8 Impact assessment

8.1 Impact types

8.1.1 Potential sources of impact

The project design and construction elements are described in detail in Chapter 1 and in Chapter 2 of the project EIS.

As noted within the EIS, the need for heavy civil works such as grading/levelling and compaction will be minimised, as the flattest land areas within the three array areas which are already mostly cleared of vegetation have been selected.

The following ground disturbance activities proposed as part of the project have the potential to disturb Aboriginal objects identified within the development footprint:

- installation of the PV modules (ie driving or screwing piles into the ground, possibly including pre-drilling but only if required);
- trenching for underground cabling;
- clearing for internal access tracks and PCU placement;
- the construction of up to three solar array substations and BESSs, the locations of which will be confirmed during the detailed design stage of the project;
- the construction of a grid substation and BESS, the location of which will be confirmed during the detailed design stage of the project;
- installation of supporting infrastructure (eg O&M buildings, temporary laydown areas, a site office, parking areas and landscaping);
- the construction of a temporary construction accommodation village (if required);
- installation of overhead transmission lines (anticipated to be supported by single concrete, wood or steel pole structures) along the proposed ETL options; and
- installation of new internal roads to enable access to the three array areas from the surrounding road network.

Some heavier earth moving will likely be required for certain project infrastructure (eg substations and BESSs) in those instances where a level pad is necessary. In addition, grading around lower order streams and drainage channels within the three array areas may also be required in order to manage erosion during construction.

Outside of the development footprint, ground disturbance activities will be limited to the installation of security fencing (typically along existing property fence lines) and a number of creek crossings should they be required (refer Figure 1.2). Notwithstanding, although the crossings are outside of the development footprint, they have been captured in the survey effort through coverage of relevant watercourses. Security fencing will be restricted to land within the project boundary and will avoid identified sites. The exact location of creek crossings will be determined during detailed design.

8.1.2 Definition of impact types

Direct impacts can occur on a varying scale. Disturbance, where artefacts are moved locally from their current setting, is distinguished from loss where artefacts are removed entirely from their current context or destroyed.

Disturbance means Aboriginal sites and objects will be disrupted and moved a short distance through the displacement of ground. Partial disturbance occurs where a portion of a site will be disturbed. Total disturbance is when the entirety of the Aboriginal site will be disturbed.

Disturbance represents by far the most widespread type of potential impact by the project through the installation of the PV modules and trenching for underground cabling. Disturbance will occur through post placement and trenching for underground cabling for the PV modules across the three array areas. This assessment assumes that sites comprising of stone artefacts that are not explicitly designated for avoidance within the development footprint boundary will be subject to total disturbance. However, it is noted that the actual physical impact on a particular site would vary considering that rows of PV modules will be spaced approximately 5-8 meters apart assuming that single axis tracking is the technology that it is utilised.

Disturbance may also occur as result of a number of the other activities listed in Section 8.1.1, including clearing for internal access tracks and PCU placement, as well as, installation of overhead transmission lines, new internal roads and security fencing.

Loss entails complete removal of a site's elements, such as through large-scale earthworks. The total modification of a landscape also can constitute loss, even if artefacts are collected and later returned to the modified surface in their original position because the context (an integral part of archaeological site value) is irretrievably lost. Total loss is when the entirety of a site will be lost as a result of the project. Partial loss describes the loss of part of a site. Loss could be caused from earthworks related to the installation of the solar array and grid substations, BESSs, construction accommodation village and supporting infrastructure.

Degrees of impact from lesser to greater are:

- partial disturbance;
- total disturbance;
- partial loss; and
- total loss.

8.2 Impacts by project element

Out of the 96 sites identified for the project, 47 sites will be avoided and 39 sites will be impacted to some degree. Impacts are currently undetermined for 10 sites. Of the impacted sites, 32 sites will be totally disturbed, one site will be partially disturbed and four sites will be subject to total loss.

Two of the sites listed as being impacted (NE10 and NE13) will not be impacted by the project elements; however, RAPs have raised concern that they may be inadvertently impacted by project landholder vehicle movements in the future. These sites are currently on existing farm access tracks outside the development footprint but within the project boundary. The project landholders are aware of their existence and are avoiding the sites; however, during consultation, RAPs noted that they would prefer it if their surface contents are collected to ensure the artefacts are not lost. Accordingly, this report has set out surface collection as management for these sites and therefore they are noted as being impacted from this particular activity. This measure is further referenced in Table 2.2, Topic 8 and Section 9.4.2 of this report.

A breakdown of the degree of impact by project element on each site type is presented in Table 8.1.

Table 8.1 Degree of impact by project element

Impact type/site type	Level of impact						
	No impact	**Partial disturbance**	**Total disturbance**	**Total loss**	**Undetermined**	**Other**	**Total**
No impact							**47**
Artefact scatter	7						7
Artefact scatter, PAD	7						7
Grinding groove	1						1
Grinding groove, artefact scatter, PAD	4						4
Grinding groove, PAD	1						1
Historical site – unverified (NE57)	1						1
Isolated find	13						13
Isolated find, PAD	1						1
Quarry, artefact scatter, PAD	4						4
Scarred tree	8						8
Solar array impacts							**33**
Artefact scatter		1	6				7
Isolated find			26				26
Site access tracks							**1**
Isolated find				1			1
Substation/BESS footprints							**3**
Isolated find				3			3
Undetermined - potential array impact							**9**
Artefact scatter					1		1
Artefact scatter, PAD					1		1
Isolated find, PAD					1		1
Quarry, artefact scatter, PAD					1		1
Scarred tree					5		5
Undetermined - potential site access track impact							**1**

Table 8.1 Degree of impact by project element

Impact type/site type	Level of impact						
Artefact scatter, PAD (NE70)					1		1
Other – refer Section 9.2.4							**2**
Isolated find, PAD (NE10)						1	1
Artefact scatter (NE13)						1	1
Total	**47**	**1**	**32**	**4**	**10**	**2**	**96**

8.3 Impacts and site significance

Impacts to Aboriginal sites are summarised according to their level of significance in Table 8.2. No sites of high significance will be impacted by the project. This comprises the four grinding groove site types of high significance.

No sites of moderate significance are currently designated for impact by the project. However, there are seven sites of moderate significance (NE15 [artefact scatter], NE27 [artefact scatter, PAD], NE33 [quarry, PAD], NE45 [scarred tree], NE61 [scarred tree], NE70 [artefact scatter, PAD] and NE83 [isolated find, PAD]) where impacts are currently undetermined. UPC are exploring opportunities to maximise the flexibility of the final PV array layout and associated infrastructure and therefore are in the process of investigating whether impacts to one or more of these sites is appropriate (refer to Section 9.4). The final outcomes for these sites will be determined prior to project approval in accordance with the assessment approach described in Section 9.4 of this ACHA.

The 37 sites currently designated for impact by the project are all of low scientific significance. This comprises a total of 30 isolated artefacts and seven artefact scatters. The impact to three scarred trees of low scientific significance (NE47, NE49 and NE67) is currently undetermined as expert assessment is needed to confirm whether they are Aboriginal made and require management. Depending on the outcomes of expert assessment, UPC may look to remove and mitigate impacts to these sites to maximise the development footprint, wherever possible (refer to Section 9.4.1). It should be noted that these trees are in poor condition. NE47 is a partially felled tree (cut in half) but still standing and NE49 is a felled tree that has its scar cut in half. NE67 has an ambiguous scar and may not be of Aboriginal origin.

Table 8.2 Site significance and levels of impact

Site significance/site type	No impact	Partial disturbance	Total disturbance	Total loss	Undetermined	Other	Total
High							**4**
Grinding groove, artefact scatter, PAD	3						3
Grinding groove, PAD	1						1
Moderate							**31**
Artefact scatter	2				1		3
Artefact scatter, PAD	7				2		9
Grinding groove	1						1
Grinding groove, artefact scatter, PAD	1						1
Isolated find	1						1

Table 8.2 Site significance and levels of impact

Site significance/site type	No impact	Partial disturbance	Total disturbance	Total loss	Undetermined	Other	Total
Isolated find, PAD	1				1	1	3
Quarry, artefact scatter, PAD	4				1		5
Scarred tree	6				2		8
Low							**60**
Artefact scatter	5	1	6			1	13
Isolated find	12		26	4			42
Scarred tree	2				3		5
Not applicable							**1**
Historical site – (NE57)	1						1
Total	**47**	**1**	**32**	**4**	**10**	**2**	**96**

8.4 Potential impacts to unidentified sites

Stone artefacts may occur very sporadically (probably as isolated artefacts or small artefact scatters) within or outside of the survey transect paths, but within the development footprint, in an unpredictable pattern representative of background scatter. The limitation of almost every archaeological survey is that ground surface visibility affects the identification of all artefacts within any given survey area. The key aim is to have characterised the archaeological nature of the proposed area of impact for a project (ie the development footprint) so that appropriate avoidance and mitigation measures can be employed on a broader scale. Unknown artefacts may occur in moderately to highly-disturbed areas predicted to be of low archaeological significance.

EMM notes that although the development footprint covers a broad area, the nature of the main impact type, being PV module installation and associated trenching for underground cabling installation, will represent a type of impact that is similar to what has already occurred within the development footprint through historical vegetation clearance followed by continual pasture improvement, installation of fencing, sculpting of contour banks, grading of farm access tracks etc.

The project is unlikely to impact additional unidentified site types such as quarries or grinding groove sites because the survey specifically targeted landform features predicted to contain such types.

EMM acknowledges that it is possible that not all scar trees have been identified within the development footprint and therefore potential impacts to unknown scar trees are not currently determined. This is addressed further in Section 9.4.1.

8.5 Measures to minimise harm and alternatives

The project refinement process is described in detail in Chapter 1 of the EIS. EMM and UPC have worked closely together and in consultation with RAPs to refine the development footprint from the site boundary presented as part of the PEA, with the objective of developing an efficient project that avoids and minimises environmental impacts wherever feasible whilst still being constructible. Avoidance of significant Aboriginal cultural heritage values has been a key aspect of this refinement process wherever possible.

Initial measures to avoid areas of archaeological sensitivity were made during the preparation of the PEA, whereby EMM performed a high-level constraints analysis of the project investigation area, which covered an area of 11,622 ha (refer to Figure 1.3 in the EIS). This analysis focused on the implications of AHIMS search results and a landscape review, including an accepted sensitivity model that assumed that significant Aboriginal sites are most likely to occur near reliable watercourses. It also involved a preliminary site inspection by archaeologist Dr Graham Knuckey to verify AHIMS sites within the project investigation area (refer Section 4.2).

In conjunction with the identification of other environmental constraints and stakeholder engagement, this resulted in the selection of the PEA site boundary of 4,244 ha (the study area), which largely avoided the higher order watercourses, including Salisbury Waters, Dog Trap Creek, Julia Gully and Lambing Gully. Furthermore, the PEA site boundary (the study area) was set back beyond 1 km from a previously recorded Bora Ring site on AHIMS (#21-4-0002).

Once the study area was established, EMM proceeded to conduct an archaeological investigation in accordance with the Code. The outcomes of the desktop investigations performed across the study area are presented in the background chapters of this report (refer Chapters 3, 4 and 5). A number of potential constraints to the project were identified during this process. These constraints informed the refinement of the site boundary presented in the PEA (the study area) and formed the area that was used to guide the archaeological survey effort. Significant refinements made during this process included:

- refining the development footprint further away from Dangars Lagoon (further to the East), a known area of Aboriginal archaeological and cultural significance (southern array area);
- refining the development footprint away from land on the Harnham Hill soil landscape which is known to feature a significant quarry site referred to as 'Salisbury Court' (AHIMS#21-4-0004) (southern array area);
- establishing significant setbacks to 3rd order and above watercourses (northern, central and southern array areas); and
- refining the development footprint to exclude land north of Salisbury Waters (southern array area).

In addition to the refinements described above, significant refinements have also been made during and subsequent to the archaeological surveys performed as part of the ACHA. These refinements are directly aimed at avoiding identified Aboriginal sites. Additionally, a number of refinements have been made to the proposed alignments of ETLs and site access corridors to connect the three array areas to minimise impacts on identified Aboriginal sites. The proposed footprint for the solar array and grid substations and BESSs have also been refined in response to identified Aboriginal sites.

Throughout the project development process, UPC has attempted to adapt its preliminary plans by taking into account the identified environmental impacts and constraints wherever practicable. The detailed design and engineering of the project infrastructure will, however, only take place post-approval (during the construction phase) and will be undertaken by the engineer, procure and construct (EPC) contractor(s) for the project. Hence, approval is being sought for flexibility in the placement of infrastructure within the refined development footprint.

A clear way to emphasise the measures employed to minimise harm is to note that all 96 sites identified during the survey as part of this ACHA were previously in areas planned for project impact. Through the project refinement process, all sites of high significance and most sites of moderate significance* will be avoided by the project.

The outcome of the project refinement process is that only sites of low (n=37) significance and possibly up to seven sites of moderate significance will be impacted by the project*. These sites cannot be avoided without significantly affecting the commercial viability of the project as avoidance would significantly reduce the land available for PV modules within the development footprint or make the construction and operation of the PV plant practically or commercially unfeasible in those areas.

8.6 Cumulative impacts

The landscape surrounding the development footprint has been modified by historical land use practices and past disturbances associated with land clearing, cropping and intensive livestock grazing. The most widespread impact in the region has occurred from establishing and maintaining land suitable for agricultural production. These activities are likely to have removed many modified trees, reduced the archaeological integrity of many open stone artefact sites and would have destroyed more fragile site types such as hearths, ceremonial sites and burials.

Considering the above, the development footprint has already been subject to widespread damage to Aboriginal sites and therefore the project will not contribute significantly to further regional cumulative impacts, taking into account the avoidance measures completed as part of the project refinement process.

8.7 Intergenerational equity

Aboriginal heritage management is based on the principle of intergenerational equity, which has the intention to ensure present generations consider future generations when making management decisions. This principle is possibly the most relevant part of the notion of ecologically sustainable development (ESD) when considering Aboriginal cultural heritage management.

A substantial local archaeological resource will remain, considering that all sites of high significance and most sites of moderate significance[i]* will be avoided by the project. These sites represent the principle characteristics of open camp sites, stone quarries and grinding groove sites which demonstrate Aboriginal occupation of the local area.

While it is acknowledged that the project will cause impacts to Aboriginal heritage, the proposed management measures presented in Chapter 9 are anticipated to provide the local Aboriginal community with educational examples of site contents and opportunities to maintain a cultural connection with the landscape by having continued access to sites of high significance (refer Section 9.3.2) will help to achieve intergenerational equity by allowing retention of cultural materials for the enjoyment and education of future generations.

Note: To be confirmed based on the outcomes of the seven sites where impacts are currently undetermined.

9 Management measures and recommendations

9.1 Aboriginal heritage management framework

This section describes the management measures for identified Aboriginal cultural heritage values in the study area. The management measures proposed in this chapter respond to:

- the impacts identified in the preceding chapter;
- the assessed significance of the Aboriginal sites;
- the views of the Aboriginal community as represented by the RAPs;
- the need to address intergenerational equity in the values of Aboriginal heritage;
- the need to protect sites not impacted by the project but under the care of UPC; and
- the need to mitigate the loss and disturbance of impacted Aboriginal sites and Aboriginal objects.

While Aboriginal sites cannot be replaced once lost, the salvage of Aboriginal objects impacted by the project will provide a tangible monument to those sites. Furthermore, with care in curation, those salvaged materials can be better studied to help understand other Aboriginal sites present in the landscape.

Intergenerational equity is a core element in the notion of ecologically sustainable development (ESD), which commonly guides regulators in their review of Aboriginal cultural heritage management. This may be achieved by a program of avoidance and protection for the most significant sites (both scientifically and culturally) and salvage of sites with lesser scientific value but still of cultural importance to the Aboriginal community. Both of these measures allow retention of cultural materials for the enjoyment and education of future generations.

The management measures proposed in response to the impacts and Aboriginal site significance levels comprise the following:

- active protection and avoidance of Aboriginal sites close to and within the development footprint boundary in accordance with the management measures and recommendations presented as part of this report;
- passive avoidance of Aboriginal sites within the study area and project boundary but not impacted by current development plans;
- salvage collection of Aboriginal sites within disturbance areas of the development footprint; and
- procedures that specify actions to be taken in the event of discovery of human skeletal remains, discovery of Aboriginal sites and for the ongoing care of salvaged Aboriginal objects within a keeping place.

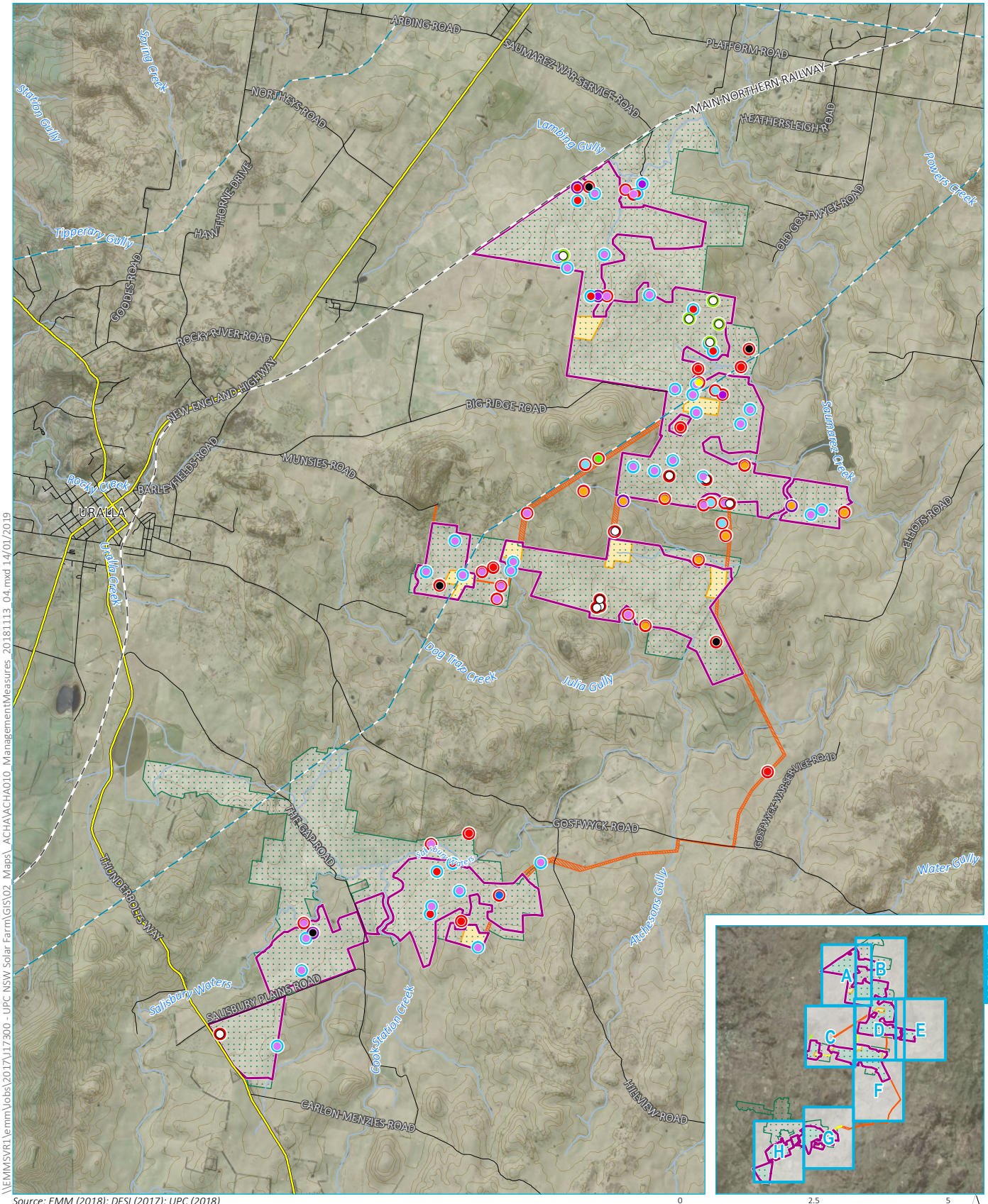
9.2 Management measures

9.2.1 Overview

The management measures to be applied to each identified site are illustrated in Figure 9.1A to 9.1H and a summary of the number of sites to be addressed by each management measure is provided in Table 9.1. A detailed summary of each site, its type, significance rating, impacts and proposed management measures is provided in Table 9.2.

