone artefacts however they would likely be disturbed or previously destroyed by farming and irrigation activities.

The presence of an Aboriginal scarred tree within the proposal area and a number of culturally significant trees outside the proposal area, in a stand of remnant Grey Box vegetation, confirmed the site type prediction and modelling whereby scarred trees are predicted in areas where there are remnant stands of native trees. Scarred trees provide a tangible link to the past and provide evidence of Aboriginal subsistence activities through the deliberate removal of bark or wood. It is likely that the dominance of scarred trees as a site type in the area is related to the more obtrusive nature of scarred trees when compared to stone artefacts.

It should also be noted that the results of this investigation have increased the number of isolated find sites recorded in the local area from six to 191 and open sites (including artefact scatters) from 51 to 57. There appears to previously be a bias towards more obvious site types in the AHIMS record, particularly scarred trees. This is something we consider anomalous in the typical pattern of site recording in Australia. The implications for this relate to significance assessments and the related appraisal of site representativeness. We would argue that there are likely to be many hundreds of such artefact sites in the local area, and that the low number of isolated finds and artefact sites in AHIMS previously is merely an indication that few surveys have been undertaken in the Sandigo area and therefore they are yet to be found and recorded in AHIMS.

Given the absence of ovens identified during this survey it is likely that land clearing and farming activities in the area have disturbed or removed the cultural material evident of these site types in the area.

Furthermore, the concentration of stone artefact material around water-holding depressions, along with the evidence of food processing provides evidence that the landscape would have provided resources that may have supported small groups of people as they moved away from the major water courses for short periods of time, particularly during less flood prone months.

In terms of the current proposal therefore, extrapolating from the results of this survey, it is unlikely that *in situ* stone artefacts occur across the area. However, consideration must also be given to the level of disturbance of any such sites. Based on the land use history of the proposal area, and an appraisal of the results from the field survey, there is negligible potential for the presence of intact subsurface deposits with high densities of objects or cultural material within the Avonlie Solar Farm proposal area.

5 CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

The assessment of the significance of Aboriginal archaeological sites is currently undertaken largely with reference to criteria outlined in the ICOMOS Burra Charter (Marquis-Kyle & Walker 1994). Criteria used for assessment are:

- *Social or Cultural Value*: In the context of an Aboriginal heritage assessment, this value refers to the significance placed on a site or place by the local Aboriginal community – either in a contemporary or traditional setting.
- *Scientific Value*: Scientific value is the term employed to describe the potential of a site or place to answer research questions. In making an assessment of Scientific Value issues such as representativeness, rarity and integrity are addressed. All archaeological places possess a degree of scientific value in that they contribute to understanding the distribution of evidence of past activities of people in the landscape. In the case of flaked stone artefact scatters, larger sites or those with more complex assemblages are more likely to be able to address questions about past economy and technology, giving them greater significance than smaller, less complex sites. Sites with stratified and potentially in situ sub-surface deposits, such as those found within rock shelters or depositional open environments, could address questions about the sequence and timing of past Aboriginal activity, and will be more significant than disturbed or deflated sites. Groups or complexes of sites that can be related to each other spatially or through time are generally of higher value than single sites.
- *Aesthetic Value*: Aesthetic values include those related to sensory perception, and are not commonly identified as a principal value contributing to management priorities for Aboriginal archaeological sites, except for art sites.
- *Historic Value*: Historic value refers to a site or place's ability to contribute information on an important historic event, phase or person.
- *Other Values*: The Burra Charter makes allowance for the incorporation of other values into an assessment where such values are not covered by those listed above. Such values might include Educational Value.

All sites or places have some degree of value, but of course, some have more than others. In addition, where a site is deemed to be significant, it may be so on different levels or contexts ranging from local to regional to national, or in very rare cases, international. Further, sites may either be assessed individually, or where they occur in association with other sites the value of the complex should be considered.

Social or cultural value

While the true cultural and social value of Aboriginal sites can only be determined by local Aboriginal people, as a general concept, all sites hold cultural value to the local Aboriginal community. An opportunity to identify cultural and social value was provided to the Aboriginal representatives for this proposal through the fieldwork and draft reporting process.

Feedback about the cultural value of the sites while in the field with representatives from the Narrandera LALC, Bundyi ACK and Warrabinya indicated that all sites hold cultural value to the Aboriginal community. It was also clear that scarred trees were viewed as important and a particular site type that should be avoided by development.

Scientific (archaeological) value.

The research potential of the sites located during this assessment is considered to be low to moderate. While the presence of the sites can be used to assist in the development of site modelling for the local landscape, their scientific value for further research is limited considering that the sites have been heavily disturbed by agricultural activity. The high instance of grinding materials may demonstrate the site usage for food preparation and residue analysis may be considered to be useful to shed further light on the specific plants and materials being ground at the site. The cluster of grinding materials is unusual and may therefore offer an increased opportunity to research aspects of Aboriginal land use and subsistence activities. The location was also identified as a ceremony and dreaming site by Aboriginal participants.

The scarred tree may be representative of the opportunistic use of the landscape but any further observations are restricted due to the clearing of the area. The Scarred Tree recorded within the proposal area is alive and healthy, therefore holding high integrity. The fact that survival of scarred trees is subject to natural factors such as death and decay and bushfires, as well as man-made threats such as land clearing, their long term survival prospects are diminished. This leads to the conclusion that the remaining scarred trees in the landscape have high value as examples of an ever reducing Aboriginal cultural feature. The tree is therefore assessed overall as having high conservation value.

Aesthetic value.

There are no aesthetic values associated with the archaeological sites per se, apart from the presence of a scarred tree and stone artefacts in the landscape. The modified and heavily disturbed landscape within the solar farm proposal area however detracts from this aesthetic setting.

Other Values

There are no other known heritage values associated with the subject area. The area may have some educational value (not related to archaeological research) through educational material provided to the public about the Aboriginal occupation and use of the area, although the archaeological material is within private property and there is little for the public to see.

6 PROPOSED ACTIVITY

6.1 HISTORY AND LANDUSE

It has been noted above that historically the solar farm proposal area has been impacted through land use practices, such as clearing and ploughing. The proposed access way along Muntz Road has also been impacted through road construction and maintenance activities.

The implications of this activity is that the archaeological record has been compromised in terms of the potential for in-situ artefact materials and potential for sub-surface sites with high-integrity. Scarred trees do remain as paddock trees, however this is fortuitous considering the land-clearing practices evident across the area.

Despite these localised impacts, a scarred tree was recorded within the wider area of the proposal area and Aboriginal artefacts and cultural material remain across the broader proposal area, in particular associated with water-holding depressions that naturally occur within the landscape, indicating the presence of past Aboriginal people and providing indications of their use of the area.

6.2 PROPOSED DEVELOPMENT ACTIVITY

As noted in section 1.3, the proposal involves the construction of a solar plant with a capacity up to 200MW. The power generated will be fed into the National Electricity Market (NEM) at the transmission level directly into the TransGrid 132kV network, which passes through the property.

Disturbances will largely be in the preparation of the ground for the solar farm. Piles would be driven or screwed into the ground to support the solar array's mounting system, which reduces the potential overall level of ground disturbance.

Flat plate PV modules would be installed and spread across the site. Each of them would be linked to an inverter and a transformer.

Trenches would be dug for the installation of a series of underground cables linking the arrays across the proposal site.

Some internal access tracks would also be required, and typically these would comprise of a compacted layer of gravel laid on stripped bare natural ground.

Some ancillary facilities would also be required including parking facilities, operations and maintenance buildings.

A perimeter fence would be constructed around the solar farm and if required vegetation buffers would possibly planted in some areas.

An energy storage facility of approximately 32MW/16MWh rated capacity which will be provided by banks of lithium-ion batteries. These will be housed within 12 metre shipping containers located in a secure compound adjacent to the collector yard

In total, the construction phase of the proposal is expected to take around 18 months. The Avonlie solar farm is expected to operate for around 30 years. After the initial operating period the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or upgraded with new PV equipment. Upgrading would be subject to the relevant approvals at the time and involve replacing components that were originally installed with new components that reflect technology that is available at that time.

The development activity will therefore involve disturbance of the ground during the construction of the solar farm. Once established however, there would be minimal ongoing disturbance of the ground surface.

The final details and timing of the proposed construction activity have yet to be finalised but it is anticipated that construction could commence in late 2018.