Table 9.1 Site management summary

Management measure/site type	Count
Avoidance	**47**
Artefact scatter	7
Artefact scatter, PAD	7
Grinding groove	1
Grinding groove, artefact scatter, PAD	4
Grinding groove, PAD	1
Historical site - unverified	1
Isolated find	13
Isolated find, PAD	1
Quarry, artefact scatter, PAD	4
Scarred tree	8
Surface collection	**39**
Artefact scatter	8
Isolated find, PAD	1
Isolated find	30
Expert assessment/possible relocation	**5**
Scarred tree	5
Undetermined - test excavation if site cannot be avoided	**5**
Artefact scatter	1
Artefact scatter, PAD	2
Isolated find, PAD	1
Quarry, artefact scatter, PAD	1
Total	**96**



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Source: EMM (2018); DFSI (2017); UPC (2018)

0 2.5 5 km

GDA 1994 MGA Zone 56

N

KEY

- 330 kV transmission line
- Main road
- Local road
- Rail line
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/electrical cabling
- Potential substation/BESS footprint

Management measure

- Avoidance
- Expert assessment/possible relocation
- Surface collection
- Undetermined - test excavation if site cannot be avoided

Site type

- Artefact scatter
- Artefact scatter, PAD
- Grinding groove
- Grinding groove, PAD
- Grinding groove, artefact scatter, PAD
- Historical site - unverified
- Isolated find
- Isolated find, PAD
- Quarry, artefact scatter, PAD
- Scarred tree

Management measures - overview

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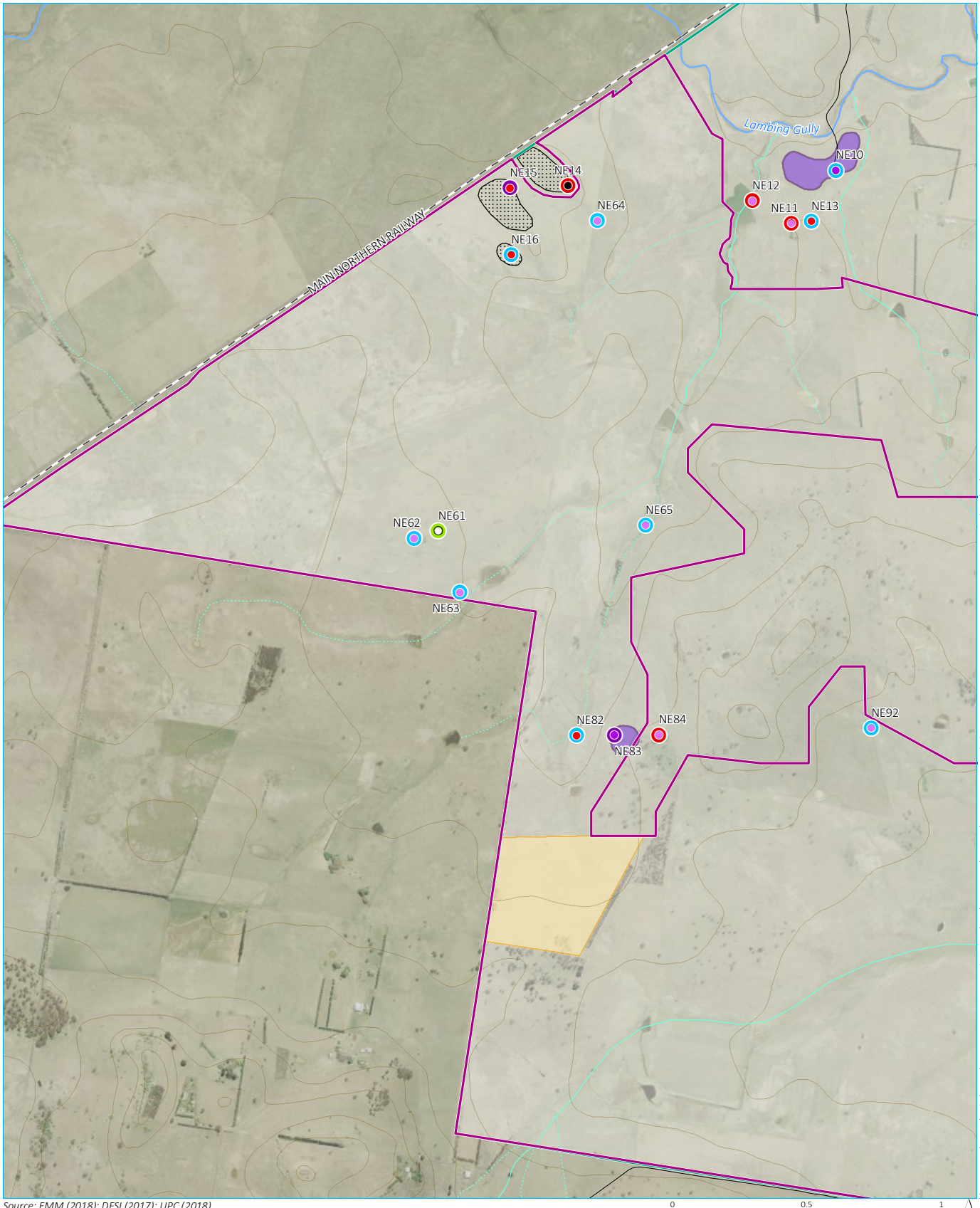
Aboriginal cultural heritage assessment
Figure 9.1

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

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KEY

- Local road
- Rail line
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential substation/BESS footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order

- PAD
- Site

Site type

- Artefact scatter
- Isolated find
- Isolated find, PAD
- Quarry, artefact scatter, PAD
- Scarred tree

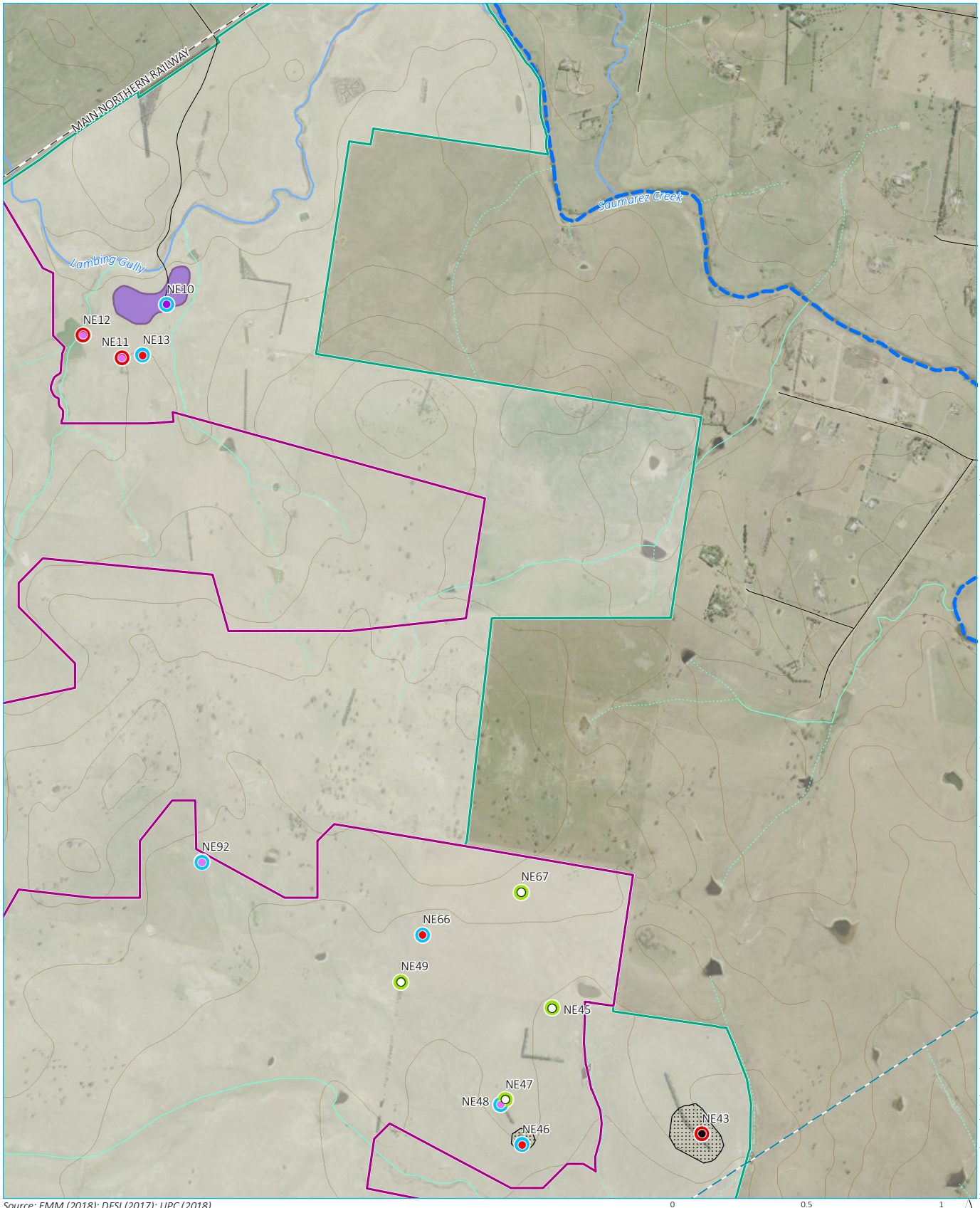
Management measure

- Avoidance
- Expert assessment/possible relocation
- Surface collection
- Undetermined - test excavation if site cannot be avoided

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1A

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

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KEY

- 330 kV transmission line
- Local road
- Rail line
- Contour (10 m)
- Study area

Development footprint

- Solar array

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 5th order

- PAD
- Site

Site type

- Artefact scatter
- Isolated find
- Isolated find, PAD
- Quarry, artefact scatter, PAD
- Scarred tree

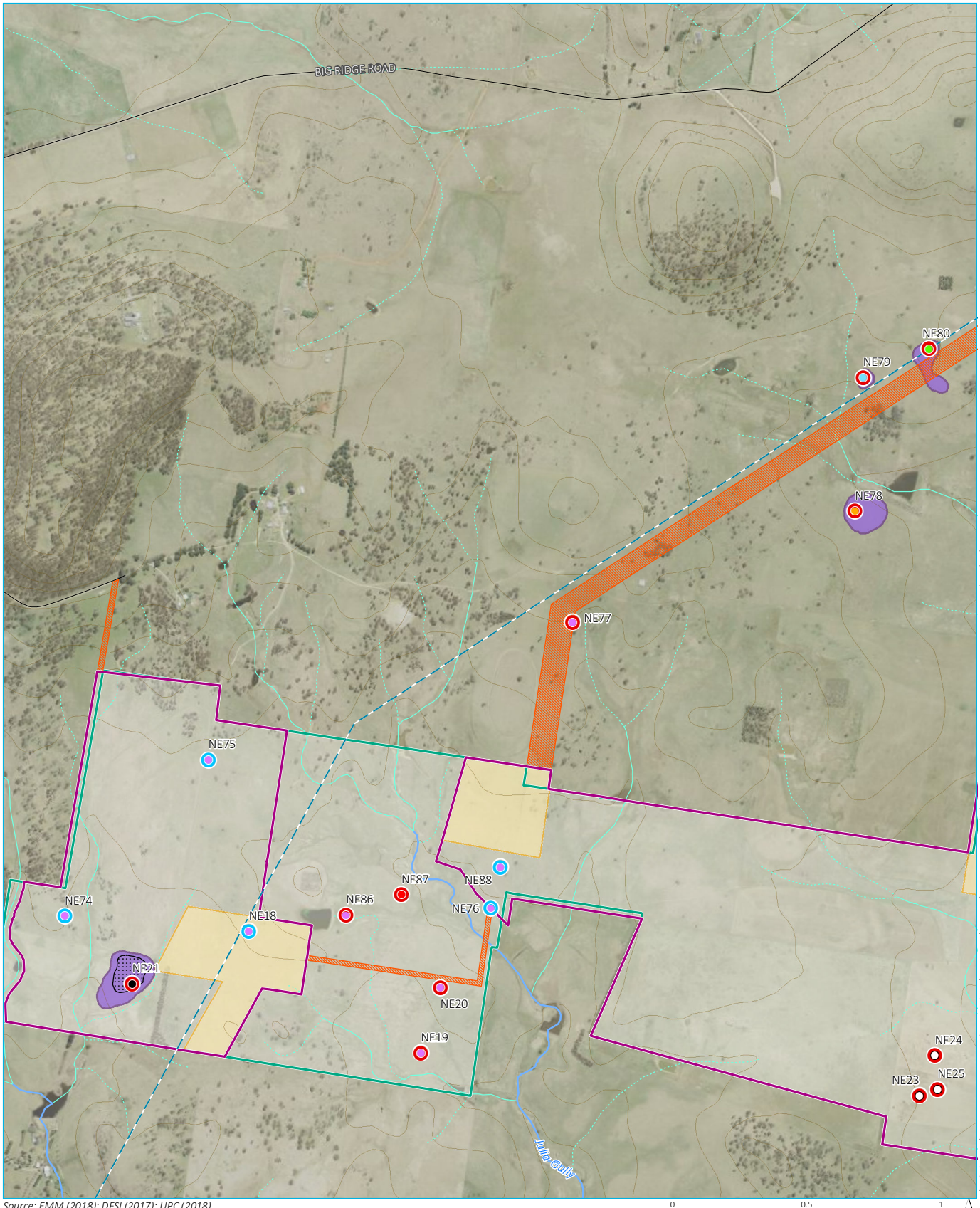
Management measure

- Avoidance
- Expert assessment/possible relocation
- Surface collection

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1B

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

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KEY

- 330 kV transmission line
- Local road
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/ electrical cabling
- Potential substation/BESS footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order

- PAD
- Site

Site type

- Artefact scatter
- Artefact scatter, PAD
- Grinding groove, PAD
- Grinding groove, artefact scatter, PAD
- Isolated find
- Quarry, artefact scatter, PAD
- Scarred tree

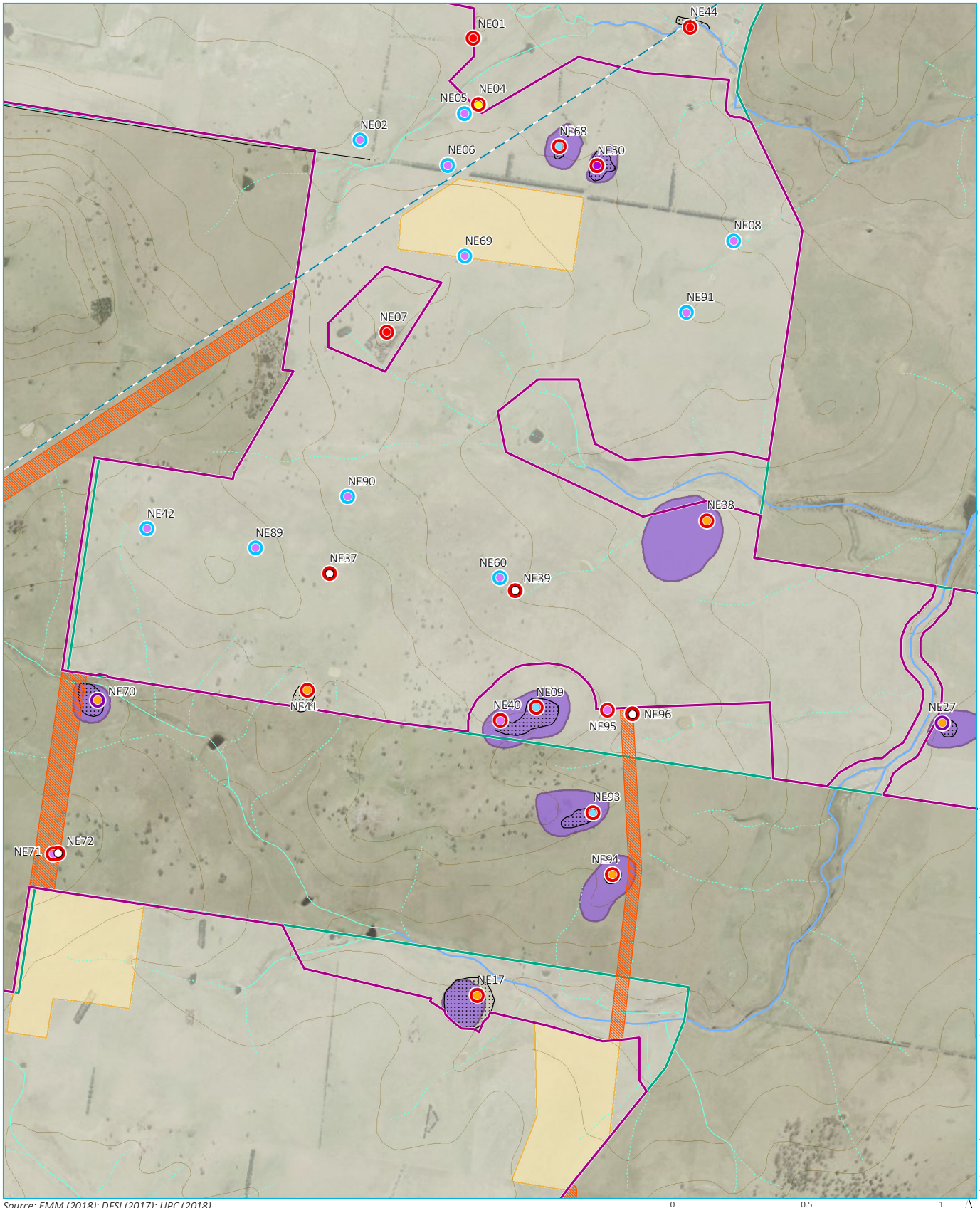
Management measure

- Avoidance
- Surface collection

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1C

EMM
creating opportunities



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KEY

- 330 kV transmission line
- Local road
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/ electrical cabling
- Potential substation/BESS footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 4th order

- PAD
- Site

Site type

- Artefact scatter
- Artefact scatter, PAD
- Grinding groove
- Grinding groove, artefact scatter, PAD
- Isolated find
- Isolated find, PAD
- Scarred tree

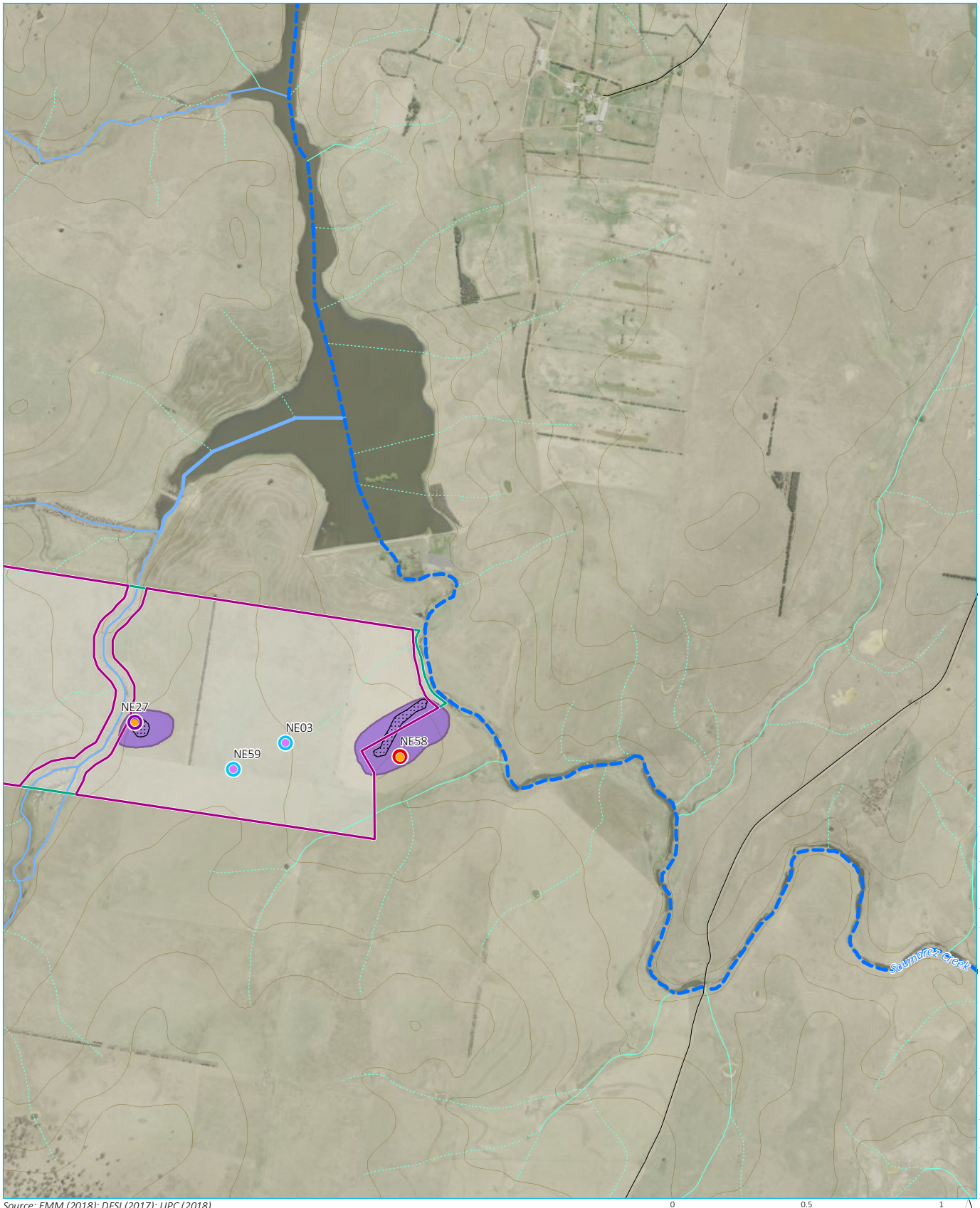
Management measure

- Avoidance
- Surface collection
- Undetermined - test excavation if site cannot be avoided

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1D

EMM
creating opportunities



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KEY

- Local road
- Contour (10 m)
- Study area

Development footprint
- Solar array

Strahler stream order
- 1st order
- 2nd order
- 3rd order
- 4th order
- 5th order

- PAD
- Site

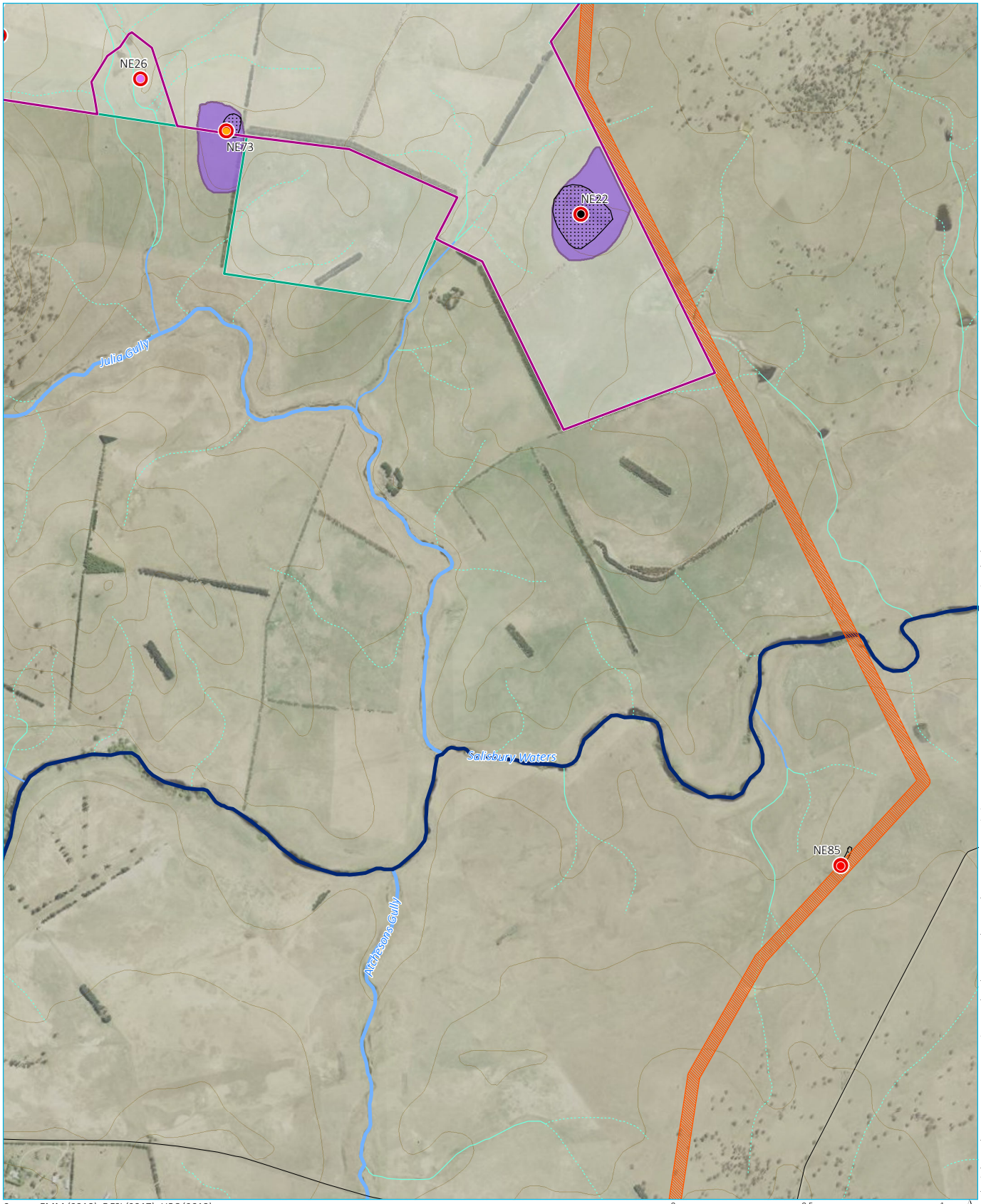
Site type
- Artefact scatter, PAD
- Isolated find

Management measure
- Avoidance
- Surface collection
- Undetermined - test excavation if site cannot be avoided

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1E

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

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KEY

- Local road
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/ electrical cabling

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 4th order
- 6th order

- PAD
- Site

Site type

- Artefact scatter
- Artefact scatter, PAD
- Isolated find
- Quarry, artefact scatter, PAD
- Scarred tree

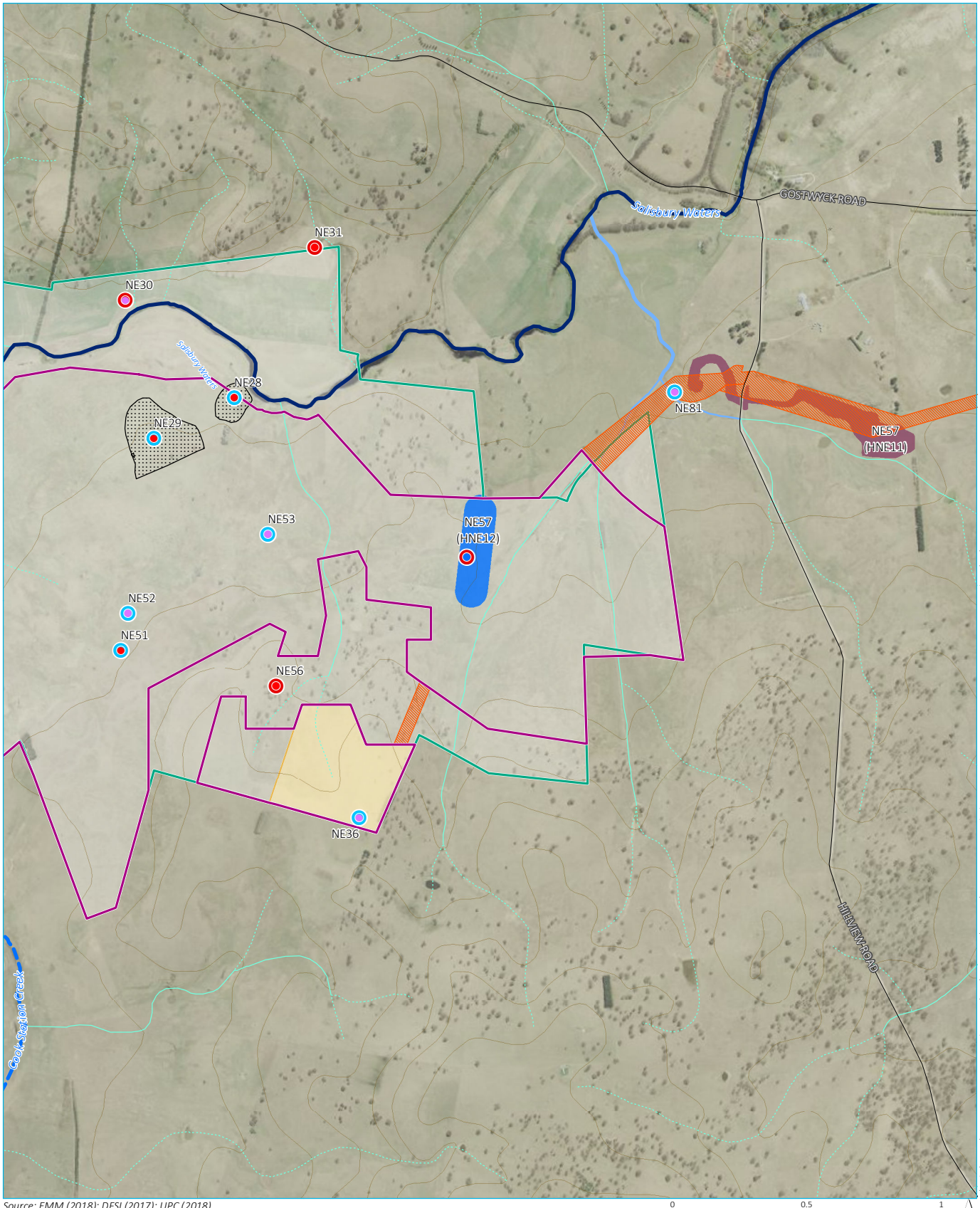
Management measure

- Avoidance

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1F

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

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KEY

- Local road
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/ electrical cabling
- Potential substation/BESS footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 4th order
- 5th order
- 6th order
- Site

Site type

- Artefact scatter
- Historical site - unverified
- Isolated find

Management measure

- Avoidance
- Surface collection

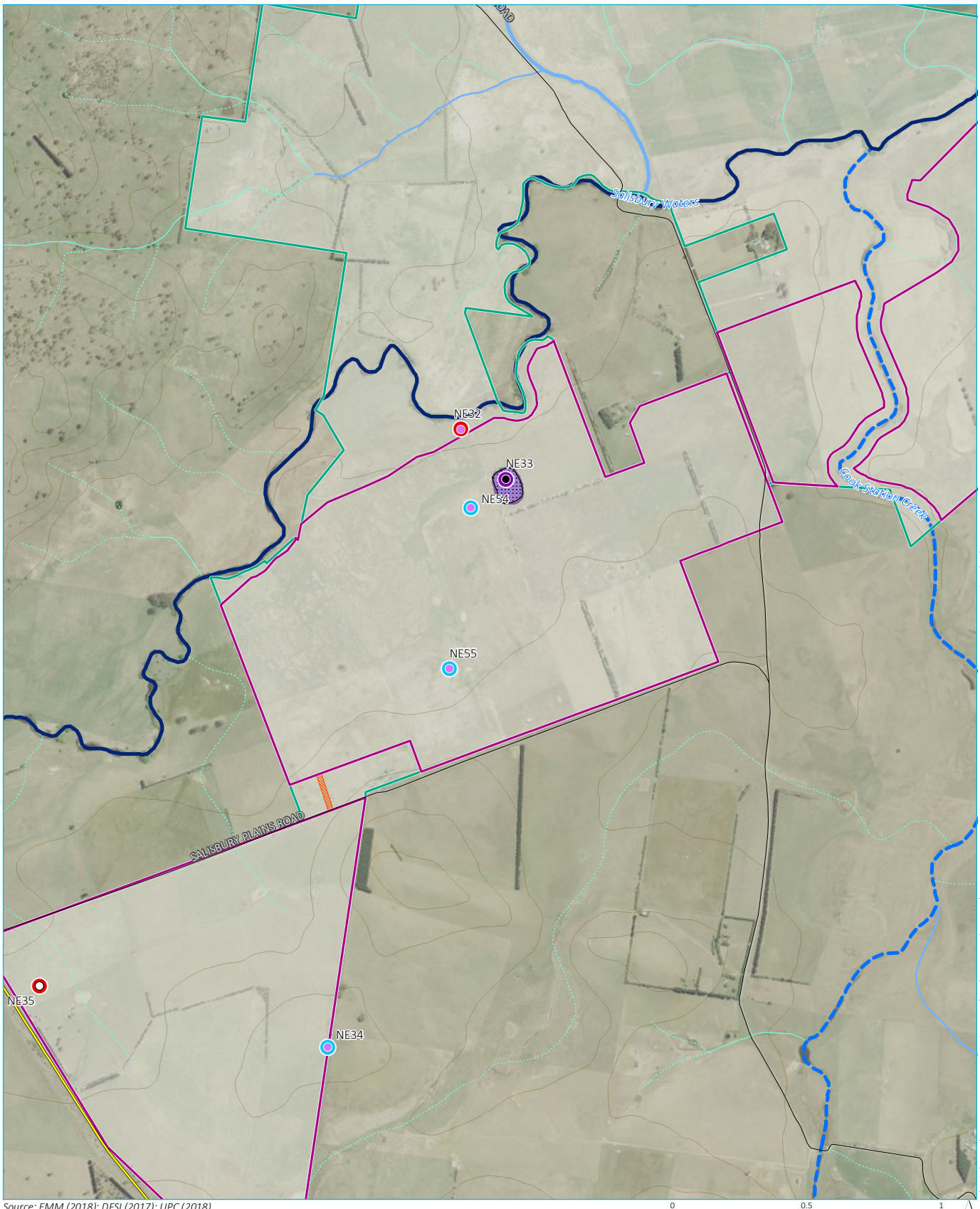
Identified in historic heritage assessment

- NE57 (HNE11)
- NE57 (HNE12)

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1G

EMM
creating opportunities



Source: EMM (2018); DFSI (2017); UPC (2018)

0 0.5 1 km

GDA 1994 MGA Zone 56

N

T:\Jobs\2017\VJ17300 - UPC NSW Solar Farm\GIS\02_Maps_ACHA\ACHA011_DetailedManagementMeasures_DDP_20181113_04.mxd 11/01/2019

KEY

- Main road
- Local road
- Contour (10 m)
- Study area

Development footprint

- Solar array
- Potential site access/ETL easement/ electrical cabling

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 4th order
- 5th order
- 6th order

- PAD
- Site

Site type

- Isolated find
- Quarry, artefact scatter, PAD
- Scarred tree

Management measure

- Avoidance
- Surface collection
- Undetermined - test excavation if site cannot be avoided

Management measures

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 9.1H

EMM
creating opportunities

9.2.2 Aboriginal heritage management plan

An Aboriginal Heritage Management Plan (AHMP) will be developed in consultation with DPE, the RAPs and OEH. It will provide details of:

- all Aboriginal sites identified during the archaeological investigation for the project;
- management measures and their progress towards completion;
- measures to ensure ongoing consultation and involvement of project RAPs;
- RAP access arrangements for a selection of significant sites for educational purposes;
- protocols for newly identified sites;
- protocols for educating staff and contractors of their obligations relating to Aboriginal cultural heritage values through a site induction process;
- protocols for suspected human skeletal materials;
- protocols for the ongoing care of salvaged Aboriginal objects within a keeping place; and
- provisions for review and updates of the AHMP.

The AHMP will be prepared after project approval, and in addition to the points above, will address all relevant conditions of approval. The AHMP will provide the details of the management measures outlined in the sections below.

9.2.3 Avoidance

Avoidance of Aboriginal sites is a preferred management option as it ensures that Aboriginal sites, and their landscape information, will be preserved for future generations.

A total of 47 sites out of 96 sites will be avoided by the project*. Generally, sites designated for avoidance within the development footprint or within 20 m of the development footprint will be avoided with protection during the construction phase of the project to avoid inadvertent impacts. This may involve the installation of treated timber poles (or similar) painted with high visibility paint around the visible extent of the sites and/or the PAD areas prior to construction. A construction buffer of at least 20 m will be applied to the demarcated boundaries of these sites. A suitably qualified archaeologist accompanied by a RAP representative will demarcate site locations and where the poles should be erected.

The exception to the general rule is protection measures for grinding groove sites NE09 and NE68 which occur either within (NE68) or nearby (NE09) the northern array area. These sites hold high cultural value and therefore warrant a greater visual buffer so that they can be appreciated in context with the natural landscape. A construction buffer of at least 100 m will be applied to the site boundaries of NE09 and NE68 (also meaning at least a 50 m buffer from the PAD boundary that extends beyond the physical site contents). The boundaries of these sites will also be demarcated prior to construction. During Stage 2 of the field survey, RAP field officers were shown the indicative buffer applied to NE09 and agreed that it was a suitable distance.

Note: To be confirmed based on the outcomes of the 10 sites where impacts are currently undetermined.

Additionally, as an outcome of the consultation meeting held on 19 October 2018, a semi-permanent or permanent boundary fence will be erected around site NE09 to protect it from livestock or other accidental damage (refer Section 2.4.2). UPC will explore opportunities to employ RAPs for vegetation, weed and pest management of NE09 after fencing is erected. The details of fencing and maintenance will be discussed as part of consultation with the RAPs during the preparation of the AHMP.

The historical dry wall site NE57 (ie HNE11 and HNE12 in the historical heritage assessment) will be avoided with a buffer to be applied to HNE11 and HNE12 to avoid impacts to any archaeological features. This is further detailed in the historical heritage assessment for the project (refer Appendix E of the EIS).

All sites identified within the ETL options surveyed as part of this ACHA will be avoided during detailed design. This will be achieved through spacing supporting structures to avoid site impacts. A buffer of at least 20 m to poles will be given to all sites near the ETL options.

Sites that occur over 20 m from the development footprint will be passively avoided without protection, apart from site NE09, which will be buffered by at least 100 m and avoided with protection (refer above).

If there are sites designated in this report for collection that are later determined not to be impacted, but are within 20 m of the development footprint, such sites will be avoided and managed in a method consistent with this section of the report.

9.2.4 Collection

All surface artefact sites (artefact scatters and isolated finds) impacted by the project will be collected. This will involve collecting the entire visible contents of 30 isolated artefacts and seven artefact scatters.

Additionally, based on the outcomes of RAP consultation during the Aboriginal consultation meeting, the surface artefacts of two sites (NE10 and NE13) will also be collected despite not being within the development footprint. These sites are currently on existing farm access tracks outside the development footprint but within the project boundary. Landowners are aware of their existence and are avoiding the sites; however, during consultation, RAPs noted that they would prefer it if their surface contents are collected to ensure the artefacts are not lost. RAPs noted that they would prefer it if these artefacts were displayed at the nominated keeping place given that they currently have very low contextual integrity. Further information is provided in Table 2.2 (refer to Topic 7).