6.3 ASSESSMENT OF HARM

As described in this report, four Artefact Scatters, one Scarred Tree and 64 Isolated Artefacts were located within the proposal area and are likely to be directly impacted by the proposed activity. Additionally, 15 artefacts were registered by Mark Saddler on the AHIMS database subsequent to this assessment. The following table (Table 6) provides a summary of the degree of harm and the consequence of that harm upon the heritage values of each site resulting from the proposed works for the solar farm fence.

While the proposed level of disturbance for the construction of the solar farm fence is likely to be minimal the works could still potentially impact the scarred tree if there are no safeguards implemented for works near the site, such as a plan of management for fencing works.

Table 8. Identified risk to known sites

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
Avonlie Artefact Scatter 1	Poor – 100+ year history of agricultural and pastoral use	Low-moderate	Direct	Partial	Partial Loss of Value	Partial Avoidance, Partial Salvage
49-6-0152	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0153	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0154	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0155	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0157	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
Avonlie Artefact Scatter 2	Poor – 100+ year history of agricultural and pastoral use	Low	Direct	Direct	Total Loss of Value	Salvage
Avonlie Artefact Scatter 3	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0144	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0145	Poor – 100+ year history of agricultural	Low	Nil- outside of	Nil- outside of	Nil- outside of	N/A- outside of development area. Ensure

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
	and pastoral use		development area	development area	development area	minimum 5m buffer to avoid
49-6-0146	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
49-6-0147	Poor – 100+ year history of agricultural and pastoral use	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
Avonlie Artefact Scatter 4	Poor	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
Avonlie Scarred Tree 1 (*AHIMS 49-6-0148)*	Good- *in situ* living tree	High	Harm during installation of Solar Farm infrastructure	Direct	Minimal to total loss of value	Avoid. Plan of management required prior to installation proceeding.
Avonlie Scarred Tree 2	Good- *in situ* living tree	High	Harm during installation of Solar Farm infrastructure	Direct	Minimal to total loss of value	Avoid. Plan of management required prior to installation proceeding.
Isolated Artefacts AIF 1-64 (Full list in Appendix C)	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0141	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0142	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0143	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0150	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0156	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
49-6-0165	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 1	Poor	Low	Nil- outside of	Nil- outside of	Nil- outside of	N/A- outside of development

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
			development area	development area	development area	area. Ensure minimum 5m buffer to avoid
AIF 2	Poor	Low	Nil- outside of development area	Nil- outside of development area	Nil- outside of development area	N/A- outside of development area. Ensure minimum 5m buffer to avoid
AIF 3	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 4	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 5	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 6	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 7	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 8	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 9	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 10	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 11	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 12	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 13	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 14	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 15	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 16	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
AIF 17	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 18	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 19	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 20	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 21	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 22	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 23	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 24	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 25	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 26	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 27	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 28	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 29	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 30	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 31	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 32	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 33	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
AIF 34	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 35	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 36	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 37	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 38	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 39	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 40	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 41	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 42	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 43	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 44	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 45	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 46	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 47	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 48	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 49	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 50	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.

Site name	Site integrity	Scientific Significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
AIF 51	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 52	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 53	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 54	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 55	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 56	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 57	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 58	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 59	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 60	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 61	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 62	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF 63	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.
AIF **64**	Poor	Low	Direct	Direct	Total Loss of Value	Salvage.

As summarised in Table 6, four artefact scatters, one scarred tree and 64 isolated artefacts are within the proposal area. A partial exclusion of Artefact Scatter 1 has been accepted by RES and incorporated into their design, however the site will still be partially impacted. AHIMS registered Artefacts 49-6-0152; 49-6-0153; 49-6-0154; 49-6-0155; and 49-6-0157, recorded by Mark Saddler, have also been encompassed by this exclusion zone and will therefore not be impacted by the proposed activity.

Artefact Scatter 2 will be directly impacted, however Artefact Scatters 3 and 4 have been excluded from the development footprint, thereby removing them from harm. AHIMS registered Artefacts 49-6-0144; 49-6-0145; 49-6-0146; and 49-6-0147 recorded by Mark Saddler, have also been encompassed by this exclusion zone and will therefore not be impacted by the proposed activity.

The impact is likely to be most extensive where earthworks such as clearing vegetation may occur, and across the areas where panels are expected to be installed. The possible harm to the recorded scarred tree during the installation of panels would be direct. These types of harm, should they occur, are considered impacts on the sites. If the scarred tree is avoided, the assessment of harm overall is therefore assessed as low.

6.4 IMPACTS TO VALUES

The values potentially impacted by the development are any social and cultural values attributed to the sites by the local Aboriginal community. The extent to which the loss of the sites or any inadvertent damage to the sites would impact on the cultural values is only something the Aboriginal community can articulate.

The impact to values for this development are summarised in Table 6 above.

The impact to the scientific values if the site Avonlie Scarred Tree 1 (*AHIMS 49-6-0148)* was to be impacted by the current proposal is considered high. This site is located within the solar array proposal area consequently, there is potential that the intrinsic values of the tree may be affected by construction of the solar array. Any damage to the tree would reduce the scientific value it retains and would result in high impact to the representative values of the tree.

While Avonlie Artefact Scatter 1 is considered to hold low - moderate scientific significance, the site has been damaged by 100+ years of agricultural activity. Partial exclusion of the site for development has been undertaken to reduce the harm to the site.

7 AVOIDING OR MITIGATING HARM

7.1 CONSIDERATION OF ESD PRINCIPLES

Consideration of the principles of Ecologically Sustainable Development (ESD) and the use of the precautionary principle was undertaken when assessing the harm to the sites and the potential for mitigating impacts to the sites recorded within the Avonlie Solar Farm proposal area. The main consideration was the cumulative effect of the proposed impact to the sites and the wider archaeological record. The precautionary principle in relation to Aboriginal heritage implies that development proposals should be carefully evaluated to identify possible impacts and assess the risk of potential consequences.

In broad terms, the archaeological material located during this investigation is similar to what has been found previously within the region. The immediate local area has a dominant site type of scarred trees and the identification of another scarred tree during this survey suggests that the presence of scarred trees in the local area as a site type is accurate. However, the occurrence of other site types may be influenced by the extensive land clearing and farming activities in the area that have disturbed or removed other cultural material.

Given the size of the geographical area, it is certain that there would be similar scarred trees present within the region. The result of this Aboriginal heritage assessment has confirmed the archaeological sensitivity

of remnant native trees and Grey Box vegetation in the area. The implications for ESD principles is that other scarred trees are likely to be present in the district.

Additionally, the presence of clusters of stone artefacts and a broad scatter of low density artefacts suggests that the presence of stone artefacts in the landscape is likely to be extremely common.

As noted above, the archaeological values of the sites within the solar farm, considering the scientific, representative and rarity values, was deemed to be low overall, with Avonlie Artefact Scatter 1 having low – moderate scientific value due to the increased number of grinding materials present.

Although scarred trees are the dominant site type in AHIMS for the local area they are a finite site type with a poor long-term survival prognosis. It is argued therefore that any impacts to the sites through the development would adversely affect the broader archaeological record for the local area or the region.

The principle of inter-generational equity requires the present generation to ensure that the sites and diversity of the archaeological record is maintained or enhanced for the benefit of future generations. We believe that the diversity of the archaeological record is not compromised by development of this particular solar farm proposal, provided the exclusion zones are incorporated into the design and a further exclusion zone is placed around the scarred tree.

We therefore consider, that if the current proposed design for Avonlie Solar farm proposal, incorporating the two agreed exclusion zones, impacts the scarred tree, the overall cumulative impact on the archaeological record for the region is likely to be moderate. However, removing the scarred tree from impact would reduce the overall development impact to low.

It is argued that the cumulative impacts of the proposal are not enough to reject outright the development proposal.

7.2 CONSIDERATION OF HARM

Avoiding harm to all the sites is technically possible through avoidance. However, their position scattered across the landscape would pose serious design and function constraints on the solar farm proposal. Therefore, partial exclusion is recommended in the case of Avonlie Solar Farm. Two exclusion zones have been proposed to RES and accepted into their design. A further 20m diameter exclusion zone is recommended around Avonlie Scarred Tree 1 in order to reduce the potential harm of the development.