The collection will be undertaken by qualified archaeologists and RAP representatives. The collection method will be as follows:

1. Site coordinates and area polygons for each site will be entered into mobile GPS devices to re-locate and confirm the location.

2. The general vicinity of each site location will be inspected by the field team. Stone artefacts will be flagged on the ground and a photo taken of the flagged site. Each flagged artefact will be marked as a waypoint in the GPS.

3. All artefacts will be collected into snap lock plastic bags or similar marked with the project name, site name, collection date and waypoint number.

4. All artefacts will be sorted and recorded post-fieldwork with respect to technological type, implement type, raw material, maximum block length and weight.

5. The collected artefacts will be incorporated into a salvage report detailing the results of the fieldwork, the artefacts recovered at each site and GIS figures showing the artefact locations.

9.3 Special procedures

9.3.1 Aboriginal keeping place

A keeping place is a designated long-term secure area for the purpose of storing and curating Aboriginal cultural materials and their associated documentation.

The recovered Aboriginal objects will be temporarily stored at a designated location during cataloguing and analysis. At the completion of cataloguing and analysis, the recovered objects will be transferred to a long-term facility.

RAPs have nominated that the recovered objects be kept at the Armidale and Region Aboriginal Cultural Centre and Keeping Place (96-104 Kentucky Street, Armidale NSW). During the Aboriginal consultation meeting on 19 October 2018, it was also noted that McCrossins Mill Museum and the Uralla Visitor Information Centre may also be appropriate places for some of the collection. Separate to the meeting, Cheryl and Rhonda Kitchener requested that any additional collected objects not placed on display should be reburied on Country in a safe location.

UPC are committed to working with the RAPs to accommodate the requests for storage and curation of collected objects. It is noted that the final locations for specific objects and details of curation, storage, display and interpretation of recovered objects will be developed and resolved during consultation with the RAPs as part of the preparation of the AHMP. The transfer of objects to the keeping place will require an application for a care agreement to be lodged with OEH. The AHMP will also describe the ongoing management of the objects within the two potential keeping places that have been identified.

The web map provided during the draft ACHA phase may also be provided on an ongoing basis as an educational tool, possibly to be used at the designated keeping place in Armidale in conjunction with the collected objects. Subject to project approval, UPC will host the web map for an ongoing period, the duration of which will be determined during consultation with the RAPs as part of the development of the AHMP.

9.3.2 RAP site access arrangements

During the consultation process, RAPs raised that it is of high importance to maintain a cultural connection to the landscape where a number of significant sites have been identified. As such, EMM, UPC and RAPs have discussed options around access arrangements to significant sites as an education tool. This would help achieve intergenerational equity by providing education and enjoyment to current and future generations.

As the project and development footprint will be an operating solar farm (PV electricity generation facility) with strict access and safety requirements, it would not be viable to allow open and unrestricted access to sites within proximity of the three array areas. Furthermore, landholder access approval would be required to access any areas outside of the development footprint since the project is on privately-owned land.

In consultation with the relevant project landholders, UPC has explored the potential for scheduled RAP access to grinding groove sites, including NE09 and NE68 as an educational tool for the Aboriginal community.

This topic was further resolved during a consultation meeting with the RAPs on 19 October 2018 (refer Section 2.4.2). The following outcomes were agreed to by UPC and the RAPs (subject to project approval):

- UPC will work with the O&M contractors to provide RAPs with scheduled access to site NE09 once project construction activities are completed. Site visits will be primarily for educational purposes. Site access will be subject to strict notification, scheduling of on-site activities and WHS procedures.

- UPC will also work with the O&M contractors to provide RAPs with scheduled access to another grinding groove site (NE68) for educational purposes once project construction activities are completed. Access to this site will also be subject to strict notification, scheduling and WHS procedures.

- The details of site access for NE09 and NE68 will be developed during consultation with the RAPs as part of the development of the AHMP.

9.3.3 Aboriginal ancestral remains

It is important that all personnel working on the project during construction be briefed on the possibility and the appropriate protocols to follow if human remains are found, as well as, what to do if other Aboriginal cultural material is encountered.

In the event that known or suspected human remains are encountered during the project's construction, the following procedure will be followed as soon as the suspected remains are discovered:

- all work in the immediate vicinity will cease and the find will be reported to the work supervisor who will advise the site supervisor or other nominated senior staff member;

- the site supervisor or other nominated senior staff member will promptly notify the police and the State coroner (as required for all human remains discoveries);

- the site supervisor or other nominated senior staff member will contact OEH for advice on identification and management of Aboriginal skeletal material; and

- if it is determined that the skeletal material is of Aboriginal ancestry, the RAPs will be contacted and consultative arrangements will be made to discuss ongoing care or reinterment of the remains.

9.3.4 Discovery of new Aboriginal sites

i Procedure

In the event of discovery of new Aboriginal sites within the development footprint, the following procedure will be followed:

- the immediate vicinity (an approximate 20 m buffer from the visible extent of the site) will be secured to protect the find and the find will be reported to the work supervisor who will immediately advise the environmental manager or other nominated senior staff member;

- an archaeologist and select RAPs must be contacted by the site supervisor or other nominated senior staff member at the earliest possible opportunity to validate the find and determine the significance of the objects(s); and

- any new sites must be registered in the AHIMS database.

ii Management of new Aboriginal sites

Newly identified sites that are not at risk of impact (ie over 20 m from the approved development footprint) will be avoided through passive protection. Sites that are within 20 m of the approved development footprint will be managed through active protection measures including fencing and signage as outlined in Section 9.2.3.

In the event that newly identified sites will be impacted by the construction of the project and cannot be avoided, they will be managed in a manner commensurate with their assessed significance, consistent with the management measures provided for similar sites in this chapter, meaning:

- Stone artefact sites of low or moderate significance may be collected prior to ground disturbance or be subject to unmitigated impacts, based on the outcomes of consultation with the RAPs.
- Decisions about stone artefact sites of high significance will require further consultation with the RAPs and OEH to determine an appropriate conservation or salvage methodology.
- Although other Aboriginal site types are unlikely to occur in the development footprint (eg burials or stone arrangements), the following steps will be followed if they are identified:
  - a suitably qualified archaeologist will be contacted to verify and assess the evidence;
  - if the find is not an Aboriginal object then the works can continue without further investigation; and
  - if the find is verified as being an Aboriginal object, the RAPs and OEH will be contacted to discuss appropriate management measures proportionate to the significance of the find.

9.4 Additional assessment

9.4.1 Aboriginal modified tree assessment and management

i Expert assessment and management

Eight of the 13 identified scarred trees will be avoided without further assessment or investigation. However, there are five scar trees, two of moderate significance (NE45 and NE61) and three of low significance (NE49, NE47 and NE67), that occur within the development footprint and pose a considerable constraint to the placement of continuous rows or blocks of PV modules. Due to the common ambiguity between natural scars and scars of Aboriginal origin, and following consultation with the RAPs at the second meeting on 9 October 2018, UPC proposes to seek expert assessment of these sites to determine appropriate management measures. The proposed outcomes are as follows:

- If assessment from a suitably qualified expert in scar tree assessment (arborist or other) determines that any of the five scars are not of Aboriginal origin, then such trees will be removed as part of the project without further constraints on the project.
- If assessment from a suitably qualified expert in scar tree assessment determines that any of the five scars are of Aboriginal origin, UPC will first seek to avoid such trees in accordance with the measures established in Section 9.2.3. If any trees cannot be avoided because of the high level of constraint they would pose on the project, then UPC will consult with RAPs to determine the suitability of scar tree removal, relocation and preservation.

This may involve moving the tree to an area not designated for impacts within the development footprint, or to the proposed keeping place discussed in Section 9.3.1. EMM notes that avoidance and protection of scar trees is the most appropriate measure and that approval for the removal of scarred trees is subject to support by RAPs, OEH and DPE. The details of any scar tree removal and relocation measures will be detailed in the AHMP.

Expert assessment and the subsequent provision of management measures will be completed during either public exhibition or the preparation of the response to submissions (RTS) report. The results of the assessment, proposed management measures, and evidence of RAP and OEH consultation will be provided prior to or as part of the RTS report to ensure DPE can consider any new information prior to project approval.

ii Additional tree survey requirements

As noted in the survey limitations section of this report (Section 6.2.5), it is unlikely that every mature native tree was inspected during the archaeological survey. As such, there remains some potential for this site type to occur within the development footprint.

Further survey is required to identify any scarred trees not identified as part of the archaeological survey effort to date and to assess project impacts and propose suitable management measures. This is important as Aboriginal scarred trees are rare, have high value to the Aboriginal community and therefore warrant conservation or appropriate management. This survey was unable to be completed during the preparation of this report due to timing of submission of the EIS. As such, the following process will be completed:

- all mature trees not already inspected in the development footprint during the archaeological survey will be inspected by a qualified archaeologist accompanied by a RAP field officer;
- any new scarred or carved trees identified will be recorded and assessed with reference to the findings of this report; and
- the priority will be to avoid any newly identified scarred or carved trees. If the project cannot avoid any newly identified sites and/or there is ambiguity between natural scars and scars of Aboriginal origin, then UPC will follow the procedure listed above to determine the most appropriate management strategy (refer Section 9.4.1 (i)).

This task will be completed during either public exhibition or the preparation of the RTS report. The results of the assessment, proposed management measures, and evidence of RAP and OEH consultation will be provided prior to or as part of the RTS report to ensure DPE can consider any new information prior to project approval.

9.4.2 Undetermined impacts to sites with PAD

There are parts of the development footprint where the exact nature and extent of project ground disturbance is not currently determined. For example, where an area is considered to be suitable for PV module installation at this stage, but the exact location of infrastructure placement is subject to further detailed design considerations by UPC and its contractors. This work is unlikely to have been completed prior to the conclusion of the public exhibition of the EIS. UPC is seeking as much flexibility as possible to complete the detailed design work and construct the project within the development footprint.

There are five sites where impacts are currently undetermined that would warrant test excavation. This comprises four stone artefact sites (NE15, NE27, NE70 and NE83) and one quarry site (NE33). If UPC want to explore opportunities to develop all or parts of any of these sites, then test excavation would be required to characterise the archaeological deposit and contribute to updated significance assessments and appropriate management measures. Based on the outcomes of the test excavation and significance of the finds, management options may include conservation, salvage excavation or unmitigated impacts.

To explore opportunities to maximise the development footprint, a test excavation program will be completed during either public exhibition of the EIS or preparation of the RTS report. The scope of test excavation and the selection of sites listed above for sampling (NE15, NE27, NE70, NE83 and NE33) will be determined in consultation with the RAPs and OEH. The results of excavation and subsequent management measures derived from the results will be formulated in consultation with RAPs and will be provided prior to or as part of the RTS report so that DPE and OEH can consider any new information prior to project approval.

9.5 Management summary

Table 9.2 provides a summary of all Aboriginal sites, significance ratings, impact types and management recommendations presented as part of this report.

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE01	TBC	Artefact scatter	Low	Northern	None	None	20 m	Avoidance
NE02	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE03	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE04	TBC	Grinding groove	Moderate	Northern	None	None	20 m	Avoidance
NE05	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE06	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE07	TBC	Artefact scatter	Moderate	Northern	None	None	20 m	Avoidance
NE08	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE09	TBC	Grinding groove, artefact scatter, PAD	High	Northern	None	None	100 m	Avoidance
NE10	TBC	Isolated find, PAD	Moderate	Northern	Other	Other	N/A*	Surface collection of isolated find - refer Section 9.2.4 for rationale
NE11	TBC	Isolated find	Low	Northern	None	None	20 m	Avoidance
NE12	TBC	Isolated find	Low	Northern	None	None	20 m	Avoidance
NE13	TBC	Artefact scatter	Low	Northern	Other	Other	N/A	Surface collection - refer Section 9.2.4 for rationale
NE14	TBC	Quarry, artefact scatter, PAD	Moderate	Northern	None	None	20 m	Avoidance
NE15	TBC	Artefact scatter	Moderate	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Undetermined - test excavation if site cannot be avoided.
NE16	TBC	Artefact scatter	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE17	TBC	Artefact scatter, PAD	Moderate	Central	None	None	20 m	Avoidance
NE18	TBC	Isolated find	Low	Central –Potential substation/BESS footprint	Total loss	Substation/BESS footprint	N/A	Surface collection
NE19	TBC	Isolated find	Low	Central	None	None	20 m	Avoidance
NE20	TBC	Isolated find	Low	Central	None	None	20 m	Avoidance

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE21	TBC	Quarry, artefact scatter, PAD	Moderate	Central	None	None	20 m	Avoidance
NE22	TBC	Quarry, artefact scatter, PAD	Moderate	Central	None	None	20 m	Avoidance
NE23	TBC	Scarred tree	Moderate	Central	None	None	20 m	Avoidance
NE24	TBC	Scarred tree	Moderate	Central	None	None	20 m	Avoidance
NE25	TBC	Scarred tree	Low	Central	None	None	20 m	Avoidance
NE26	TBC	Isolated find	Low	Central	None	None	20 m	Avoidance
NE27	TBC	Artefact scatter, PAD	Moderate	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Undetermined - test excavation if site cannot be avoided.
NE28	TBC	Artefact scatter	Low	Southern	Partial disturbance	Array impact	N/A	Surface collection
NE29	TBC	Artefact scatter	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE30	TBC	Isolated find	Low	Southern	None	None	20 m	Avoidance
NE31	TBC	Artefact scatter	Low	Southern	None	None	20 m	Avoidance
NE32	TBC	Isolated find	Low	Southern	None	None	20 m	Avoidance
NE33	TBC	Quarry, artefact scatter, PAD	Moderate	Southern	Undetermined	Undetermined - potential array impact	Undetermined	Undetermined - test excavation if site cannot be avoided.
NE34	TBC	Isolated find	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE35	TBC	Scarred tree	Moderate	Southern	None	None	20 m	Avoidance
NE36	TBC	Isolated find	Low	Southern – Potential substation/BESS footprint	Total loss	Substation/BESS footprint	N/A	Surface collection
NE37	TBC	Scarred tree	Moderate	Central	None	None	20 m	Avoidance
NE38	TBC	Artefact scatter, PAD	Moderate	Northern	None	None	20 m	Avoidance
NE39	TBC	Scarred tree	Moderate	Northern	None	None	20 m	Avoidance
NE40	TBC	Isolated find	Moderate	Northern	None	None	20 m	Avoidance
NE41	TBC	Artefact scatter, PAD	Moderate	Northern	None	None	20 m	Avoidance

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE42	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE43	TBC	Quarry, artefact scatter, PAD	Moderate	Northern	None	None	20 m	Avoidance
NE44	TBC	Artefact scatter	Moderate	Northern	None	None	20 m	Avoidance
NE45	TBC	Scarred tree	Moderate	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Expert assessment/possible relocation
NE46	TBC	Artefact scatter	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE47	TBC	Scarred tree	Low	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Expert assessment/possible relocation
NE48	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE49	TBC	Scarred tree	Low	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Expert assessment/possible relocation
NE50	TBC	Isolated find, PAD	Moderate	Northern	None	None	20 m	Avoidance
NE51	TBC	Artefact scatter	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE52	TBC	Isolated find	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE53	TBC	Isolated find	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE54	TBC	Isolated find	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE55	TBC	Isolated find	Low	Southern	Total disturbance	Array impact	N/A	Surface collection
NE56	TBC	Artefact scatter	Low	Southern	None	None	20 m	Avoidance
NE57 – Historical site	N/A	Historical site stone wall (HNE11 and HNE12 – refer to Appendix E of EIS)	Undetermined	Southern	None	None	Refer to Appendix E of EIS	Avoidance
NE_58	TBC	Artefact scatter, PAD	Moderate	Northern	None	None	20 m	Avoidance
NE_59	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_60	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE_61	TBC	Scarred tree	Moderate	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Expert assessment/possible relocation
NE_62	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_63	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_64	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_65	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_66	TBC	Artefact scatter	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_67	TBC	Scarred tree	Low	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Expert assessment/possible relocation
NE_68	TBC	Grinding groove, artefact scatter, PAD	High	Northern	None	None	100 m	Avoidance
NE_69	TBC	Isolated find	Low	Northern – Potential substation/BESS footprint	Total loss	Substation/BESS footprint	N/A	Surface collection
NE_70	TBC	Artefact scatter, PAD	Moderate	ETL/site access - central to northern array	Undetermined	Undetermined - potential site access track impact	Undetermined	Undetermined - test excavation if site cannot be avoided.
NE_71	TBC	Isolated find	Low	ETL/site access - central to northern array	None	None	20 m	Avoidance
NE_72	TBC	Scarred tree	Low	ETL/site access - central to northern array	None	None	20 m	Avoidance
NE_73	TBC	Artefact scatter, PAD	Moderate	Central	None	None	20 m	Avoidance
NE_74	TBC	Isolated find	Low	Central	Total disturbance	Array impact	N/A	Surface collection
NE_75	TBC	Isolated find	Low	Central	Total disturbance	Array impact	N/A	Surface collection

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE_76	TBC	Isolated find	Low	Central	Total disturbance	Array impact	N/A	Surface collection
NE_77	TBC	Isolated find	Low	ETL - central to northern array	None	None	20 m	Avoidance
NE_78	TBC	Artefact scatter, PAD	Moderate	N/A	None	None	20 m	Avoidance
NE_79	TBC	Grinding groove, artefact scatter, PAD	High	ETL - central to northern array	None	None	20 m	Avoidance
NE_80	TBC	Grinding groove, PAD	High	ETL - central to northern array	None	None	20 m	Avoidance
NE_81	TBC	Isolated find	Low	Southern – Potential substation/BESS footprint	Total loss	Site access track	N/A	Surface collection
NE_82	TBC	Artefact scatter	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_83	TBC	Isolated find, PAD	Moderate	Northern	Undetermined	Undetermined - potential array impact	Undetermined	Undetermined - test excavation if site cannot be avoided.
NE_84	TBC	Isolated find	Low	Northern	None	None	20 m	Avoidance
NE_85	TBC	Artefact scatter	Low	ETL - south to central array	None	None	20 m	Avoidance
NE_86	TBC	Isolated find	Low	ETL –central array	None	None	20 m	Avoidance
NE_87	TBC	Artefact scatter	Low	ETL –central array	None	None	20 m	Avoidance
NE_88	TBC	Isolated find	Low	Central	Total disturbance	Array impact	N/A	Surface collection
NE_89	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_90	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_91	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_92	TBC	Isolated find	Low	Northern	Total disturbance	Array impact	N/A	Surface collection
NE_93	TBC	Grinding groove, artefact scatter, PAD	Moderate	ETL – central to northern array	None	None	20 m	Avoidance

Table 9.2 Site significance, impact and management summary

Site name	AHIMS#	Revised site type	Significance rating	Array area or project component	Level of impact	Impact type	Minimum buffer required (m)	Overall management strategy
NE_94	TBC	Artefact scatter, PAD	Moderate	ETL – central to northern array	None	None	20 m	Avoidance
NE_95	TBC	Isolated find	Low	ETL – central to northern array	None	None	N/A	Avoidance
NE_96	TBC	Scarred tree	Moderate	ETL – central to northern array	None	None	20 m	Avoidance

**Note: This site is approximately 400 m from the development footprint. As such, a minimum buffer distance is not required.*