Based on the assessment of the sites, and in consideration of discussions with the Aboriginal representatives during the field survey, it is not considered necessary to prevent all development at this location. The sites with stone artefacts have been shown to be highly disturbed with little remaining scientific value, though the high concentrations of grinding materials demonstrate a higher than average scientific significance. Aboriginal cultural value has been determined by the local Aboriginal community to be generally low-moderate for the artefact scatters and isolated artefacts present at the site, however there is an increased value placed on the scarred tree.

The question remains about possible occurrence of artefacts and cultural material within the balance of the solar farm site. It is possible, and considered likely that additional artefacts will be present, most likely in the form of isolated artefacts or very small, low density scatters. Without knowing their exact locations, it is difficult to manage the impacts. We do not consider that the risk of such disturbances means the development should be abandoned. The archaeological material identified in the survey, and potentially present in the balance of the development site is not of sufficient value to reject the development proposal.

Mitigation of harm to cultural heritage sites generally involves some level of detailed recording to preserve the information contained within the site. Mitigation can be in the form of minimising harm, through slight changes in the development plan or through direct management measures of the sites and Aboriginal objects.

It is argued here that avoidance of a portion of Artefact Scatter 1, the entirety of Artefact Scatters 3 and 4 and of Avonlie Scarred Tree 1 is warranted within the solar farm development area. However, Avonlie Artefact Scatter 2 and all isolated artefacts are conducive to salvage as a mitigation strategy as requested by the Aboriginal community representatives onsite during the field survey.

As identified above, it is recommended that part of Avonlie Artefact Scatter 1, Avonlie Artefact Scatter 2 and all isolated artefacts recorded within the proposed Avonlie Solar Farm development area are salvaged by an archaeologist with representatives of the registered Aboriginal parties post project determination as a State Significant Development and prior to the construction commencing. The artefacts should be collected and moved to a safe area within the property that will not be subject to any ground disturbance. The collection will be undertaken in accordance with Requirement 26 of the Code of Practice in relation to the instruction for Aboriginal objects kept or returned to the location they originated from. This collection will include the following.

- A full catalogue, including photographic and drawn records for diagnostic stone artefacts, must be made.
- The catalogue must be in printed form, but may also include an electronic database in the form of a table containing all records.
- All stone artefacts must be either individually bagged or bagged in appropriate and identifiable units (e.g. excavation or collection units) that can be referenced back to the catalogue.
- The stone artefacts must be stored in good quality, double-bagged plastic zip-lock bags.
- The bags must be externally labelled using permanent marker, and an 'independent' label on robust material (e.g. tyvek) written with permanent marker must be placed inside each bag.
- The collection must be placed in a suitable impervious and permanent container, which must be labelled as above, or engraved.
- A full record of the final location of the collection must be made, including:
    - grid coordinates derived as set out in Requirement 8 of the Code of Practice;
    - a site plan or mud map referring to permanent features;
    - full photographic record of the disposition, and
    - The record must be submitted to AHIMS with a site update record card for the site(s) in question.

It is also recommended that a further design exclusion to a 10m buffer around Avonlie Scarred Tree 1 be incorporated into the design for the solar farm.

8 LEGISLATIVE CONTEXT

Aboriginal heritage is primarily protected under the NPW Act and as subsequently amended in 2010 with the introduction of the *National Parks and Wildlife Amendment (Aboriginal Objects and Places) Regulation 2010*. The aim of the NPW Act includes:

> The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including but not limited to: places, objects and features of significance to Aboriginal people.

An Aboriginal object is defined as:

> Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

Part 6 of the NPW Act concerns Aboriginal objects and places and various sections describe the offences, defences and requirements to harm an Aboriginal object or place. The main offences under section 86 of the NPW Act are:

- A person must not harm or desecrate an object that the person knows is an Aboriginal object.
- A person must not harm an Aboriginal object.
- For the purposes of this section, "circumstances of aggravation" are:
    - that the offence was committed in the course of carrying out a commercial activity, or
    - that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.
- A person must not harm or desecrate an Aboriginal place.

Under section 87 of the NPW Act, there are specified defences to prosecution including authorisation through an Aboriginal Heritage Impact Permit (AHIP) or through exercising due diligence or compliance through the regulation.

Section 89A of the Act also requires that a person who is aware of an Aboriginal object, must notify the Director-General in a prescribed manner. In effect this section requires the completion of OEH AHIMS site cards for all sites located during heritage surveys.

Section 90 of the NPW Act deal with the issuing of an AHIP, including that the permit may be subject to certain conditions.

The EP&A Act is legislation for the management of development in NSW. It sets up a planning structure that requires developers (individuals or companies) to consider the environmental impacts of new projects. Under this Act, cultural heritage is considered to be a part of the environment. This Act requires that Aboriginal cultural heritage and the possible impacts to Aboriginal heritage that development may have are formally considered in land-use planning and development approval processes.

Proposals classified as State Significant Development or State Significant Infrastructure under the EP&A Act have a different assessment regime. For State Significant Development that is authorised by a development consent an AHIP under section 90 of the NPW Act is not required (refer to Division 4.7 section 4.41 of the Ep7A Act 1979). However, the Department of Planning and Environment is required to ensure that Aboriginal heritage is considered in the environmental impact assessment process. The Department of Planning and Environment will consult with other departments, including OEH prior to development consent being approved.

The Avonlie Solar Farm proposal is a State Significant Development and will therefore be assessed via this pathway, which does not negate the need to carry out an appropriate level of Aboriginal heritage

assessment or the need to conduct Aboriginal consultation in line with the requirements outlined by the OEH *Aboriginal cultural heritage consultation requirements for proponents 2010* (OEH 2010b).

9 RECOMMENDATIONS

The recommendations are based on the following information and considerations:

- Results of the archaeological survey;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- The assessed significance of the sites;
- Appraisal of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

10. The development must partially avoid Avonlie Artefact Scatter 1 and Avonlie Artefact Scatters 3 and 4 as per the agreed exclusion zones and development design plans detailed in this report.
11. Partial salvage through artefact collection of Avonlie Artefact Scatter 1 must be undertaken post determination and prior to construction, where the artefact scatter extends beyond the agreed exclusion zone and development design plans detailed in this report impact the site.
12. The development must avoid the site Avonlie Scarred Tree 1. A minimum 10m buffer around the tree should be in place to protect the tree root zone.
13. As complete avoidance of Avonlie Artefact Scatters 2, 3 and 4 and the remaining isolated artefacts within the proposal area is not possible or warranted, the artefacts within the development footprint must be salvaged through collection. Artefacts will be moved to a safe area within the property that will not be subjected to any ground disturbance. This can only occur post project determination and prior to construction.
14. RES Australia Pty Ltd commits to undertaking the salvage collection post project determination and prior to construction, and under the auspices of an approved Cultural Heritage Management Plan (CHMP), developed in consultation with the RAPs. This CHMP will contain provisions such that the collection and relocation of the artefacts should be undertaken:
    - by an archaeologist accompanied by representatives of the registered Aboriginal parties.
    - An Aboriginal Site Impact Recording Form will be completed and submitted to AHIMS following relocation for each site harmed or destroyed by the salvage and construction works.
    - A new site card/s will be completed once the artefacts are moved to record their new location on the AHIMS database.
    - Artefact disposition and storage will be undertaken in accordance with Requirement 26 of the Code of Practice (DECCW 2010:35-6).
    - RAPS and an archaeologist will be provided an opportunity to collect artefacts from any proposed fencing or firebreak alignments along the boundary of the proposal area, particularly within the designated exclusion areas following post project determination.
15. To address the potential for finding Aboriginal artefacts and in accordance with provisions outlined in the Avonlie Solar Farm SEARs, an Unexpected Finds Protocol (Appendix C) has been developed to outline procedures to be followed to avoid or mitigate harm to objects further to those documented in this AHCAR potentially located during *any stage* of the life of the Solar Farm project. The CHMP developed for the Salvage Collection will update this Unexpected Finds Protocol with

any further project specific information to assist with avoiding and mitigating harm to any further objects located.

16. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH, the local police and the registered Aboriginal parties should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
17. Further archaeological assessment will be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the registered Aboriginal parties and may include further field survey.
18. RES Australia Pty Ltd are reminded that it is an offence under the NSW National Parks and Wildlife Act 1974 to disturb, damage or destroy and Aboriginal object without approval.

10 REFERENCES

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APPENDIX A
ABORIGINAL COMMUNITY CONSULTATION

Consultation Log of Avonlie Solar project.