References

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Appendix A

Aboriginal consultation documentation

A.1 Consultation log and communications record

Aboriginal Consultation Log: New England Solar Farm Consultation log	Contact type	Date	Comment
Stage 1 - Advisory Requests Sent			
Organisation	**Contact type**	**Date Sent**	**Comment**
Office of Environment and Heritage North East Branch	Express mail and email	06-Apr-18	Reminder sent 19/04/2018; response received 19/04/2018
the Registrar, Aboriginal Land Rights Act 1983	Express mail and email	06-Apr-18	Response received 9/04/2018
Native Title Tribunal	Express mail and email	06-Apr-18	Response received 6/04/2018 - Gomeroi People native title claimants are over 8 km west of the project area.
Native Title Services Corporation (NTSCORP)	Express mail and email	06-Apr-18	Reminder sent 19/04/2018 - no response
Northern Tablelands Local Land Services (Catchment Management Authority)	Express mail and email	06-Apr-18	Reminder sent 19/04/2018; response received 19/04/2018
Uralla Shire Council	Express mail and email	06-Apr-18	Reminder sent 19/04/2018 - reponse see comms records
Armidale Local Aboriginal Land Council	Express mail and email	06-Apr-18	Reminder sent 19/04/2018 - reponse see comms records
Newspaper Ad: Armidale Express	Email and phone	06-Apr-18	Paid to run in paper for 13 April 2018
Aboriginal Group Notifications Sent			
Organisation	**Contact type**	**Date**	**Comments**
Mr Craig Archibald	**Letter Express**	**23-Apr-18**	
Aaron Broad	**Letter Express and email**	**23-Apr-18**	
Armidale Local Aboriginal Land Council	**Letter Express and email**	**23-Apr-18**	
Mr Dominic Beckett	**Telephone (no address provided)**	**23-Apr-18**	**Waiting to receive postal information as only phone number was provided.**
Aboriginal Group Registrations & Communications			
Organisation	**Contact type**	**Date**	**Comments**
Nunawanna Aboriginal Corporation (NAC)	Email	16-Apr-18	Colin Ahoy contacted EMM from media advertisemnt
Armidale Local Aboriginal Land Council	Phone	24-Apr-18	EMM contacted ALALC - registered over the phone.
Armidale and New England Gumbaynggirr Descendents	email	26-Apr-18	Contacted from media advertisement - contact Hazel Green represented by Bruce Cohen
Aaron Broad	Phone and email	02-May-18	OEH listed
Les Townsend	Phone	03-May-18	Identified through local knowledge holders and Council website - registered over the phone.
Steven Ahoy	Email	06-May-18	Identfied by Armidale LALC
Culturally Aware	Email	07-May-18	Via Dominic Beckett (advised by ALRA) - represented by Cheryl Kitchener
Nyakka Aboriginal Culture Heritage Corporation	Email	07-May-18	Via Dominic Beckett (advised by ALRA) - represented by Rhonda Kitchener
Nganyawana Clan Group	Email	14-May-18	Les Ahoy contacted EMM
OEH & LALC notified of Registered Stakeholders			
Organisation	**Contact type**	**Date**	**Comments**
OEH	**Email**	**08-May-18**	
Armidale LALC	**Email**	**08-May-18**	
Stages 2&3 - Project Presentation & Methodology Advice Sent			
Organisation	**Contact type**	**Date Sent**	**Comments**
Nunawanna Aboriginal Corporation (NAC)	Email and Letter	04-May-18	No comments received
Armidale Local Aboriginal Land Council	Email and Letter	04-May-18	No comments received
Armidale and New England Gumbaynggirr Descendents	Email and Letter	04-May-18	No comments received
Aaron Broad	Email and letter	04-May-18	No comments received
Les Townsend	Express post	04-May-18	No comments received
Steven Ahoy	Email	07-May-18	Steve provided this response via email on 07/07/2018: "As we are Anaiwan Traditional Owners our members have extensive Cultural knowledge of sites in that area, such as: Occupational sites and a Ancient travelling route, we advise that there is a potential for Artefacts to be found."
Culturally Aware	Email	07-May-18	No comments received
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Email	07-May-18	No comments received
Nganyawana Clan Group	Email	14-May-18	No comments received
Stages 2&3 - Fieldwork and meeting invite letter stage 1 survey			
Organisation	Contact type	Date Rec'd	Comments
Nunawanna Aboriginal Corporation (NAC)	Email	09-May-18	
Armidale Local Aboriginal Land Council	Email	09-May-18	
Armidale and New England Gumbaynggirr Descendents	Email	09-May-18	
Aaron Broad	Email	09-May-18	
Les Townsend	Letter	10-May-18	
Steven Ahoy	Email	09-May-18	
Culturally Aware	Email	09-May-18	
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Email	09-May-18	
Nganyawana Clan Group	Email	09-May-18	
Stages 2&3 - Aboriginal consultation meeting 1: presentation of information and methods - 21 May 2018			
Organisation	Attendees	Date	Comments
Nunawanna Aboriginal Corporation (NAC)	Colin Ahoy Senior and Colin Ahoy Junior	21-May-18	
Armidale Local Aboriginal Land Council	N/A		
Armidale and New England Gumbaynggirr Descendents	Bruce Cohen	21-May-18	

Aaron Broad	N/A		
Les Townsend	N/A - Apologies given		
Steven Ahoy Consultants	Steven Ahoy	21-May-18	
Culturally Aware	N/A - Apologies given		
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Rhonda Kitchener	21-May-18	
Nganyawana Clan Group	Les Ahoy	21-May-18	
Stages 2&3 - Fieldwork invite letter stage 2 survey			
Organisation	Contact type	Date Rec'd	Comments
Nunawanna Aboriginal Corporation (NAC)	Email	18-Jul-18	
Armidale Local Aboriginal Land Council	Email	18-Jul-18	
Armidale and New England Gumbaynggirr Descendents	Email	18-Jul-18	
Aaron Broad	Email	18-Jul-18	
Les Townsend	Phone call	18-Jul-18	
Steven Ahoy	Email	18-Jul-18	
Culturally Aware	Email	18-Jul-18	
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Emai	18-Jul-18	
Nganyawana Clan Group	Email	18-Jul-18	
Stage 4 - Issue of draft ACHA report to RAPs (28 Sept to 26 Oct)			
Organisation	**Contact type**	**Date Sent**	**Comments**
Nunawanna Aboriginal Corporation (NAC)	Email	28-Sep-18	Review period ends 26 Oct 2018
Armidale Local Aboriginal Land Council	Email	28-Sep-18	
Armidale and New England Gumbaynggirr Descendents	Email	28-Sep-18	
Aaron Broad	Email	28-Sep-18	
Les Townsend	Letter - express post	28-Sep-18	
Steven Ahoy	Email	28-Sep-18	
Culturally Aware	Email	28-Sep-18	
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Email	28-Sep-18	
Nganyawana Clan Group	Email	28-Sep-18	
Stage 4 - Invite to attend Aboriginal consultation meeting			
Organisation	**Contact type**	**Date Sent**	**Comments**
Nunawanna Aboriginal Corporation (NAC)	Email	09-Oct-18	
Armidale Local Aboriginal Land Council	Email	09-Oct-18	
Armidale and New England Gumbaynggirr Descendents	Email	09-Oct-18	
Aaron Broad	Email	09-Oct-18	
Les Townsend	Phone call	09-Oct-18	
Steven Ahoy	Email	09-Oct-18	
Culturally Aware	Email	09-Oct-18	
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Email	09-Oct-18	
Nganyawana Clan Group	Email	09-Oct-18	
Stage 4 - Aboriginal consultation meeting 2: draft ACHA review and discussion of management measures - 19 October 2018			
Organisation	**Attendees**	**Attendance date**	**Comments**
Nunawanna Aboriginal Corporation (NAC)	Colin Ahoy Senior and Colin Ahoy Junior	19-Oct-18	Refer to meeting minutes
Armidale Local Aboriginal Land Council	N/A		Refer to meeting minutes
Armidale and New England Gumbaynggirr Descendents	Bruce Cohen		Refer to meeting minutes

Communications Record					
Date	**Organisation**	**Contact**	**EMM person**	**Topic**	**Details**
23/04/2018	Dominic Bennet	Dominic	Ryan	Registration	Ryan called Dominic and left message about the proposed solar farm and whether Dominic would like to register for consultation.
24/04/2018	Armidale LALC	Tom Briggs	Ryan	Registration	Armidale LALC advised that they would register for the project and notify other relevant people. Ryan stated that they must contact us and register by 7 May to keep the project moving forward.
1/05/2018	OEH Regional Operations	Roger Mehr	Ryan	Consultation, initial contact and presentation of methods	Ryan called Roger Mehr (Archaeologist OEH) to initiate consultation for the project. It was agreed that EMM would send OEH the presentation of project information and proposed methods for their feedback. The aim was to provide OEH with an overview of the project, existing environment, archaeological background and proposed survey and assessment methods.
1/05/2018	Dominic Bennet	Dominic	Ryan	Registration	Ryan called Dominic as he had been identified by the ALRA Registrar as potentially knowing organisations that would wish to register their interest in the project. Dominic informed that he would provide the EMM "invitation to register" document to relevant parties. Ryan explained that EMM would require registrations by 7 May 2018.
2/05/2018	Craig Archibold	Craig	Ryan	Registration	Ryan called Craig's mobile number re: consultation but had no answer. Ryan left a message request Craig to call back.
2/05/2018	Aaron Broad	Aaron	Ryan	Registration	Aaron stated that he would like to be involved in the project and be consulted. Ryan requested for him to provide an email response stating his interest.
3/05/2018	Craig Archibold	Craig	Ryan	Registration	Ryan called Craig's mobile number re: consultation but had no answer. Ryan left a message request Craig to call back.
4/05/2018	All RAPs registered as of 04/05/2018	Aaron Broad; Tom Briggs; Les Townsend; Hazel Green; Colin Ahoy	Ryan	Presentation of method and field survey	Ryan called each group individually to advise that the presentation of information letter was sent today and also to gauge the suitability of survey being undertaken the week starting May 21. All groups confirmed that they had no issues with the survey being undertaken at this time. Ryan also flagged the possibility of holding an inception meeting on the first day of survey before the survey commenced to meet Aboriginal groups, discuss culturally appropriate protocols, and identify any areas of interest. Each group also agreed that this was a good idea and supported it. Les Townsend informed that he would provide the information to Pam Murray.
4/05/2018	OEH Regional Operations	Roger Mehr	Ryan	Consultation, initial contact and presentation of methods	Ryan sent email to Roger Mehr with the attached assessment methods and project information. Email stated: "Hi Roger, As discussed earlier this week, we have prepared a consultation letter presenting the project, our assessment methods and requesting cultural information for the proposed New England Solar Farm. I have attached the letter that is being sent to RAPs today. The purpose of providing this to OEH concurrently with RAPs is to firstly provide some context about the project and archaeological background and to also give OEH the opportunity to provide feedback at this early stage of the project. If you would like more detailed information about the project, the preliminary environmental assessment (PEA) is accessible from the following link: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9255 The PEA shows that the project area has already been refined in response to environmental constraints, and will continue to be refined as assessments continue. Please feel free to respond via email or over the phone."
15/05/2018	Uralla Shire Council	Council representative	Ryan	Identification of Aboriginal groups	Council apologised for not providing contacts earlier (by 20th april). Council advised to called Oorala Aboriginal Centre at the UNE and gave a contact number 6771 3606
18/05/2018	Oorala Aboriginal Centre	Representative	Ryan	Identification of Aboriginal groups	Ryan Called Oorala based on Councils advice. They advised that I may wish to speak to a Steve Widders but they did not have his contact details
15/05/2018	Uralla Shire Council	Council representative	Ryan	Identification of Aboriginal groups	Ryan's email to council "Dear Council, I was recently called in response to our request to identify local Aboriginal knowledge holders for Uralla. I was advised to contact Oorala Aboriginal Centre at the UNE and gave a contact number 6771 3606. I call the number and they advised for me to speak to a Steve Widders but they didn't have his contact details. I was wondering if you could assist with this. Sorry if this email is strange as I am unsure as to who to direct the email to in council."

Date	Organisation	Contact	EMM person	Topic	Details
22/06/2018	OEH Regional Operations	Roger Mehr	Ryan Desic	Survey update and requirements concerning test excavation	Ryan contacted Roger Mehr to provide an update on the survey results and to discuss options concerning the requirement for test excavatgion. UPC's primary aims were to avoid sites and PADs. Ryan explained that the current approach was for EMM to demarcate PAD areas around certain landforms predicted to have archaeological potential and for UPC to avoid impacts to those areas. Roger agreed in principle about this approach as avoidance of Aboriginal objects is a primary aim. However, Roger acknowledged that OEH would have to examine the ACHA and its justifications to fully support this approach.
9/10/2018	OEH Regional Operations	Roger Mehr	Ryan Desic	Additional assessment	Ryan called Roger Mehr (Archaeologist OEH) to discuss further assessment approach. No answer. Ryan left message
10/10/2018	OEH Regional Operations	Roger Mehr	Ryan Desic	Additional assessment	Ryan called Roger Mehr (Archaeologist OEH) to discuss further assessment approach. No answer. Ryan left message
11/10/2018	OEH Regional Operations	Roger Mehr	Ryan Desic	Additional assessment approach	Ryan called Roger Mehr (Archaeologist OEH) to discuss further assessment approach. No answer. Ryan left message
26/10/2018	Culturally Aware	Cheryl Kitchener	Ryan Desic	Response to draft ACHA	Cheryl called Ryan to provide feedback on the draft ACHA. The outcomes of this conversation is provided in section 2.4.3 of this ACHA.
8/11/2018	OEH Regional Operations	Roger Mehr	Ryan Desic	Additional assessment approach	Ryan called Roger to discuss the the additional assessment requirements proposed in section 9.4 of the ACHA. Ryan explained that these additional tasks would be resolved prior to project approval and submitted to DPE and OEH for assessment. However, due to EIS time constraints these items could not be resolved prior to the EIS exhibition phase. Roger responded by stating that if OEH do not consider the assessment resolved, they may refuse to review the document and request that it is submitted again once additional tasks are completed. Roger acknowledged that a final decision about this matter would be made when issued with the ACHA for review.

A.2 Stage 1 – Notification and registration

This section contains the following documents:

- Government agency requests and responses;
- Public media notifications;
- Aboriginal party invitation to register for the project;
- Aboriginal party registrations of interest; and
- Notification to OEH and the Armidale LALC of registered parties.

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PO Box 21
St Leonards, NSW, 1590

T +61 2 9493 9500
F +61 2 9493 9599
E info@emmconsulting.com.au

www.emmconsulting.com.au

6 April 2018

«Agency»
«Contact_name»
«Address1»
«Address2»
«Email1»

Re: UPC New England Solar Farm - request for identification of Aboriginal parties for consultation

Dear , «Salutation»

EMM Consulting Pty Limited (EMM), on behalf of the **UPC Renewables Australia Pty Ltd**, is seeking to identify Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the proposed New England Solar Farm. The project is a major grid-connected solar farm within the Uralla Shire local government area. It is proposed on a site approximately 6 km east of the township of Uralla and will cover a development footprint of up to 2,400 hectares across three areas of land currently used for grazing (see attached map).

In accordance with the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010), EMM requests information about relevant Aboriginal persons and Aboriginal organisations who you consider may have cultural knowledge relevant to the local area.

I would be appreciative of your response by 20 April 2018 to the following:

UPC New England Solar Farm

c/o EMM Consulting Pty Limited

ATN: Ryan Desic

PO Box 21

St Leonards NSW 1590

Ph: (02) 9493 9541

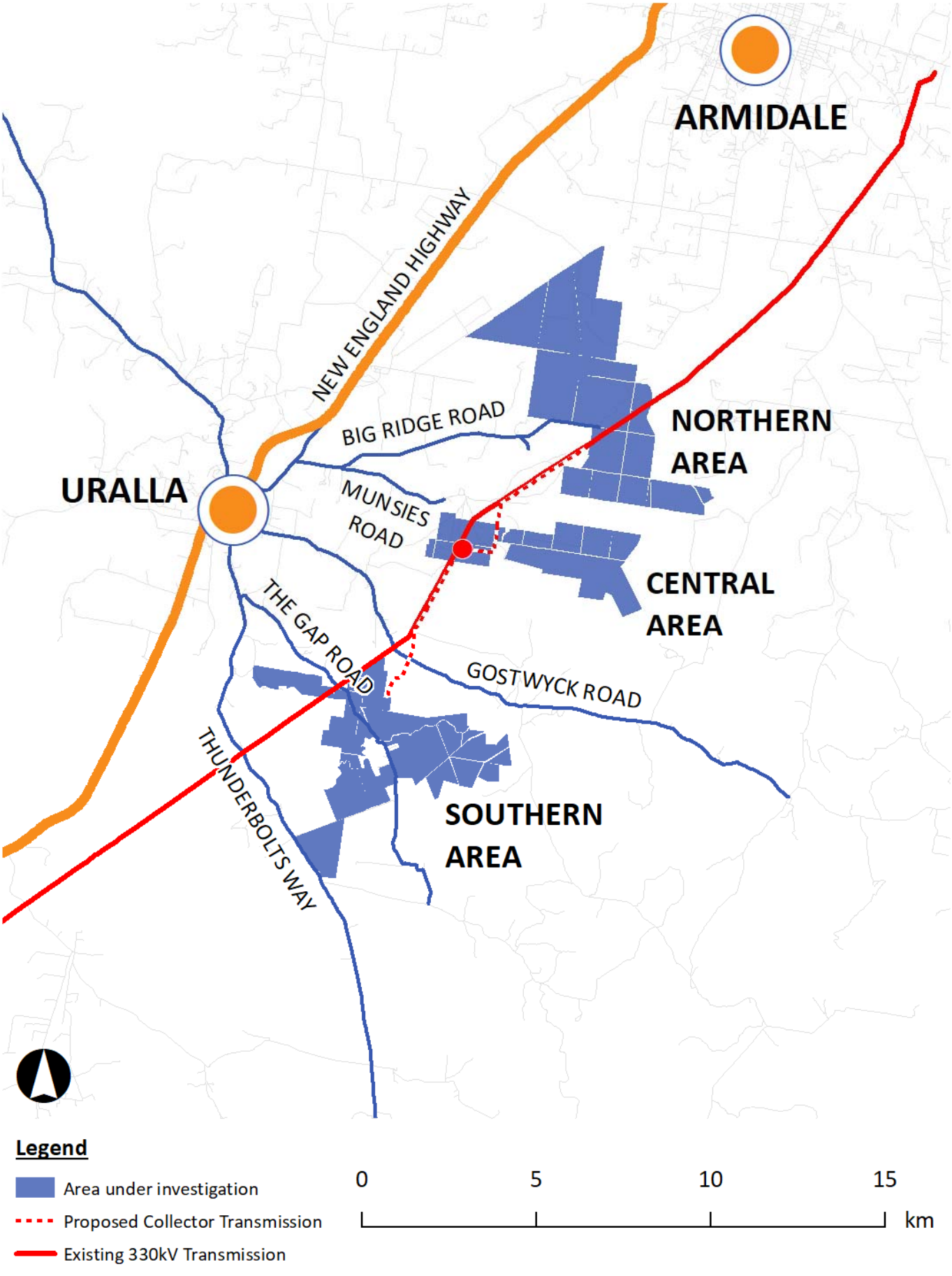
Email: rdesic@emmconsulting.com.au

Please advise us at your earliest convenience if additional time is required to provide this information. Information received after 20 April 2018 might not be considered in the consultation process due to the assessment timeframe.

Yours sincerely,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599 | **E** rdesic@emmconsulting.com.au


ARMIDALE
NEW ENGLAND HIGHWAY
BIG RIDGE ROAD
NORTHERN AREA
URALLA
MUNSIES ROAD
CENTRAL AREA
THE GAP ROAD
GOSTWYCK ROAD
THUNDERBOLTS WAY
SOUTHERN AREA
Legend
Area under investigation
Proposed Collector Transmission
Existing 330kV Transmission
0
5
10
15
km

Notice of Aboriginal Consultation

Project name: **New England Solar Farm**
Proponent: **UPC Renewables Australia Pty Ltd**

UPC Renewables Australia is developing the New England Solar Farm, a major grid-connected solar farm within the Uralla Shire local government area. The project is proposed on a site approximately 6 km east of the township of Uralla and will cover a development footprint of up to 2,400 hectares across three areas of land currently used for grazing (refer map).

Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the proposed project are invited to register an interest to consult with the proponent on the topic of Aboriginal cultural heritage and the proposed activity.