Organisation	Contact	Action	Date Sent	Reply Date	Replied by		Response
OEH		Peter Erwin and John Gilding	letter via email	9/11/2017	20/11/2017	letter via post	noted LALCs in LGA to contact. Noted Narrandera LALC is appropriate LALC in project area. Letter dated 14/11/2017 received by NGH 20/11/2017
NTScorp			letter via email	9/11/2017			
National Native Title Tribunal			Online search request	9/11/2017			
Office of Registrar ***Aboriginal Land Rights Act***			letter via email	9/11/2017			
Narrandera Shire Council			letter via email	9/11/2017	20/11/2017	letter via email	suggested contacting the Narrandera LALC and the Narrandera Aboriginal Working Party
Riverina Local Land Services			letter via email	9/11/2017			
Local Newspaper			Wagga Daily Advertiser	11/11/2017			
			Narrandera Argus	9/11/2017			
Response from newspaper ad							
Bundyi Aboriginal Cultural Knowledge		Mark saddler	email registered interest in project following ad	11/11/2017	13/11/2017	KB replied confirming Marks interest in project	registered interest in project
Warrabinya Cultural Heritage and Assessment Group		Eddie Whyman	letter via email	26/11/2017			Registered interest in the project.
OEH list of potential stakeholders							
Narrandera LALC		Kath Harrison	letter via email	20/11/2017	30/11/2017	phone call to NGH	Registered interest in project, noted that it is an important area and wants to be involved in fieldwork.
Council list of additional stakeholders							
Narrandera Aboriginal Working Party			letter via email to council	21/11/2017	21/11/2017	via email	council confirmed via email that letter forwarded to working party
Methodology							**comments due 19 Jan 2018**

Organisation Contact	Action	Date Sent	Reply Date	Replied by		Response
Bundyi Aboriginal Cultural Knowledge	Mark saddler	sent via email	7/12/2017			
Narrandera LALC	Kath Harrison	sent via email	7/12/2017			
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	sent via email	7/12/2017			
Reminder emails on methodology comments						
Bundyi Aboriginal Cultural Knoweldge	Mark saddler	sent via email	9/01/2018	9/01/2018	via email	I would like to express my interest in doing cultural survey work on this project. I will read the info that you have sent me over the next week.
Narrandera LALC	Kath Harrison	sent via email	11/01/2018			
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	sent via email	11/01/2018	11/01/2018	via email	i will have my response, fee rates and requested documents sent to you by Wednesday 17/1/2018. I have a number of field reps to conduct field work and we provide other services if needed.
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	sent via email	16/01/2018			noted comments, rates and insurances. NGH to reply to comments
Bundyi Aboriginal Cultural Knoweldge	Mark saddler	Follow up email re comments on methodology as only sent rates and insurances and interest in fieldwork.	22/01/2018	23/01/2018	via email	noted methodology seem fine
Narrandera LALC	Kath Harrison	follow up via phone call and email	22/01/2018	30/01/2018	via fax	provided rates and insurances details
OEH	Peter Erwin and John Gilding	sent via email	30/01/2018			I just wanted to inform you that there are three RAPs for the Avonlie Solar Farm proposed near Sandigo as listed below. • Bundyi Aboriginal Cultural Knowledge • Narrandera LALC • Warrabinya Cultural Heritage and Assessment Group
NGH reply to methodology comments						

Organisation Contact	Action	Date Sent	Reply Date	Replied by		Response
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	phone call with Eddie	9/02/2018			MB phone call with Eddie re comments on methodology.
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	email reply to methodology	14/02/2018			NGH sent letter reply follow comms with matt last week
Fieldwork						
Narrandera LALC	Kath Harrison	phone and follow up email	9/02/2018			KB discussed rates. Email sent to confirm conversation and details agreed to.
Bundyi Aboriginal Cultural Knowledge	Mark saddler	email re 1 person for fieldwork 26 feb to 2 march	14/02/2018	14/02/2018	email	confirmed available Tuesday till Fri for survey
Narrandera LALC	Kath Harrison	email re 1 person for fieldwork 26 feb to 2 march	14/02/2018			
Warrabinya Cultural Heritage and Assessment Group	Eddie Whyman	email re 1 person for fieldwork 26 feb to 2 march	14/02/2018			
Post Fieldwork						
Bundyi Aboriginal Cultural Knowledge	Mark saddler	NGH email to group with preliminary exclusion map seeking initial comment also providing information on open days	19/03/2018	13/04/2018	via phone call with KB	noted that he was happy with the two proposed exclusion areas and agreed with the location. Noted that the remaining scarred trees outside these areas should also not be impacted. Any aboriginal objects outside the exclusion areas should be collected prior to works and relocated to area that won't be impacted.
Narrandera LALC	Kath Harrison	NGH email to group with preliminary exclusion map seeking initial comment also providing information on open days	19/03/2018	13/04/2018	via phone call with KB	noted would look at email when in office later today and call back. No comments received.

Public Notice placed in the Narrandera Argus 9 November 2017.

Narrandera Argus

Local Classifieds

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

PUBLIC NOTICES

NOTIFICATION FOR REGISTRATION OF INTEREST FOR ABORIGINAL STAKEHOLDERS

NGH Environmental has been contracted by RES Australia Pty Ltd (RES Australia) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed solar farm at Sandigo NSW.

The assessment area comprises Lot 1/DP606800, Lot 30/DP754538, Lot26/DP754538, Lot 13/DP754538, Lot 22/DP754538, Lot 43/DP754538, Lot 2/DP606800, Lot53/DP754538, Lot 1/DP606800, Lot 30/DP754538, Lot 5/DP133396 between Muntz Road and Quilters Road, Sandigo Road, and Sandigo Boree Creek Road and A20 Sturt Highway in the Narrandera Local Government Area.

The purpose of the consultation with Aboriginal people is to assist the proponent in the preparation of the ACHA and to be involved in consultation as part of the lodgement of a State Significant Development application.

The proponent (Res Australia, Suite 4, Level 1 760 Pacific Highway, Chatswood, NSW) is proposing to construct a utility scale solar farm including panels, electrical conduits, transformers, internal access tracks, site office and perimeter fencing. The project will be known as the Avonlie Solar Farm.

In order to fulfil the requirements set out in the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, NGH Environmental is seeking interested Aboriginal parties who hold cultural knowledge of the assessment area to register their interest in the consultation process for the project and to assist in the determination of cultural significance of any Aboriginal objects or places located there.

Registrations should be provided in writing to:

NGH Environmental Pty Ltd
PO Box 62, FYSHWICK ACT 2609

Or via email to: ngh@nghenvironmental.com.au

All correspondence must be received by: **Monday 27 November 2017**

Those registering an interest will be contacted to discuss the project further. Those who do register are advised that their details will be provided to OEH and the Local Aboriginal Land Council, unless they specifically advise in writing that their details are not to be forwarded.

DONOR MOBILE VISITING SOON. PLEASE GIVE BLOOD.

The Australian Red Cross Mobile Blood Service is visiting Narrandera

Monday 27 November, 9.00am – 2.30pm
Tuesday 28 November, 9.00am – 2.30pm

To make an appointment call 13 14 95 or visit donateblood.com.au

Australian Red Cross BLOOD SERVICE

NOTICE

N'DERA RACE CLUB **AGM** Sunday 26th November 11.30am at the Race Club *All welcome*

NARRANDERA LOCAL ABORIGINAL LAND COUNCIL **AGM** Saturday, November 18 11am at 172 East Street *All members welcome*

Meals on Wheels Narrandera Office
Mon 13: B Mayer, Y Hibbard
Tues 14: N & L Martin
Wed 15: H Hodges, M Dodds
Thurs 16: K Paterson
Fri 17: M & R Shields
Frozen
Tues 14: R MacFarlane, S Murphy
Fri 17: I Paynter, T Carroll

CLAIM THE DATE

SUNDAY 10TH DEC Narrandera Lions Club will be conducting "Carols in the Park" from 6pm to 10pm

TRESPASS NOTICES

TRESPASS NOTICE Persons apprehended trespassing upon or shooting over the landarea of Brewarrina Station will be prosecuted. **Ansett Brewarrina Holdings Pty Ltd.**

TRESPASS NOTICE **Lake Midgeon.** Persons are warned against shooting, hunting, wood carting or otherwise trespassing on the property of **Lake Midgeon.** All previous permission is hereby cancelled.

GARAGE SALES

SATURDAY 11 NOV **17 Peter Street**, 10am-1pm. Everything brand new @ discounted prices. *Everything going cheap!*

SUNDAY 12 NOV **37 Lake Drive**, not before 9am. *Everything must go!*

RAILWAY BRUNCH & BROWSE MARKETS SUNDAY 12TH NOVEMBER 8.30am–12.30pm on the Platform

POSITIONS VACANT

Narrandera Shire Council POSITIONS 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

Economic Development Manager Grade 23 $1844.90-$2066.29 per week. Closing Date: 20 November 2017

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

TRESPASS NOTICES

TRESPASS NOTICE Any person found trespassing in any way on **Belalie, Elimatta and Ellerslie** properties will be prosecuted. All previous permission revoked.

POSITIONS VACANT

ALTINA Wildlife Park — **ANIMAL FOOD PREP POSITION**

A position is available to join our team as an animal food preparation member in a full time capacity of 40 hours per week. Duties and tasks would include; clean work areas, equipment, utensils, dishes, etc, weigh, portion, prepare and store a variety of foods according to animals dietary requirements. The Applicant must be able to take direction, have good communication skills, time management, have tolerance and understanding with regards to animals and have the ability to organise and structure daily duties. The Applicant must be willing to do overtime/weekend work.

A competitive wage package will be offered in line with the level of experience and skills.

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 17th November 2017

1ST YEAR APPRENTICE PLUMBER

Narrandera Plumbing Services T/A (R&J Hutchison plumbing) is a locally owned and operated plumbing business.

Our business is seeking a **1st year apprentice** for 2018 who is committed to completing their qualifications through the TAFE system. We are welcoming motivated school leavers to apply for this position. Between 16 & 20 years of age. Applicants must have/obtain an OH&S White card

All applicants will need:

- A genuine desire to complete your plumbing apprenticeship
- To be reliable and punctual
- A drivers licence or willing get one
- A willingness to learn
- Strong attention to detail and pride in the quality of work
- Good communication skills
- Ability to work independently and as part of the team
- Happy and well mannered nature
- Act in a professional manner at all times
- Have a good work attitude and be motivated to learn

The right applicant will be rewarded a fantastic trade at the completion of apprenticeship that can take you places.

Applications close: 8th December 2017

Please forward your resume to admin@rjhutchisonplumbing.com

POWER THE HAPPY FOR SICK KIDS Donate now starlight.org.au

Support your local businesses. The Argus is one of them!

CHURCH NOTICES

ANGLICAN CHURCH — CATHOLIC CHURCH — CRC CHURCHES INTERNATIONAL — NARRANDERA CHRISTIAN FELLOWSHIP — SEVENTH DAY ADVENTIST CHURCH — ST JOHN'S UNITING CHURCH — ST JOHN'S LUTHERAN CHURCH

CONVENIENT WAYS TO PLACE YOUR AD IN THE ARGUS

Phone your advertisement to us on 6959 2222 from 9am to 5pm, Monday to Friday.

Post your advertisements to the Narrandera Argus, PO Box 5, Narrandera NSW 2700.

Email your classified advertisement to classifieds@narranderaargus.com.au 24 hours a day, 7 days a week.

In Person – just drop into our office at 167 East Street, Narrandera from 9am to 5pm, Monday to Friday.

Deadlines 12noon two business days prior to publication. Tuesday for Thursday's edition and Friday for Tuesday's edition.

Cancellations of advertisements must be made by 9am the day prior to publication.

Minimum Charge Lineage advertisements for Tuesday and Thursday's Narrandera Argus are $14.70 (3 lines) plus $2.95 for each line after.

Please Check No adjustments will be made for errors unless attention is drawn to them on the DAY of publication.

Indemnity The company reserves the right to alter, omit or change, classification of advertisements and, while every care is exercised it is not responsible for errors, misclassifications or non-insertions.

10 — Thursday, November 9, 2017 www.narranderaargus.com.au Narrandera Argus

Public Notice placed in the Wagga Weekend Advertiser November 11 2017

66 WEEKEND ADVERTISER Saturday, November 11, 2017 dailyadvertiser.com.au

Public Notices

TRAFFIC CONTROL TRAINING
at the William Farrer Hotel
14th, 15th and 16th November 2017
8.30am - 4pm
2 days training - 1/2 day Assessment
Includes lunch and morning tea on training days. $660 per person
Contact Felicia 4275 6050
Dawson's Training Services in a 3rd party agreement with Achieve Training and Assessment Services RTO 90659

Public Notices

IF you are the lady that I talked with in front of Il Elcorso restaurant Baylis St. at 7.30pm on 2/9/17. When picking up a pizza next door would you please contact me on 0427 379 393.

Luff Family Reunion
Luff family of Gobarralong by Centennial Reunion
17-18 March 2018
Details:
www.luffreunion.com & facebook.com/luffamilyofgobaralong

Public Notices

Wagga Wagga City Council

Looking for Wagga Wagga City Council information?

Refer to the Council News feature located in the news section of this newspaper to find Wagga Wagga City Council public notices, job ads and community information in the one place - every week.

Council News
weekly information from us to you

@waggacouncil
Share your #waggaview
wagga.nsw.gov.au/councilnews

Notification for Registration of Interest for Aboriginal Stakeholders

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FYSHWICK ACT 2609

Or Via Email to:
ngh@nghenvironmental.com.au

All correspondence must be received by **Monday 27 November 2017**

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designlink
designlink - Creative design and print solutions for any platform.
designlink.fairfax.com.au
designlink@fairfaxmedia.com.au
Fairfax Media

Wanted to Buy

IFAS, High frequency, violet ray machine. Phone Steve at 0424 827 943.

NEED EXTRA CASH? HAVE A GARAGE SALE

Caravans & Camping

ALERT
Beware of vehicles being offered at prices considerably lower than their market value; this could be a lure placed by scammers. Please DO NOT send money via any means to guarantee any purchase.
Visit https://www.scamwatch.gov.au and search "classifieds scams" for further information.
Fairfax Media

Storage

EWSS
East Wagga Storage Solutions
• Ideal for boats or caravans
• Various size options
• High level security
fitzpatricks PCI commercial
6921 5677

Tenders

NSW Office of Environment and Heritage
NSW Planning & Environment

Invitation to tender – Handyman/Farmhand Contract

The Wagga Research Centre is a 220ha property on the Olympic Highway in Wagga, 10 minutes from the CBD. We are looking for a handyman to do gardening, general maintenance and a small amount of farm maintenance. We provide all tools and required training. The selected candidate will need to understand WHS requirements, obtain relevant insurance and their own vehicle. The selected candidate must be able to work independently and would be required to attend the site 2-3 days each week and in emergency situations. This will be a 3 year contract with a 3 month trial period. Candidates with prior experience in any of these areas will be considered. Suit semi-retiree, small business operator or farmhand. As an onsite tour will occur on Friday 17 November at 4pm to provide an overview of the requirements of the role, we strongly recommend interested parties attend the onsite tour. Paperwork (tender documents) can be collected from our main office at 7161 Olympic Highway (entrance near Wagga Nursery). Applications are to be summitted by tender. Please RSVP by phone 02 6932 9100 if you are attending the onsite tour.

Closing date: 1/12/2017 Contact: Shantel Chaffey
Phone: 0427 748 057 Email: shantel.chaffey@environment.nsw.gov.au

Goldenfields Water

Tender 11/2017 – Design and Construction of Concrete Reservoirs

Goldenfields Water invites tenders for the design and construction of two concrete 0.5ML storage reservoirs for the expansion of its supply area in the Mandamah region of NSW.

A mandatory pre-tender meeting is to be held 23 November 2017, with attendance notification due by close of business 17 November 2017.

Any person willing to fulfil the requirements of the proposed contract is invited to submit a tender to Goldenfields Water by **2.00 pm** on **Tuesday 12 December 2017.**

The tender document is available for download via the Goldenfields Water Tenderlink portal at https://www.tenderlink.com/gwcc/

Phillip Rudd PO Box 220
General Manager Temora NSW 2666

Trades & Services

A Job for Bob
Pruning, Weeding, Gutters, Yard, Shed cleaning. Tree, Fence, Rubbish Removal. Odd jobs. Free Quotes.
Phone Bob
0418 658 770

"HANDYMAN JOHNNO"
For those jobs around the home
• Small tree removal
• Minor repair jobs
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Fixed prices
0432 827 254

HOME HANDYMAN REPAIRS
• For those small repairs around the house
• Reliable prompt
Call Clem
04712 467 027

Trades & Services

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BATHROOM RENOVATIONS
For a FREE quote phone
0412 694 590
Lic # 27950C

B & J ALBERT CONCRETING
Driveways, Footpaths, House slabs, etc
Phone Baz:
0404 087 801
Lic 229907C

Personal Notices

SELF MADE MAN SEARCHING FOR SOULMATE
Tall, retired, mature gent with a nice physique and Blue eyes with interests including travel, dining out and good old fashioned romance, this genuine gent would like to hear from you. Would suit happy, country lady aged 75+ seeking companionship/love.
Call 1800 315 311 or text 0455 133 314 to make contact today.