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in:

1) assessing the Aboriginal heritage values of the area,
2) preparing an Environmental Impact Statement under Part 4, Division 4.1 of the Environmental Planning and Assessment Act 1979, preparing application/s for AHIPs (should they be required) and
3) to assist regulators in the assessment of Aboriginal heritage reports prepared for this project.

Registrations of interest must be submitted in writing on or before 27 April 2018. Registrations should include the name of a contact person, address and other relevant contact details, preferably including an email address. The names of registered Aboriginal parties will be passed on to the relevant Local Aboriginal Land Council and the Office of Environment and Heritage unless a request to the contrary is made.

Send registrations of interest to:

New England Solar Farm
C/o EMM Consulting Pty Limited
PO Box 21, St Leonards, NSW 2065
Fax: 02 9494 9599
Email: **rdesic@emmconsulting.com.au**

Registration of interest does not guarantee paid involvement
Proponent contact: **info@newenglandsolarfarm.com.au**

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Fax: 02 4578 3032
Internet: www.fairfaxmedia.com.au
Email: acm.accounts@fairfaxmedia.com.au

ABN: 33 003 357 720

TAX INVOICE / STATEMENT

Customer details:

EMM CONSULTING
LEVEL 1, SUITE 6, 146 HUNTER STREET

NEWCASTLE NSW 2300

Account No:	34184746
Invoice No:	3500401
Phone:	0249074800
Dates:	13/04/2018 to 13/04/2018
Classification:	628 (Public Notices)
First Words:	NOTICE OF ABORI
Size:	14 cms x 4 cols
Inserts:	1
Authorised by:	DAVID RICHARDS
P/O Number:	
Package:	
Sales Rep:	Marie Gallagher - Armidale

Insertion details:

Publication	*Run date*
Armidale Express	13/04/2018

Total (ex GST):	$1046.08
Creditcard surcharge	$9.41
plus GST:	$105.55
Total Charges: (inc GST):	$1161.04

Payment details: *(RC)*

Payment received with thanks.

12/04/2018 08:55:31 $1161.04 555005...012 receipt: 7070405173 Honour with identification (08)

Printed 12/04/2018 08:57:06 - (AW)

NSW GOVERNMENT | Office of Environment & Heritage

Our Ref: DOC18/218201
Your Ref: 6 April 2018

Mr Ryan Desic
Senior Archaeologist
EMM Consulting Pty Limited
PO Box 21
St Leonards NSW 1590

Dear Mr Desic

Re: UPC New England Solar Farm request for OEH Known Aboriginal parties

Thank you for your letter dated 6 April 2018 to the Office of Environment and Heritage (OEH) about Aboriginal cultural heritage consultation for the proposed assessment of the abovementioned property which lies in the Uralla Shire local government area. I appreciate the opportunity to provide input.

Please find enclosed a list of known Aboriginal parties for the Uralla Shire local government area (Attachment A) that we consider likely to have an interest in the proposal. Note this is not an exhaustive list of all interested Aboriginal parties and does include the relevant Local Aboriginal Land Council, which should be contacted independently. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with the OEH 'Aboriginal cultural heritage consultation requirements for proponents 2010' (the CRs).

- Ensure the project documents the full consultation process in the Aboriginal Cultural Heritage Assessment Report and to include copies of all correspondence sent to or received from all relevant stakeholders (including Aboriginal stakeholders and the agencies listed in section 4.1.2 of the CRs). Omission of these records in the final report may cause delays in the assessment of the Aboriginal Heritage Impact Permit application or require parts of the consultation process to be repeated if the evidence provided to us does not demonstrate that the consultation process has been fair, equitable and transparent.

- Ensure we are provided with evidence that reasonable attempts have been made to contact the relevant parties associated with the CRs. If this is not provided then we will deem that the consultation process has not complied with the CRs. We consider evidence of reasonable efforts to contact relevant parties would include, but not be limited to, multiple forms of communication; faxes (with confirmation slips demonstrating successful transmission), an e-mail log, registered post details, copies of letters and a phone call log.

- Note that Appendix A of the CRs contains a map illustrating which Regional Office of the OEH should be contacted regarding the AHIP application based on the local government area in

Locked Bag 914 Coffs Harbour NSW 2450
Federation House, Level 8, 24 Moonee Street
Coffs Harbour NSW 2450
Tel: (02) 6659 8200 Fax: (02) 6659 8281
ABN 30 841 387 271
www.environment.nsw.gov.au

which the project is located. Full details of the consultation requirements and the relevant Fact Sheets can be located on our website at: www.environment.nsw.gov.au/licences/consultation.htm.

- Forward to us any changes to the contact details of interested Aboriginal parties, or information regarding additional parties, so that we can update its records.

- Ensure that consultation is fair, equitable and transparent. If the Aboriginal parties express concern or are opposed to parts of or the entire project, we expect that evidence will be provided to demonstrate the efforts made to find common ground between the opponents and the proponent.

If you have any further questions about this issue, Mr Roger Mehr, Archaeologist, Regional Operations, OEH, can be contacted on 6773 7005 or at Roger.Mehr@environment.nsw.gov.au.

Yours sincerely

19-4-18

ROGER MEHR
A/Senior Team Leader Planning, North East Region
Regional Operations

Contact officer: ROGER MEHR
6773 7005

Enclosure: Attachment 1 – OEH Known

Attachment 1: OEH Known Aboriginal Parties for the UPC New England Solar Farm project area in the Uralla Shire Local Government Area

1. Mr Craig Archibald
   27 Margaret Street
   TERALBA NSW 2284
   Phone: 0455550549

2. Aaron Broad
   1 Waratah Ave
   ALBION PARK RAIL NSW 2527
   Mob: 0402 526 888
   minnamunnung@gmail.com

Ryan Desic

From: Enquiries [Enquiries@nntt.gov.au]
Sent: Friday, 6 April 2018 3:48 PM
To: Ryan Desic
Cc: Kaitlin Pol Bodetto
Subject: RE: SR4026 - UPC┐ New┐ England┐ Solar┐ Farm - ┐ request┐ for┐ identification┐ of┐ Aboriginal┐ parties┐ for┐ consultation - SR4026
Attachments: 20180406_SR4026_NSW_Overlap_Report_Uralla_Shire_Council.xlsx

UNCLASSIFIED

Native title search – *NSW Parcels within Uralla Shire Council LGA*
Your ref: *N/A* - **Our ref:** *SR4026*

Dear Ryan Desic,

Thank you for your search request received on 6 April 2018 in relation to the above area, please find your results attached.

Please note: Where the area identified to be searched is indistinct, generalised, or is for a freehold parcel, the results provided may relate to the Local Government Area (LGA) or Local Aboriginal Land Council (ALC).

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

- Schedule of Native Title Determination Applications
- Register of Native Title Claims
- Native Title Determinations
- Register of Indigenous Land Use Agreements
- Notified Indigenous Land Use Agreements

For more information about the Tribunal's registers or to search the registers yourself and obtain copies of relevant register extracts, please visit our website.

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to the "Area covered by claim" section of the relevant Register Extract or Schedule Extract and any maps attached.

Search results and the existence of native title
Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

The Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards,

Enquiries
Public enquiry hours are 8.30am to 4.30pm
National Native Title Tribunal | Perth
Facsimile (08) 9425 1193 | Email enquiries@nntt.gov.au
Freecall 1800 640 501 | www.nntt.gov.au
Shared Country Shared Future

From: Kaitlin Pol Bodetto < >
Sent: Friday, 6 April 2018 2:11 PM
To: Enquiries <Enquiries@nntt.gov.au>
Subject: SR4026 - RE: UPC[1]New[1]England[1]Solar[1]Farm - [1]request[1]for[1]identification[1]of[1]Aboriginal[1]parties[1]for[1]consultation

---

Kaitlin Pol Bodetto | Administration Assistant
T 02 9493 9500 | **D** 02 9493 9513 | **F** 02 9493 9599
ADELAIDE | BRISBANE | NEWCASTLE | SYDNEY

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---

From: Kaitlin Pol Bodetto
Sent: Friday, 6 April 2018 2:10 PM
To: 'nswenquiries@nntt.gov.au'
Subject: UPC[1]New[1]England[1]Solar[1]Farm - [1]request[1]for[1]identification[1]of[1]Aboriginal[1]parties[1]for[1]consultation

Dear Sir/Madam,

Please find attached a letter requesting the identification of relevant Aboriginal groups or individuals who may be interested in being consulted for the a proposed solar farm project.

Kind Regards,

Kaitlin Pol Bodetto | Administration Assistant
T 02 9493 9500 | **D** 02 9493 9513 | **F** 02 9493 9599
Ground Floor, Suite 01, 20 Chandos Street, St Leonards NSW 2065

PO Box 21, St Leonards NSW 1590

ADELAIDE | BRISBANE | NEWCASTLE | SYDNEY

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National Native Title Tribunal

Overlap Analysis Report

Disclaimer

This information product has been created to assist in understanding the spatial characteristics and relationships of this native title matter and is intended as a guide only. Spatial data used has been sourced from the relevant custod and/or the Tribunal, and is referenced to the GDA94 datum.

While the National Native Title Tribunal (NNTT) and the Native Title Registrar (Registrar) have exercised due care in ensuring the accuracy of the information provided, it is provided for general information only and on the understanc the Registrar nor the Commonwealth of Australia is providing professional advice. Appropriate professional advice relevant to your circumstances should be sought rather than relying on the information provided. In addition, you mus judgment and carefully evaluate the information provided for accuracy, currency, completeness and relevance for the purpose for which it is to be used.
The information provided is often supplied by, or based on, data and information from external sources, therefore the NNTT and Registrar cannot guarantee that the information is accurate or up-to-date.
The NNTT and Registrar expressly disclaim any liability arising from the use of this information.
This information should not be relied upon in relation to any matters associated with cultural heritage.

Please note:

- Calculated areas may not be the same as the legal area of a parcel.
- Where shown, NNTT Tenure Class for a non freehold parcel refers to a tenure grouping derived for the purposes of the Tribunal, and does not necessarily represent the jurisdictional tenure type.
- Overlap results are returned only for the currently active jurisdiction.

Selected feature

Name	Uralla
Full name	Uralla Shire Council
As at	1/08/2017
Calculated area SqKm	3,226.0609

Overlap details

Schedule of Native Title Determination Applications

Overlap Tribunal ID	Name	FC No	Date Lodged	RT Status	Area sq km(calculated)
NC2011/006	Gomeroi People	NSD2308/2011	20/12/2011	Accepted for registration	111,313.4885
NN2017/009	Uralla Men's Shed	NSD1993/2017	10/11/2017	Not currently identified for registration	0.0030

Register of Native Title Claims

Overlap Tribunal ID	Name	FC No	Date Lodged	RT Status	Combined	Area sq km(calculated)
NC2011/006	Gomeroi People	NSD2308/2011	20/12/2011	Accepted for	N	111,313.4885

Native Title Determinations

No overlap found

Native Title Determination Outcomes

No overlap found

Indigenous Land Use Agreements

No overlap found

RATSIB areas

Name	Organisation	RATSIB Status	Area sq km(calculated)
New South Wales	NTSCORP Limited	NTSP	1,723,577.6107

lians in each jurisdiction,

ding that neither the NNTT,
t exercise your own

Overlap Area sq km (calculated)
1,914.9139
0.0030

Overlap Area sq km (calculated)
1,914.9139

Overlap Area sq km (calculated)
3,226.0609

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

9 April 2018

Ryan Desic
EMM
Ground Floor, Suite 01
20 Chandos Street
ST LEONARDS NSW 1590

Dear Ryan

Re: Request - Search for Registered Aboriginal Owners

I refer to your email dated 6 April 2018 regarding an Aboriginal Cultural Heritage Assessment for the proposed New England Solar Farm within the Uralla Shire Local Government Area, NSW.

I have searched the Register of Aboriginal Owners and the general project area described has Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983*.

I suggest that you contact Mr Dominic Beckett on 0427 668 333 who represents the Mt Yarrowyck Negotiating Panel. I suggest you also contact the Armidale Local Aboriginal Land Council on 02 6772 7639. They may be able to assist you in identifying other Aboriginal stakeholders for this project.

Yours sincerely

Jodie Rikiti
Administration Officer
Office of the Registrar, ALRA

Address: Level 3, 2 – 10 Wentworth Street, PARRAMATTA NSW 2150
Post: P.O Box 5068, PARRAMATTA NSW 2124
Phone: 02 8633 1266

Ryan Desic

From: debbie.cuneen@lls.nsw.gov.au on behalf of Admin NorthernTablelands [admin.northerntablelands@lls.nsw.gov.au]
Sent: Thursday, 19 April 2018 10:10 AM
To: Ryan Desic
Cc: Dimitri.Young@environment.nsw.gov.au; information@ntscorp.com.au; council@uralla.nsw.gov.au; ceo@alalc.org.au; gtonna@ntscorp.com.au
Subject: Re: UPC New England Solar Farm - request for identification of Aboriginal parties for consultation

Hi Ryan,

I refer to your email and wish to advise we are unable to provide the details you are seeking but suggest that you contact the relevant local Aboriginal organisation, see details below:-

Armidale Local Aboriginal Land Council
Phone: 6772 2447
Email: <ceo@armidale.org.au>
Contact: Mr Tom Briggs (CEO)

Regards
Debbie Cuneen, Coordinator Customer Service
Northern Tablelands Local Land Service
PO Box 108 | GLEN INNES | NSW | 2370
T: +61 2 6732 8800 | F: +61 2 6732 1420
E: admin.northerntablelands@lls.nsw.gov.au
W: www.lls.nsw.gov.au

Like us on Facebook

On 19 April 2018 at 09:23, Ryan Desic <rdesic@emmconsulting.com.au> wrote:

Dear Government Agency,

This is just a friendly reminder about our request for identification of Aboriginal parties for consultation for the proposed New England Solar Farm in Uralla. I have attached an example of the previous letter sent on 6 April 2018 for your convenience. Could you please provide a response at your earliest convenience so that the project is not delayed.

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

Ground Floor, Suite 01, 20 Chandos Street, St Leonards NSW 2065

PO Box 21, St Leonards NSW 1590

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Please note that EMGA Mitchell McLennan Pty Limited has changed its name to EMM Consulting Pty Limited (simply refer to us as EMM). Email and website addresses have been changed to reflect this. All other details including ABN, bank details etc remain unchanged.

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This message is intended for the addressee named and may contain confidential information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of their organisation.

23 April 2018

Ground Floor, Suite 01, 20 Chandos Street
St Leonards, NSW, 2065
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St Leonards, NSW, 1590

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E info@emmconsulting.com.au

www.emmconsulting.com.au

«Organisation»
«First_Name» «Last_Name»
«Address_1»
«Address_2»
«Email»

Re: New England Solar Farm - Invitation to register for Aboriginal consultation

Dear «First_Name»

1 Invitation to register

UPC Renewables Australia Pty Ltd (UPC) is developing the New England Solar Farm, a major grid-connected solar farm (the project) within the Uralla Shire local government area (LGA). The project is proposed on a site approximately 6 km east of the township of Uralla and will cover a development footprint of up to 2,400 hectares across three areas of land currently used for grazing. The location of the project is shown on the attached figure.

The project is a State Significant Development (SSD) under the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Therefore, a development application (DA) for the project is required to be submitted under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The NSW Minister for Planning, or the Minister's delegate, is the consent authority. If applicable, the consultation process will also encompass future Aboriginal Heritage Impact Permit (AHIP) applications for the project issued under s.90 of the NSW *National Parks and Wildlife Act 1974* if certain activities are proposed outside the SSD process.

EMM Consulting Pty Limited (EMM), on behalf of UPC, is seeking to identify Aboriginal organisations or Aboriginal persons who hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or Aboriginal places in the area of the proposed New England Solar Farm.

Your organisation has been identified as having potential interest in registering for consultation in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

If you wish to register your interest as an Aboriginal party, your registration must be in writing (letter, fax or email), and include:

- your name/organisation; and
- current contact details (postal address, email, phone number/s).

EMM is seeking to engage in all future correspondence with registered Aboriginal Parties (RAPs) via email. This method is considered the most reliable, cost-effective, and timely manner of consultation. As such, EMM requests your agreement to undertake the consultation via email as the official method of contact.

We request that you provide your email address to rdesic@emmconsulting.com.au.

Registrations must be received by Ryan Desic (see contact details below) by close of business on 7 May 2018.

As required by the NSW Office of Environment and Heritage (OEH) guidelines, details of people registering as Aboriginal parties will be forwarded to OEH and the Armidale Local Aboriginal Land Council unless you specify otherwise.

Registration of interest does not guarantee employment.

Please send correspondence to:

New England Solar Farm
C/O Ryan Desic
EMM Consulting
PO Box 21
St Leonards NSW 2065
Phone: 02 9493 9541
Fax: 02 9493 9599
Email: rdesic@emmconsulting.com.au

2 What's next?

If you have chosen to register for this project, we will be in contact shortly after the registration period is closed to provide a presentation of the method for the Aboriginal heritage investigation of the project for your review and comment.

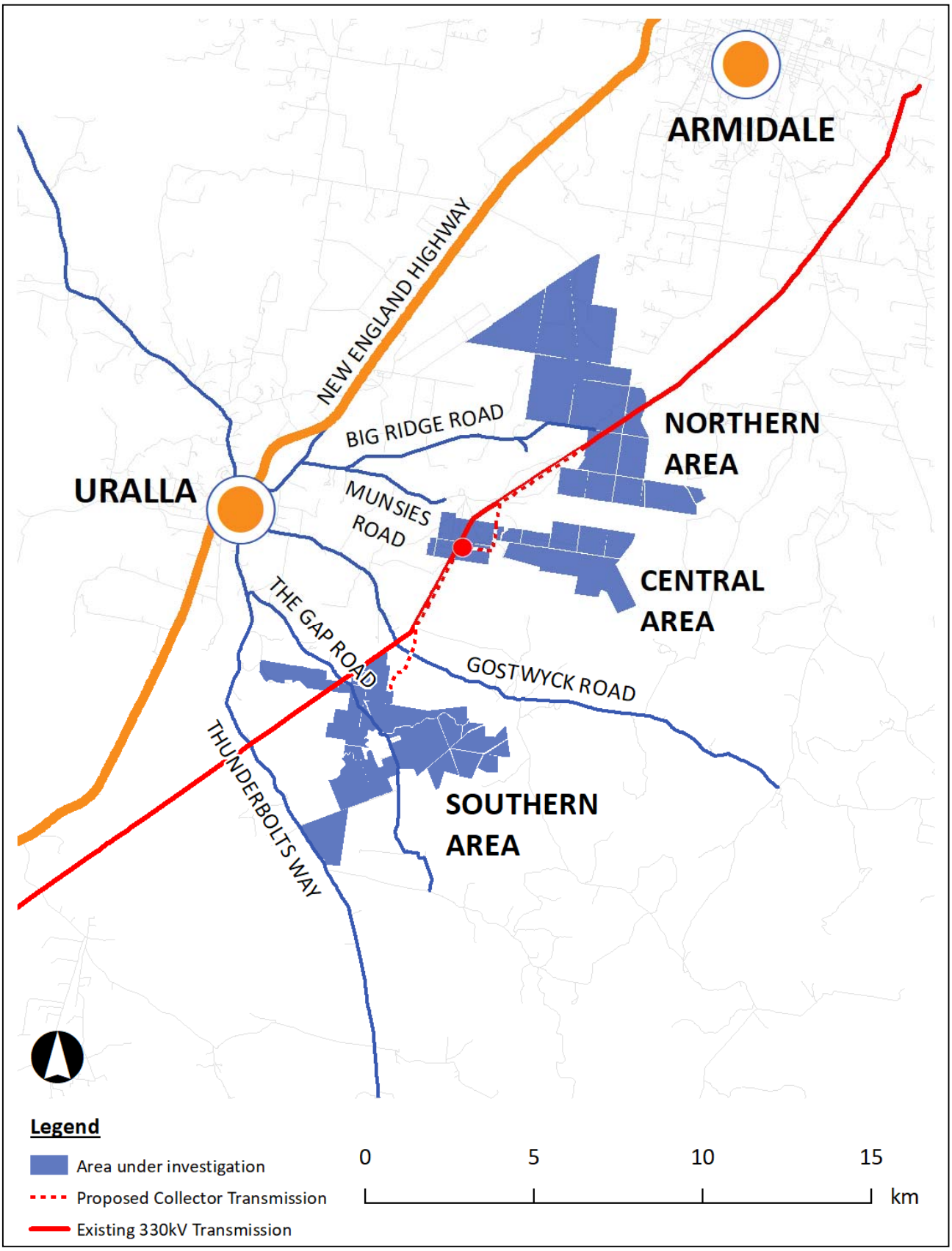
3 Any questions?