Single? Alone?
Put an end to loneliness bring love & happiness into your life. The Love Success Matchmakers know many wonderful people also looking for their soulmate & can put you in touch with someone perfect for you, as soon as today. You don't need a computer & your privacy is assured.
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Adult Services

AUSSIE LISA
HERE NOW
0432 058 232

BARBARA
Beautiful, classy, raunchy Aussie, very busty DD. Pic avail. 1 week. Ph: 0455 810 222.

TRANS
Aussie Monique Active, Versatile, busty blonde. Ph: 0413-693-398

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Buy and sell property at the right price.
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Adult Services

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Size 6 & 7, Charming, Friendly, Sexy, Top Service
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PHONE:
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New Saxons
Sophia, Lily
ARE BACK!
Thailand, Taiwan
22, 25 yo, size 6 & 8
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Top Service
In or Out call / Open 24/7
4 Saxon St
02 6925 1828
(DA97/0261

NEW IN WAGGA

MIMI
22yo, slim, busty, D cup, size 6, attractive, great experience.
0424 865 572

Gypsy's
Kittens & Cougars
Blondes Redheads Brunettes
Inhouse & Escorts
Strips & XXX shows
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Join the social network for your suburb

Every day over **6,500 suburbs** across Australia use Nabo to get better connected with their local area. Here you can **share recommendations, discover events,** and **buy, sell or borrow items** all with people local to you.

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APPENDIX B
REPORT FROM MARK SADDLER – BINDYI CULTURAL SERVICES

Bundyi Cultural Services

Mark Saddler

Avonlie Solar Farm, Sandigo NSW.

27/2/2018 to 2/3/2018

Bundyi Cultural Services, Mark Saddler

3/05/2018

Artwork by Mark Saddler. (Copyright)

Artwork Title, Murrawarra (stand your ground, protect)

This report was compiled by Bundyi Cultural Services, Mark Saddler.

Contents:

"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.

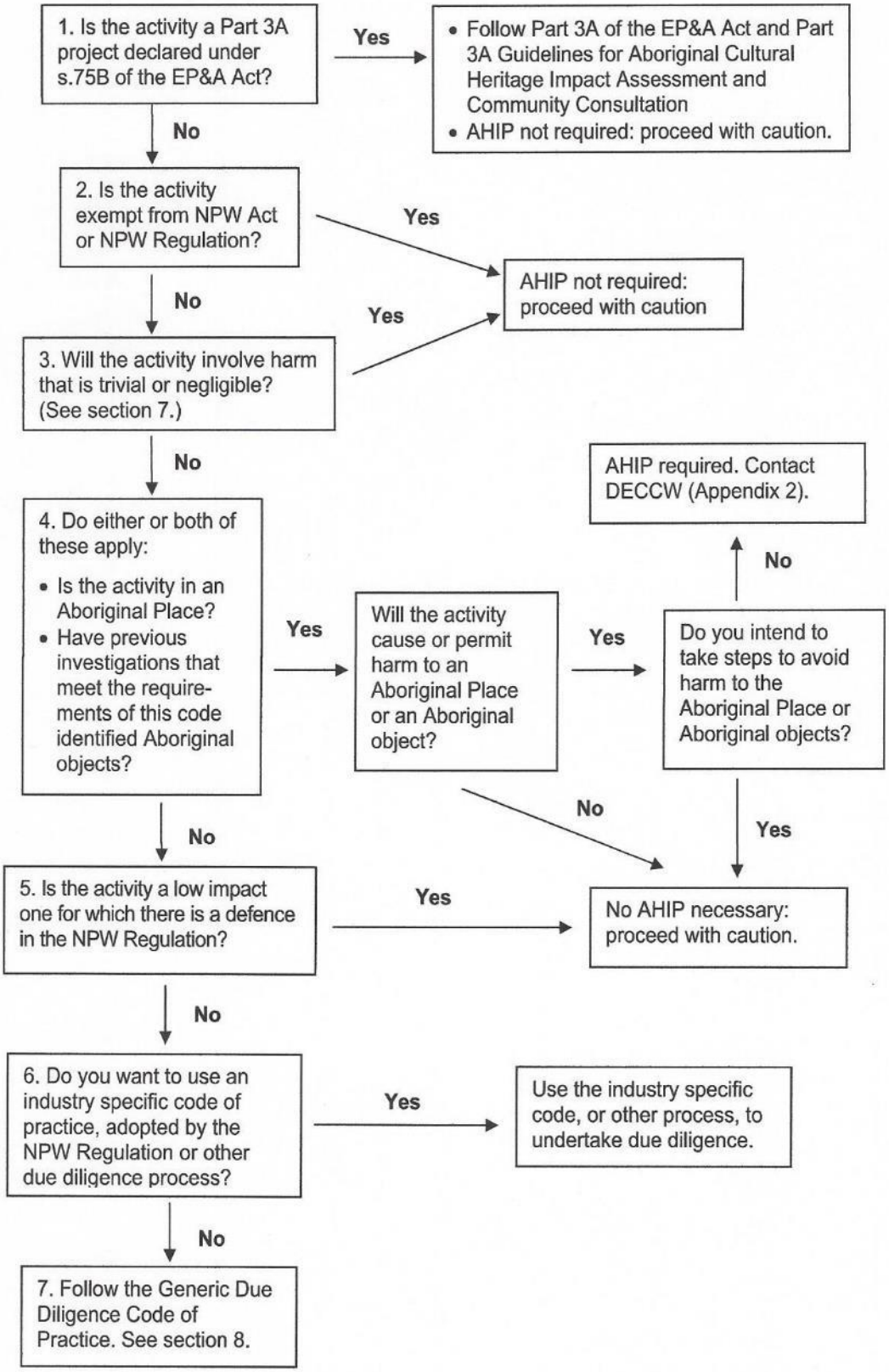
The NPW Act allows for a generic code of practice to explain what due diligence means. Carefully following this code of practice, which is adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation) made under the NPW Act, would be regarded as 'due diligence'. This code of practice can 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.

Office of Environment & Heritage

NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : 3.5.18

Client Service ID : 342673

Mark Saddler

Date: 03 May 2018

P.O.Box 8005 Kooringal Post Office
Kooringal New South Wales 2650

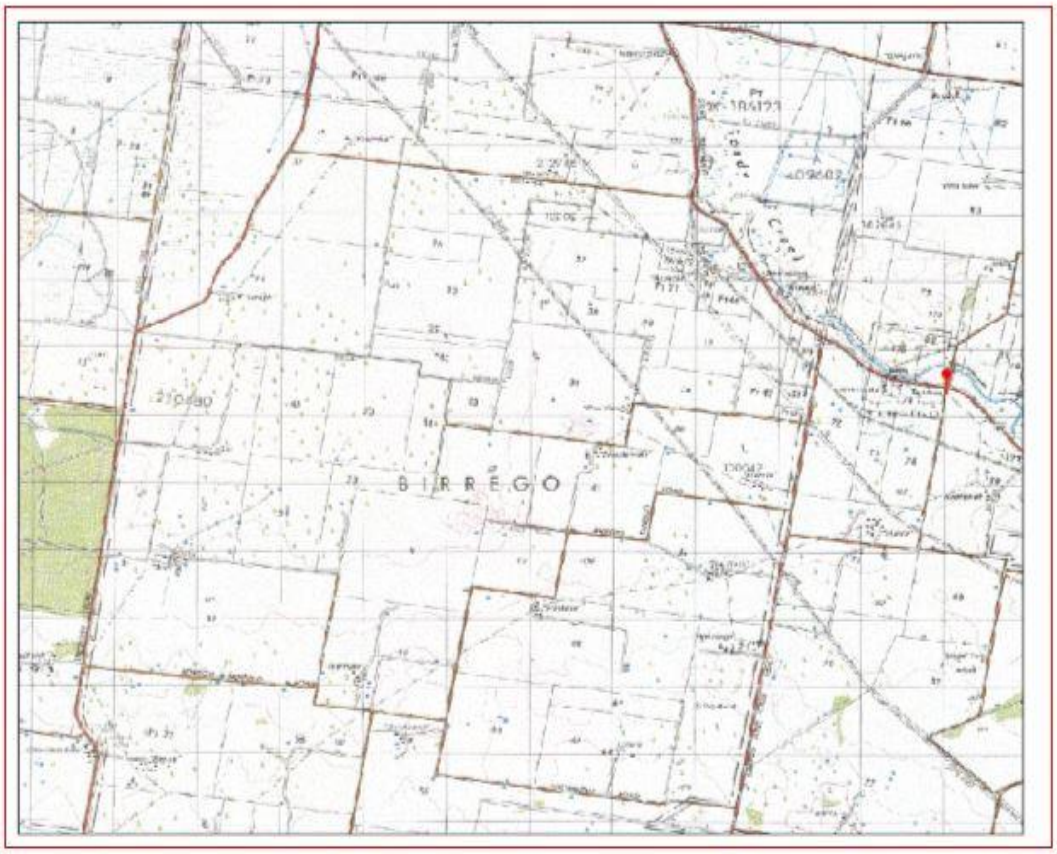
Attention: Mark Saddler

Email: marksad@live.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 462000 - 464000, Northings : 6130000 - 6140000 with a Buffer of 1000 meters. Additional Info : Checking on site places for cultural survey, conducted by Mark Saddler on 03 May 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.

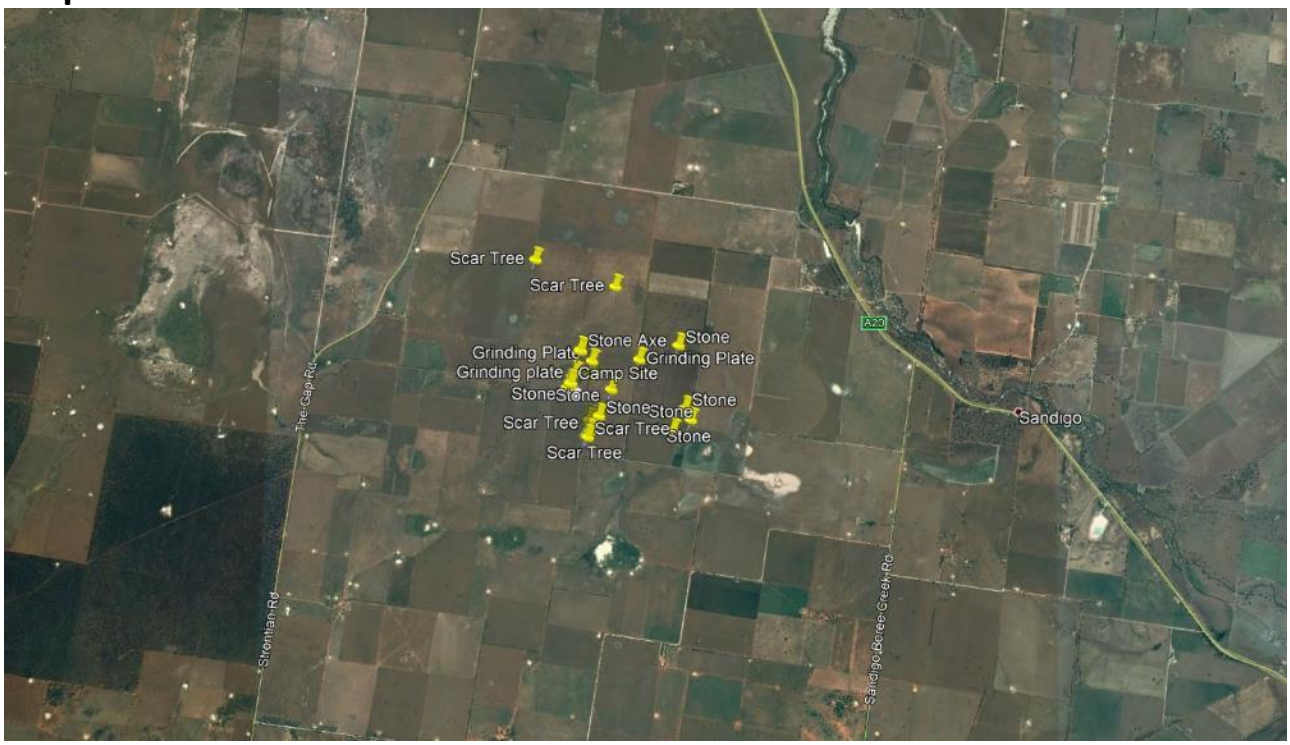


A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

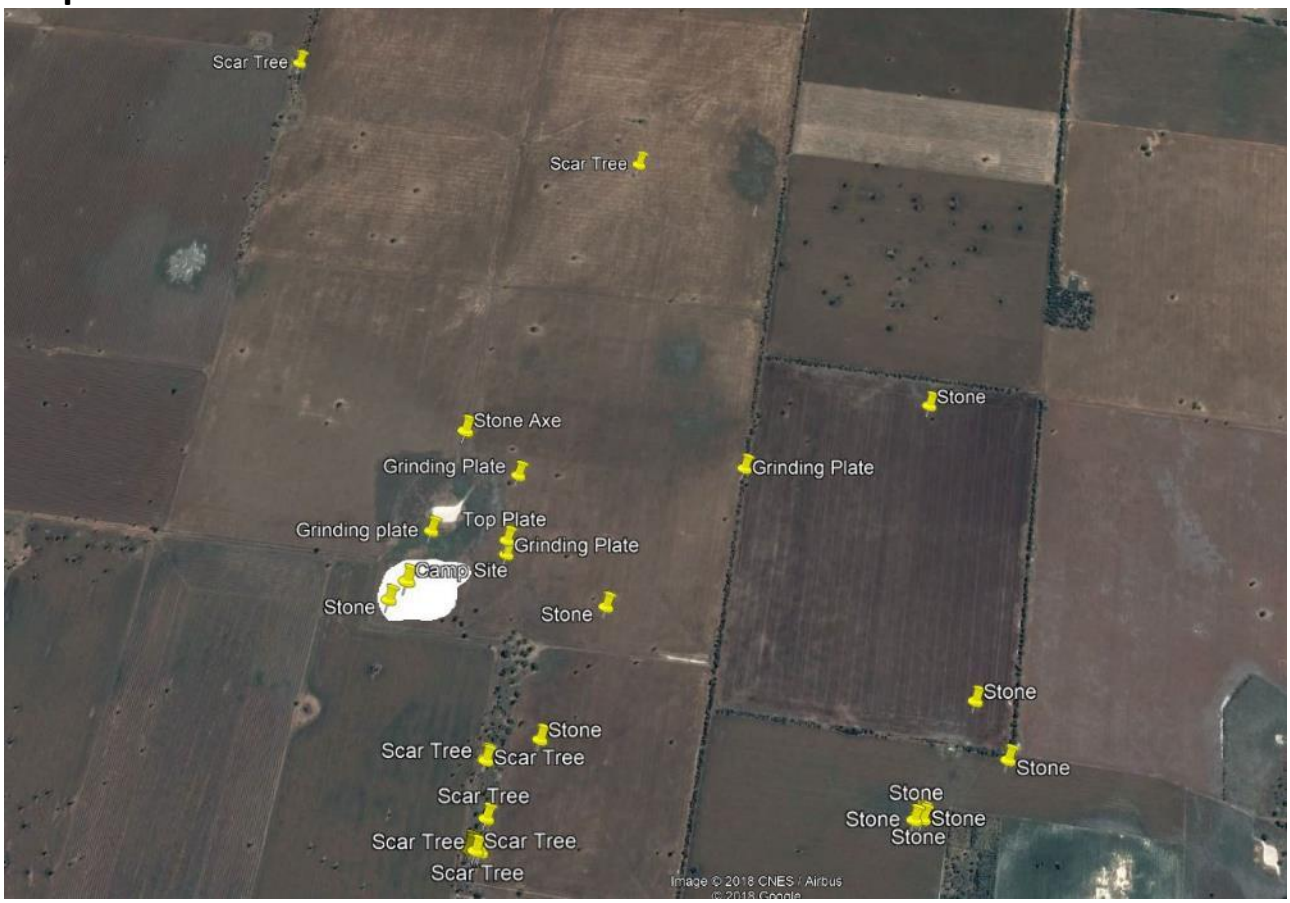
25	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