Please feel free to contact me with any questions or queries about the project via email or telephone (details provided below).

Yours sincerely,

Ryan Desic
Senior Archaeologist
rdesic@emmconsulting.com.au
Ph: 02 9493 9541

UPC contact: info@newenglandsolarfarm.com.au


ARMIDALE
NEW ENGLAND HIGHWAY
BIG RIDGE ROAD
NORTHERN AREA
URALLA
MUNSIES ROAD
CENTRAL AREA
THE GAP ROAD
GOSTWYCK ROAD
THUNDERBOLTS WAY
SOUTHERN AREA
Legend
Area under investigation
Proposed Collector Transmission
Existing 330kV Transmission
0
5
10
15
km

Ryan Desic

From: Ryan Desic
Sent: Thursday, 19 April 2018 9:23 AM
To: Dimitri.Young@environment.nsw.gov.au; information@ntscorp.com.au; admin.northerntablelands@lls.nsw.gov.au; council@uralla.nsw.gov.au; ceo@alalc.org.au; gtonna@ntscorp.com.au
Subject: UPC New England Solar Farm - request for identification of Aboriginal parties for consultation
Attachments: J17300_Agency request_template.pdf

Dear Government Agency,

This is just a friendly reminder about our request for identification of Aboriginal parties for consultation for the proposed New England Solar Farm in Uralla. I have attached an example of the previous letter sent on 6 April 2018 for your convenience. Could you please provide a response at your earliest convenience so that the project is not delayed.

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

Ground Floor, Suite 01, 20 Chandos Street, St Leonards NSW 2065

PO Box 21, St Leonards NSW 1590

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Ryan Desic

From: Aaron Michael Broad [minnamunnung@gmail.com]
Sent: Wednesday, 2 May 2018 1:35 PM
To: Ryan Desic
Subject: Re: New England Solar Farm - Invitation to register for Aboriginal consultation

Thank you for the invitation to register an exspression of interest for the New England Solar Farm Project as Minnamunnung would be interested in registering for this project kind regards Aaron Broad Minnamunnung

On Wed, 2 May 2018 at 12:30 pm, Aaron Michael Broad <minnamunnung@gmail.com> wrote:

> Yes, I will be attending.
>
> On Wed, 2 May 2018 at 11:08 am, Ryan Desic <rdesic@emmconsulting.com.au> wrote:
>
> > Hi Aaron,
> >
> > Could you please respond to my previous email at your earliest convenience?

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

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PO Box 21, St Leonards NSW 1590

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Please consider the environment before printing my email.

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From: Ryan Desic
Sent: Monday, 23 April 2018 1:15 PM
To: 'minnamunnung@gmail.com'
Subject: New England Solar Farm - Invitation to register for Aboriginal consultation

Dear Aaron,

Please find attached a letter inviting you to register for the New England Solar Farm.

Please read and get back to me as soon as possible,

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

Ground Floor, Suite 01, 20 Chandos Street, St Leonards NSW 2065

PO Box 21, St Leonards NSW 1590

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--
Regards

Aaron Michael Broad
Chief Cultural Heritage Officer
Minnamunnung

CONTACT DETAILS

Address: 7/144 Kelly Road BINGIE, NSW, 2537,

Phone: 0402526888
Email: minnamunnung@gmail.com

--

Regards

Aaron Michael Broad
Chief Cultural Heritage Officer
Minnamunnung

CONTACT DETAILS

Address: 7/144 Kelly Road BINGIE, NSW, 2537,

Phone: 0402526888
Email: minnamunnung@gmail.com

Ryan Desic

From: Cheryl Kitchener [anaiwannation@gmail.com]
Sent: Monday, 7 May 2018 11:58 AM
To: Ryan Desic
Subject: Register for Aboriginal Consultation - New England solar Farm

Dear Ryan,

I would like to register my interest in the above project.

I am an Aboriginal Owner of the Anaiwan People who Country this project is on. I have 30 years experience in cultural heritage management and was trained by my grandparents is cultural history and identification. I also have a BA in Archaeology from UNE.

I have extensive experience in the New England area, as a local and a AO I have worked with many companies and organisations in cultural management, conservation and protection.

I represent Culturally Aware a local Aboriginal organisation that teaches Aboriginal youth Aboriginal Cultural heritage.

I have worked in the local area for approximately 35 years and am familiar with the local landscape and history.

I look forward to working and consulting on the above project.

Warm regards

Cheryl Kitchener
0431519607

Ryan Desic

From: Colin Ahoy [cahoy4@une.edu.au]
Sent: Monday, 16 April 2018 9:04 PM
To: Ryan Desic

Project Name New England Solar Farm
Dear Sir,
I am writing in response to the proposed development of a Solar farm as advertised in the local papers in the Uralla Shire.
I would appreciate if you can add our organisations name to your list as a Aboriginal stakeholder in the proposed area.
As a Aboriginal stakeholder we would appreciate if you can keep us informed on the progress of the work,also our organisation hopefully will be involved in the Aboriginal Cultural heritage and preparation of a cultural impact report.
I have a long association with the country where the proposed work will take place
having lived in this community for many years and working on other major projects such as the one you are planning to,
I have worked with many archeologists in the New England Area over the years and I have the trust and respect from those archeologists
Colin Ahoy

Chairman
Nunawanna Aboriginal Corporation
4 Archibald Street
Armidale. NSW. 2350
0423943756

Ryan Desic

From: Green, Kevin [kevin.green@alsnswact.org.au]
Sent: Thursday, 26 April 2018 2:38 PM
To: Ryan Desic
Cc: Cyril Green
Subject: Registration of interest

The Manager
New England Solar Farm
C/- EMM Consulting Pty Limited
PO Box 21
ST. LEONARDS NSW 2065
Fax: (02) 9494 9599

Dear Sir/Madam

I write this e-mail to you in respect of an advertisement which was lodged in the Armidale Express dated Friday 13 April 2018. This e-mail is to express interest in the proposed New England Solar Farm consultation on behalf of the Armidale and New England Gumbaynggirr Descendents. The Armidale and New England Gumbaynggirr Descendents is a Local Aboriginal Organisation which has ties to the land within the Armidale and New England region. The contact person for the Armidale and New England Gumbaynggirr Descendents is Mrs Hazel Green (O.A.M) Public Officer. Her contact telephone number is (02) 6771 1342. Her contact address is C/- 20 Eleanor Close, Armidale, NSW, 2350. She can be contacted via this e-mail address of kevin.green@alsnswact.org.au. I am her son. We look forward a response from you in due course.

Yours faithfully

Kevin Green
Field Officer
Northern Region
Aboriginal Legal Service (NSW/ACT) Limited

E kevin.green@alsnswact.org.au
P (02) 6772 5770
M 0427 511 529

ADDRESS
128A Dangar Street
ARMIDALE NSW 2350

POST
PO Box 708
ARMIDLAE NSW 2350

Aboriginal Legal Service (NSW/ACT) acknowledges the Traditional Owners and Custodians of the lands on which we live, work and travel. We pay our respects to Elders both past and present and acknowledge the contribution and sacrifice our Elders have made to better our community and future.

Ryan Desic

From: Steven Ahoy [steven1ahoy@gmail.com]
Sent: Sunday, 6 May 2018 5:23 PM
To: Ryan Desic
Subject: The New England Solar Farm
Attachments: NewEnglandSolarFarm.pdf

Hello Ryan,

Steven Ahoy Cultural Consultant's would like to register interest in being involved with the New England Solar Farm.
I have attached a formal letter.

Thank you Steven Ahoy.

NGANYAWANA CULTURAL CONSULTANTS

28 Minmi Road
Edgeworth NSW 2285
nganyawana@gmail.com

ABN: 40 232 011 064

14th May 2018

Ryan Desic
EMM Consulting
PO Box 21
St Leonards NSW 1590
Email: rdescis@emmconsulting.com.au

RE: Proposed New England Solar Farm.

G'Day Ryan,

As a Traditional Custodian and Cultural Knowledge Holder of the Nganyawana Clan Group which is part of the Anaiwan Nation, I would like to register to participate in any Cultural Heritage Assessment and any survey's that will be conducted within in the scope of the proposed New England Solar Farm Project.

Background Information

I have been a participant in many Aboriginal Cultural Surveys within the New England area and more specifically within the Armidale area for the past 35 years. My cultural knowledge is extensive which was gained through my interactions and being taught by my Elder Mentors, especially the initiated men.

I note that an on-site meeting will be held on 21st May 2018 with field work continuing to 1st June 2018. I am available on these dates.

I look forward to participating in this proposed project as I have a commitment to protecting and conserving that which is left of our fragmented cultural past history.

Yours truly,

Les Ahoy JP.
M: 0408 060 500

NYAKKA ABORIGINAL CULTURE HERITAGE CORPORATION ARCHAEOLOGICAL & CULTURAL HERITAGE CONSULTANTS

7/5/2018

Proposed New England Solar Farm

Attention: **Ryan Desic**

I would like to formally register an interest in the above project.

Nyakka Aboriginal Cultural Heritage Corporation was established by Aboriginal people who have direct connection to Anaiwan country. Surrounding areas mentioned form part of the Anaiwan country therefore, we would like to register our group as interested stakeholders and Aboriginal Owners within Armidale and Uralla area.

Rhonda Kitchener is our Senior Sites Officer and Knowledge Holder who can assist you with cultural information in the Anaiwan country.

Can you please ensure that Rhonda is placed on your data base as a registered Knowledge Holder and Aboriginal Owner in Anaiwan Country

Yours sincerely

Rhonda Kitchener

Chairperson

265 RUSDEN STREET ARMIDALE 2350 NSW PHONE 0422820657
EMAIL: rhondakitchener09@hotmail.com
ABN 88064518658

8 May 2018

Ground Floor, Suite 01, 20 Chandos Street
St Leonards, NSW, 2065
PO Box 21
St Leonards, NSW, 1590

T +61 2 9493 9500
F +61 2 9493 9599
E info@emmconsulting.com.au

www.emmconsulting.com.au

Re: Registered Aboriginal Parties for the New England Solar Farm

Dear AGENCY

In accordance with section 4.1.6 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) the Armidale Local Aboriginal Land Council is hereby notified that a total of **eight** parties registered for consultation regarding the New England Solar Farm Project.

As per the consultation requirements, the Registered Aboriginal Parties can be found in Table 1 and the forms of notification are attached to this letter.

Table 1 List of Registered Aboriginal Parties for the New England Solar Farm Project

Organisation	Contact
Aaron Broad	Aaron Broad
Armidale Local Aboriginal Land Council	Tom Briggs
Nunawanna Aboriginal Corporation	Colin Ahoy
Armidale and New England Gumbaynggirr Descendents	Hazel Green
Les Townsend	Les Townsend
Steven Ahoy	Steven Ahoy
Culturally Aware	Cheryl Kitchener
Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Rhonda Kitchener

Note that project area is outside the boundaries of the Gomeroi People Native Title Claimants (over 8 km west) and were therefore not invited to register in the project. No other native title claims currently exist over the project area.

Yours sincerely,

Ryan Desic
Senior Archaeologist
rdesic@emmconsulting.com.au
Attached: Sample of media notification and invite to register documents

A.3 Stages 2 and 3 – presentation of information and gathering cultural information

This section contains the following documents:

- project information and draft assessment methodology letter;
- agenda from the first consultation meeting on 21 May 2018; and

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E info@emmconsulting.com.au

www.emmconsulting.com.au

4 May 2018

«Organisation»
«First_Name» «Last_Name»
«Address_1»
«Address_2»«Address_3»
«Email»

Re: New England Solar Farm: Presentation of information, request for cultural information, and request for feedback about proposed Aboriginal cultural assessment methods

Dear «First_Name»,

1 Introduction

Thank you for registering your interest in being consulted on Aboriginal cultural heritage matters for the New England Solar Farm (the project). EMM Consulting Pty Limited (EMM), on behalf of UPC Renewables Australia Pty Ltd (UPC), is preparing an Aboriginal cultural heritage assessment (ACHA) for the project. The ACHA will support a broader environmental impact statement (EIS) currently being prepared for the project.

The aims of this letter are to:

- provide an overview of the project and approval pathways;
- establish the purpose and aims of the Aboriginal consultation process;
- provide your party with an opportunity to inform EMM about any Aboriginal cultural heritage values associated with the project and how they may affect, inform or refine the project and/or assessment methods;
- identify any culturally appropriate protocols that registered parties wish to be adopted during the information gathering process (eg protocols during field survey, or handling of culturally sensitive information);
- present a draft of the intended ACHA methods for your review and comment; and
- notify your party of upcoming fieldwork.

We welcome your written feedback at your earliest opportunity, and no later than **1 May 2018**. Letters attached to email is the preferred mode of written communication as it will reduce postal waiting periods.

2 Project description

2.1 Overview

UPC proposes to develop the New England Solar Farm; a significant grid-connected solar farm along with associated infrastructure, approximately 6 kilometres (km) east of the township of Uralla, which lies approximately 19 km south of Armidale in the Uralla Shire local government area (LGA) (Figure 1) (the project).

The project is likely to be developed across three separate arrays of photovoltaic (PV) modules (commonly referred to as 'solar panels'); incorporating transmission infrastructure between each of the three arrays and a centralised grid-interfacing substation (Central Substation) to enable connection into the existing electricity transmission network (Figure 2). The project will have a targeted 'sent out' electricity generating capacity of up to 800 MW (AC) and depending on its final size and design, the project will have an estimated capital investment value in the order of $0.6–$1 billion.

An overview of the project is provided below. More detailed information about the project can be found in the preliminary environmental assessment, which is available at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9255

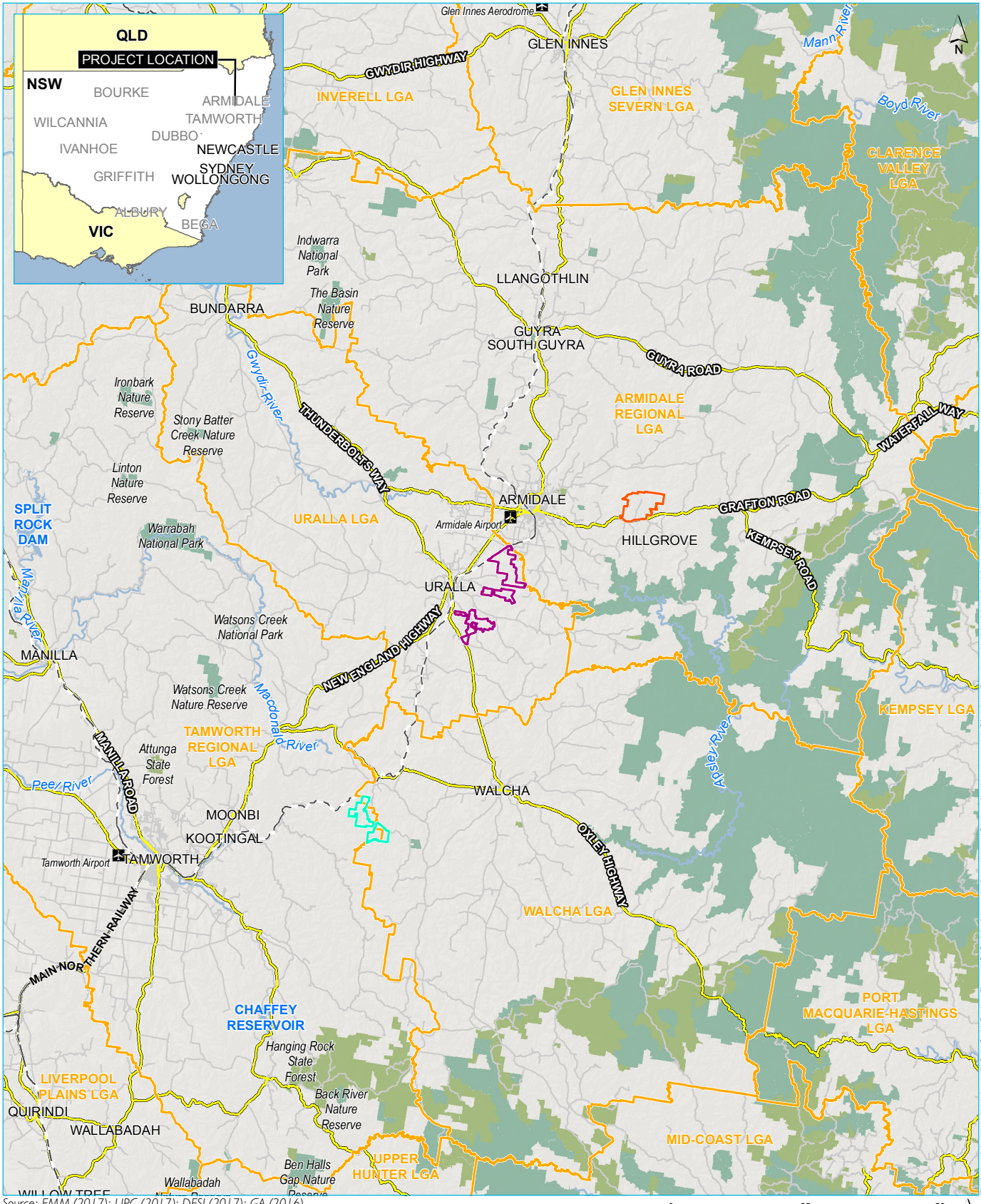
2.2 The project area

The project area encompasses a total area of 4,244 ha, which includes three distinct land areas, a northern area (2,028 ha), central area (794 ha) and southern area (1,422 ha), all separated by significant amounts of agricultural land (Figure 2).

During the preparation of the EIS, the development footprint and the project's electricity generating capacity will be refined on the basis of stakeholder engagement, environmental assessment and constraints identification, detailed grid connection studies, engineering assessment and financing considerations. Once this refinement has been undertaken, the development footprint for the project is expected to encompass a total area of up to 2,400 ha across the three areas, all contained within the project boundary (Figure 2), consisting of approximately 1,000 ha required for the rows of PV modules and the remaining area associated with inverters, space between the rows, internal access tracks and associated infrastructure.

This excludes land required for connection infrastructure between the three solar arrays which would involve easements across private land, land required for new internal roads to enable access to project area from the surrounding road network and land to accommodate the battery and energy storage system (BESS).

The required land area is driven primarily by the need to build a project of sufficient electricity generating capacity to achieve economies of scale in output, justifying the substantial grid connection costs and thus being able to achieve a competitive price for the electricity supplied to households.