Map and reference location to site:

Map 1



Map 2



Site recordings and location of site cards relevant to this site:

Site name	Avonlie Solar Farm Sandigo, NSW.		
Recorder	Mark Saddler		
Contact details	Ph 0412 693 030	Email:	marksad@live.com.au
Date prepared	3/05/2018	Web:	http://www.bundyiculture.com.au/

AHIMS ID (Site Card ID)	Site Type	Location of Site Cards on Web Page.	Date Recorded
49-6-0141	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	27/4/2018
49-6-0142	Item		
49-6-0143	Item		
49-6-0144	Item		
49-6-0145	Item		
49-6-0146	Item		
49-6-0147	Item		
49-6-0148	Item		
49-6-0149	Item		
49-6-0150	Item		
49-6-0151	Item		
49-6-0152	Item		
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49-6-0157	Item		
49-6-0158	Item		
49-6-0159	Item		
49-6-0160	Item		
49-6-0161	Item		
49-6-0162	Item		
49-6-0163	Item		
49-6-0164	Item		
49-6-0165	Item		

Stakeholder details	Responsibilities	
Lockhart Shire Council	**JOHN GEPPERT**	02-6920 5305
Wagga Aboriginal Local Lands Council	Cultural Advisor	(02) 6921 4095
Bundyi Cultural Services, Mark Saddler	Culture Advisor, Recorder, Knowledge Holder	0412 693 030
NGH Environmental Matthew Barber	NGH	02-62805053

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.

03/05/2018

Avonlie Solar Farm, Sandigo NSW.

On my site inspection from 27/02/2018 to 02/03/2018, I inspected a large area known as Avonlie near Sandigo NSW. The place instantly felt like that many people have visited and lived at this camp area. This area I believe was inhabited by Wiradjuri people and was a place where many camped and lived over a long period of time.

In this area, I noticed many species of bird including Grass Parrots, Willy Wag Tail, Eagles, Rainbow Lorikeet, Galah, Cockatoo and White Winged Chough to name a few.

The area also has good regrowth of salt bush, some native plants and young tree suckers.

This area has been heavily impacted by cattle and machinery. Many Wiradjuri/ Aboriginal sites have been damaged and driven over, this needs to stop, and actions taken to stop this from happening again.

In Map 2 page 8 of this report, a very significate camp area with multiple artefacts was found and recorded. Also, a row of scarred trees to the south of the camp area I have also recorded. These areas need maximum protection form further damage, I propose that both these areas are classified and marked as no-go zones (exclusion areas)

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 for Glossy Black Cockatoo.

I would also request that when work is undertaken for the proposed solar farm that local Wiradjuri people are employed to care and watch out for the area just in case more items are found which can then be recorded, moved and replaced when work is completed.

I would also ask that any items that are removed are done so in the presence of a Wiradjuri person and that all items are returned to the site for ceremonial replacement.

I would be happy to assist when the plans are draw for the solar farm in the future with regards to Wiradjuri/ Aboriginal site protection.

Procedures to work around Aboriginal sites can be found at this link,

http://www.aboriginalheritage.org/sites/legislation/

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.bundyiculture.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

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APPENDIX C UNEXPECTED FINDS PROTOCOL

C.1 INTRODUCTION

This unexpected finds protocol has been developed to provide a method for managing unexpected non-Aboriginal and Aboriginal heritage items identified during any stage of the Project. The unexpected finds protocol has been developed to ensure the successful delivery of the Project while adhering to the NSW *National Parks and Wildlife Act 1974* (NPW Act) and the *Heritage Act 1977* (Heritage Act).

All Aboriginal heritage objects are protected under the NPW Act. Under Part 6 of the Act, an AHIP may be issued that allows for harm to objects. However, there are sometimes circumstances where Aboriginal objects or deposits are encountered that weren't anticipated, despite undertaking appropriate heritage assessment prior to the commencement of the Project, that may be of high scientific and cultural significance.

Therefore, unexpected heritage items may still be identified during construction, operation and maintenance works. If this happens the following unexpected finds protocol plan should be implemented Any unanticipated find of potential heritage value should follow the process outlined below to avoid breaching obligations under the NPW Act. This UFP provides some guidance as to the circumstances of when such finds may occur and the actions required.

C.2 WHAT IS A HERITAGE UNEXPECTED FIND?

An unexpected heritage find is defined as any possible Aboriginal or non-Aboriginal heritage object or place, that was not identified or predicted by the project's heritage assessment and is not covered by appropriate permits or development consent conditions. Such finds have potential to be culturally significant and may need to be assessed prior to development impact.

Unexpected heritage finds may include:

- Aboriginal stone artefacts, shell middens, modified trees, hearths and rock art;
- Human skeletal remains; and
- Remains of historic infrastructure and relics.

C.3 ABORIGINAL HERITAGE PLACES OR OBJECTS

All Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act).

An Aboriginal object is defined as:

> Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

All Aboriginal objects are protected and it is an offence to harm or desecrate an Aboriginal object or place.

C.4 HISTORIC HERITAGE

The *Heritage Act 1977* protects relics which are defined as:

Any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance.

C.5 UNEXPECTED FINDS MANAGEMENT PROCEDURE

In the event that any unexpected Aboriginal heritage places or objects or any substantial intact historic archaeological relics that may be of State or local significance are unexpectedly discovered during the Project, the following management protocols will be implemented:

1. Works at that immediate identified heritage location will cease. Personnel should notify their supervisor of the find, who will notify the project manager.
2. An appropriate buffer zone of at least 20 metres to allow for the assessment and management of the find. All site personnel will be informed about the buffer zone with no further works to occur within the buffer zone.
3. Heritage specialist will be engaged to assess the Aboriginal place or object encountered. Representative from the registered Aboriginal Stakeholders for the Project may also be engaged to assess the cultural significance of the place or object.
4. The Project approvals will be reviewed to assess consistency with the approvals to impact Aboriginal heritage within the Project area.
5. The discovery of an Aboriginal place or object will be reported to the local office of the Office of Environment and Heritage (OEH).
6. If the Aboriginal heritage places or objects are found to be covered under the existing approvals to impact Aboriginal heritage within the Project area, works may continue to be conducted in accordance with mitigation measures and approval requirements.
7. If the Aboriginal heritage places or objects are found to not be covered under the existing approvals to impact Aboriginal heritage within the Project area, works will not recommence at the heritage place or object until advised to do so by OEH.
8. If the heritage place or object can be managed *in situ*, works at the heritage location will not recommence until appropriate heritage management controls have been implemented, such as protective fencing.
9. For historic relics, work must cease in the affected area and the Heritage Council must be notified in writing. This is in accordance with section 146 of the *Heritage Act 1977.*
10. Depending on the nature of the discovery, additional assessment may be required prior to the recommencement of work in the area. At a minimum, any find should be recorded by an archaeologist.

C.6 HUMAN SKELETAL REMAINS

If any human remains or suspected human remains are discovered during any works, all activity in the areas must cease immediately. The following contingency plan describes the actions that must be taken in instances where human remains or suspected human remains are discovered. Any such discovery at the activity area must follow these steps.

Discovery:

- If any human remains or suspected human remains are found during any activity, works in the vicinity **must** cease.

- All personnel should leave the area immediately
- The remains must be left in place, and protected from harm or damage.
- The remains should remain secured in the area so as to avoid further harm.

Notification:

- The NSW Police must be notified immediately. All details of the location and nature of the human remains must be provided to the relevant authorities.
- If there are reasonable grounds to believe that the remains are Aboriginal, the Office of Environment and Heritage, Albury or Griffith office must be contacted as soon as practicable and provide any available details of the remains and their location. The OEH's Environment Line can be contacted on 131 555 if able to contact the OEH Albury or Griffith offices.
- The Project Manager must be contacted immediately. If the remains are considered to be Aboriginal, an archaeologist may be contacted, as may the registered Aboriginal community members forming part of this project (including the Griffith and Hay Local Aboriginal Land Councils).

Process:

- If the remains are considered to be Aboriginal by the Police and OEH, an appropriate management and mitigation, or salvage strategy will be implemented following consultation with the Aboriginal community and OEH.
- If the remains are considered to be Aboriginal by the Police and OEH no work can recommence at the particular location unless authorised in writing by OEH.