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Source: EMM (2017); UPC (2017); DFSI (2017); GA (2016)

KEY

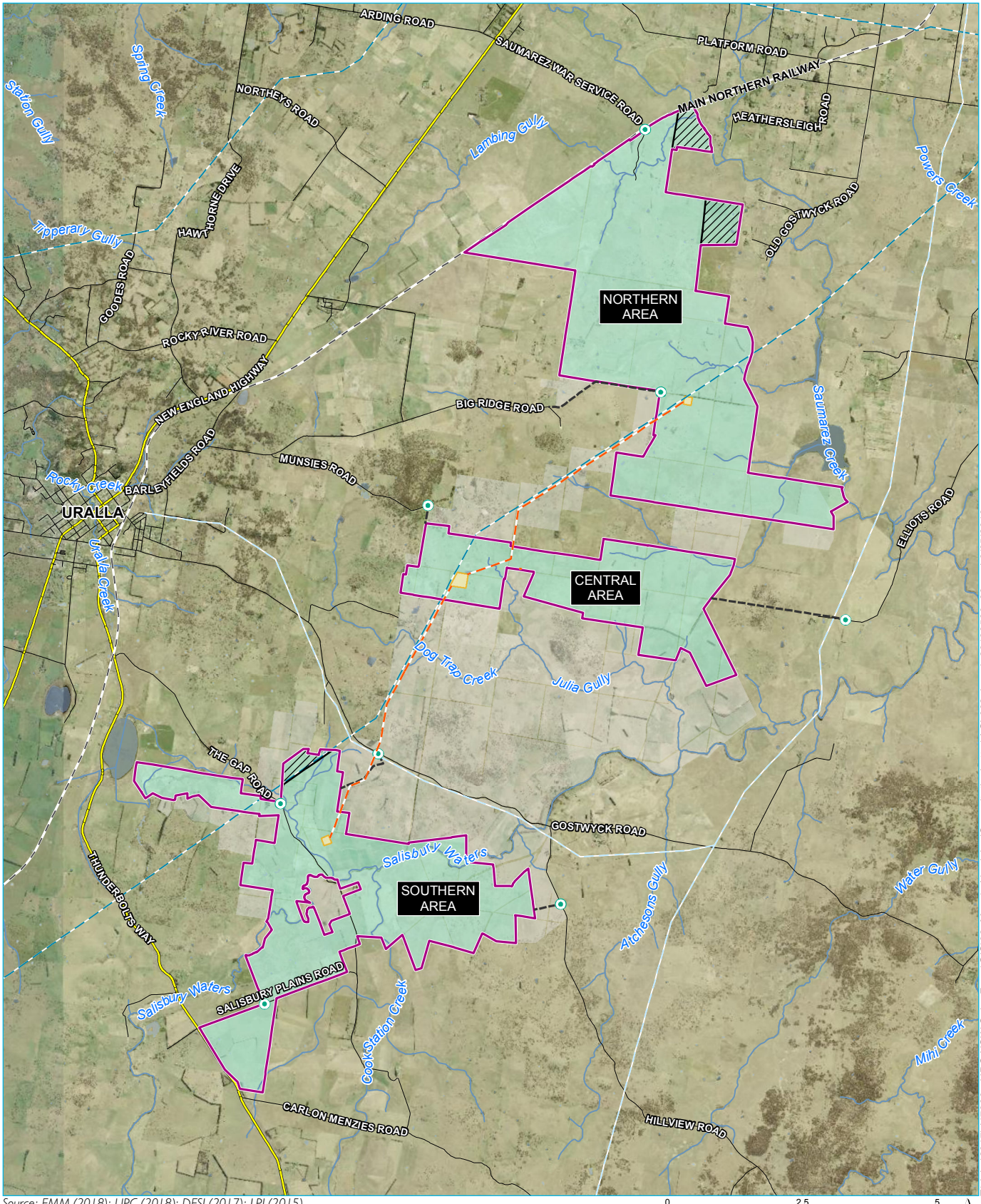
- Project area*
- Metz Solar Farm proposed project area
- Woolbrook Wind Farm proposed project area
- Local government area (LGA) boundary
- Airport
- Rail line
- Main road
- Local road
- Major waterway
- Waterbody
- NPWS reserve
- State forest

*Project infrastructure will occupy approximately 55% of the area within the project area.

Regional project location

New England Solar Farm
Aboriginal consultation letter
Figure 1.1

EMM



Source: EMM (2018); UPC (2018); DFSI (2017); LPI (2015)

0 2.5 5 km
GDA 1994 MGA Zone 56

N

KEY

- Project area*
- Areas to exclude project infrastructure
- Involved Lots
- Preliminary substation sites
- Preliminary array connection
- Indicative site access road
- Preliminary site access locations
- 66kV transmission line
- 330kV transmission line
- Main road
- Local road
- Rail line
- Watercourse / drainage line
- Waterbody

*Project infrastructure will occupy approximately 55% of the area within the project area.

Location of the New England Solar Farm

New England Solar Farm
Aboriginal consultation letter
Figure 2

EMM

T:\Jobs\2017\J17300 - UPC NSW Solar Farm\GIS\02_Maps_AboriginalConsultationLetter\ACL002_Local_20180503_03.mxd 3/05/2018

2.3 Project infrastructure

The project involves the development, construction and operation of a solar PV electricity generation facility, which consists of PV modules, inverters and associated infrastructure. Consideration of project infrastructure, particularly the nature and extent of ground disturbance activities, will be a key aspect of the ACHA impact assessment. The ACHA will identify how the project disturbance footprint will affect Aboriginal sites and/or places within the project area.

2.3.1 Solar arrays, PV modules, medium voltage cable network and inverters

The project will involve the development of three separate arrays of PV modules and inverters. The total land area required to achieve the targeted capacity for each array will be refined on the basis of further detailed grid connection studies, stakeholder engagement, environmental assessment and constraints identification and detailed engineering assessment. The number of PV modules and inverters required will be dependent on the final detailed design of the project.

PV modules will be installed in a series of rows to maximise the energy yield that is achievable given the solar resource and the ground area available within the project boundary. The modules will be fixed to, and supported by, a ground-mounted framing structure, aligned in rows (refer Photograph 1 for an example). Assuming single axis tracking technology is used the rows of PV modules will be aligned in a north-south direction and spaced out approximately 5-8 m apart. The use of single axis tracking technology would enable the PV modules to rotate from east to west during the day to track the sun's movement.

Photograph 1 Example of the potential PV module layout

An alternative configuration for the PV modules may be considered for the project, namely a fixed tilt system, with the rows aligned east-west and the PV modules facing north. However, it is noted that single axis tracking is considered more likely due to the recent fall in technology costs and the superior energy yield associated with this technology.

The PV modules will be supported on mounting frames consisting of vertical posts ('piles') and horizontal rails ('tracking tubes'). Rows of piles will be driven or screwed into the ground, depending on the geotechnical conditions, and the supporting tracking framework will be mounted on top. Pre-drilling and/or cementing of foundations will be avoided if allowed by the geotechnical conditions.

The height of the PV modules at their maximum tilt angle (typically up to 60 degrees) will be no more than approximately 4 m. Additional site-specific clearance of up to around 500 mm may be required to avoid flooding risk or to allow sheep to graze underneath the PV modules.

An underground medium voltage (MV) cable reticulation network will also be required to transport the electricity around each of the three arrays. Underground cables of either 22 kV or 33 kV will be installed at a depth of at least 600 millimetres (mm) and will be designed and fitted in accordance with relevant Australian industry standards. Electricity from the underground cable network will be stepped up to high voltage (HV) at each of the three internal solar array substations.

1.1.1 Solar array substations

Up to three substations will be required (ie one at each of the three solar arrays) to step the MV up to HV. Based on preliminary designs, each substation will require transformers to step up from 33 kV to 132 kV. Each substation will likely consist of an indoor switch room, to house MV circuit breakers and an outdoor switch yard to house the transformer(s), gantries and associated infrastructure. The total pad area for each solar array substation is likely to be in the order of approximately 2-3 ha. Indicative locations for the solar array substations are provided in Figure 2.

1.1.2 Collector network and central substation

Three new overhead transmission lines will transport electricity from each of the internal solar array substations to the Central Substation. Where possible, UPC will look to align the three new overhead transmission lines with TransGrid's 330 kV transmission line. Based on preliminary designs, the anticipated voltage is 132 kV, single circuit. The total estimated length of these transmission lines is approximately 12.7 km, which would include transmission lines from the southern (5.2 km), central (1.7 km) and northern (5.8 km) areas to the Central Substation. The alignment of the overhead transmission lines and design, height and style of the structures required to support them will be determined during the detailed design stage of the project; however, it is unlikely that the height of the structures will exceed 45 m. Based on preliminary designs single concrete poles are anticipated rather than steel lattice towers. The easement required for the overhead transmission lines will be dependent on the type of structure selected but is unlikely to be more than 45 m in width.

The Central Substation will be adjacent to TransGrid's 330 kV transmission line, which traverses the project area and surrounds (Figure 2). At the Central Substation, the electricity generated by the three solar arrays will be stepped up to 330 kV and injected into the grid via TransGrid's 330 kV transmission line. The Central Substation will require a pad area of up to 6 ha. An envelope providing adequate flexibility for design and siting of the Central Substation is provided on Figure 2. The exact dimensions will be refined during the detailed design stage of the project.

1.1.3 Battery energy storage system

It is anticipated that a central battery energy storage system (BESS) will be installed as part of the project, with this being located as close as possible to the Central Substation to minimise losses.

The specific technology, MW rated capacity and MWh of storage of the proposed BESS will be determined during the detailed design stage of the project and will be dependent on a number of commercial and financial considerations during the development phase. The sizing of the BESS is also likely to be driven by government policy, given the current focus on mechanisms to ensure reliability and dispatchability of

renewable energy power generation. The BESS will be housed in a secure compound. Should any additional land be required for the BESS, this will be described within the EIS.

1.1.4 Supporting infrastructure

In addition to the infrastructure described above, the project will also require:

- one or more operations and maintenance buildings and associated infrastructure;
- a number of new internal roads to enable access to the three areas of the project from the surrounding road network (namely Gostwyck Road, The Gap Road, Salisbury Plains Road, Hillview Road, Munsies Road, Saumarez War Service Road, Elliots Road and Big Ridge Road – refer Figure 1.2);
- parking and internal access roads/tracks within the project area to allow for construction and ongoing maintenance; and
- fencing and landscaping around the solar arrays, substations and BESS.

Temporary infrastructure during the construction phase of the project including laydown and storage areas and a site compound may also be required.

Detailed layout configuration will be informed by technical assessments performed during the preparation of the EIS and the detailed design stage of the project. Project infrastructure will be positioned, where possible, to avoid identified constraints.

3 Project approval context

The project is a State significant development (SSD) under the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Therefore, a development application (DA) for the project is required to be submitted under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The NSW Minister for Planning, or the Minister's delegate, is the consent authority.

As required for SSD projects, the EIS (including the ACHA) will be prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs). Although project SEARs have not yet been issued, EMM anticipates they will specify that an ACHA is completed in accordance with the documents presented in Section 4 of this letter.

The abovementioned assessment pathway means that an Aboriginal heritage impact permit (AHIP) is not required for the project during the environmental assessment or for development consent. If the project is approved, any Aboriginal objects and/or places affected by the project would be managed under an Aboriginal Heritage Management Plan (AHMP), following endorsement by the NSW Department of Planning and Environment (DPE).

4 Preliminary desktop assessment

4.1 Overview

The following information is provided so that your party is introduced to the landscape within the project area and its archaeological context. Hopefully this will allow areas of potential cultural importance to be identified during the early stages so that it can be considered for the upcoming fieldwork. This is intended as an overview only, and the ACHA will provide the more detailed background research and analysis that has been used to develop the predictive model of Aboriginal site location which will guide the archaeological survey.

4.2 Landscape overview

The project area is part of the New England Tablelands Bioregion covers an area of more than 3,000,000 ha. Over 95% of this bioregion is within NSW, the rest extending north just into Queensland. Most of the land within the project area is within the Armidale Plateau subregion, which is characterised by an undulating to hilly plateau at an elevation of approximately 1,100 m. It has a stepped landscape across basalt flows, broad valleys which steepen to the east at the head of the Great Escarpment Gorges.

The geology of the project area generally contains fine-grained Permo-Carboniferous sedimentary rocks, granites and Tertiary basalt flows. The underlying geology has caused outcropping rock material including granite tors, basalt outcrops, silcrete outcrops, glass like tuffs and cherts on certain landforms. Soil landscapes data provides a guide to where particular rocks are outcropping in the landscape. Soil landscapes information been useful in preparing the survey predictive model presented in Table 1 and therefore has been mapped on Figure 3 to highlight certain areas of interest.

The project area is part of the catchment of the Macleay River which rises to the east of the project area at the confluence of the Gara River, Salisbury Waters and Bakers Creek and flows south-east through a coastal floodplain, where it meets the Pacific Ocean. The main watercourses associated with the project area are Salisbury Waters, Julia Gully and Saumarez Creek.

There are three primary upland wetlands near Uralla: Dangars Lagoon, Racecourse Lagoon and Barleyfields Lagoon. Dangars Lagoon is directly west of the southern array, Racecourse Lagoon is approximately 1.6 km west of the southern area and Barleyfields Lagoon is approximately 4.6 km north-west of the central area. Dangars Lagoon (similar to all upland wetlands of the group) is shallow (less than 1.5 m deep), oval-shaped and with rocky margins

The project area has been modified by past disturbances associated with clearing, cropping and livestock grazing. The project area is currently primarily used for sheep grazing for production of wool and lambs, with some cattle grazing for beef production. The land in between the northern, central and southern areas of the project will continue to be used as agricultural land.

4.3 Archaeological background

4.3.1 AHIMS search results

EMM conducted a search of the Aboriginal Heritage Information Management System (AHIMS) register on 9 November 2017. The search covered an area of approximately 25 km x 25 km centred on the project area; but also extended beyond the project boundary. The aim of the search was to identify if any Aboriginal sites or places are registered within the project area and to aid predictions for the project area from the frequency and distribution of Aboriginal site types in the broader landscape.

The AHIMS search identified 36 Aboriginal sites which are categorised in Plate 1 and presented on Figure 4. Only one site, a scar tree (AHIMS ID #21-4-0046), is shown registered in the project area. As part of a preliminary site inspection, archaeologists from EMM and Remnant Archaeology searched for this site (refer Section 4.3.2). The site was not located as the AHIMS data is incorrect.

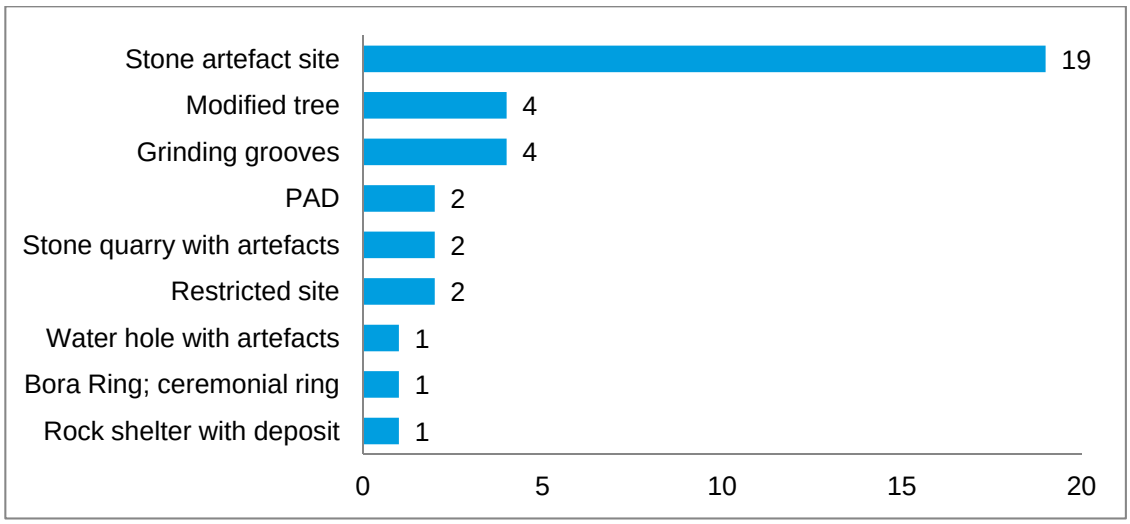


Plate 1 AHIMS site types and their frequencies within the search area

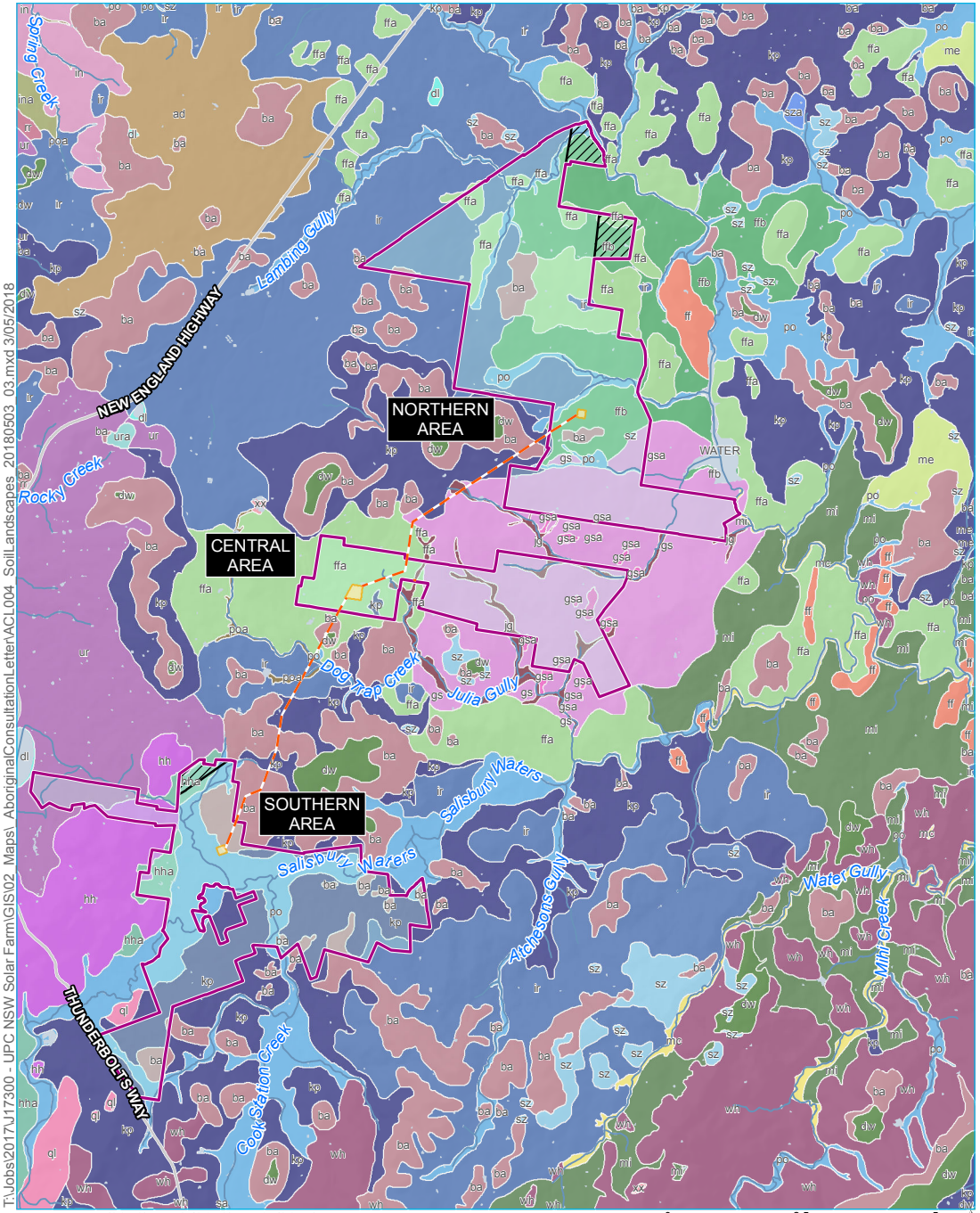
The AHIMS search also identified two sites registered with restricted information, meaning that the location and site type was not provided in the search results. EMM contacted the AHIMS registrar on 24 April 2018 to verify if the restricted sites are in the project area. A representative from the NSW Office of Environment and Heritage's (OEH's) Heritage Division confirmed that the restricted sites are outside the project area and will not be impacted.

4.3.2 Previous site verification fieldwork

As part of identifying preliminary heritage constraints for the project, archaeologists from EMM and Remnant Archaeology conducted a site inspection on 7 February 2018 to ground-truth and verify the location of two Aboriginal sites recorded on AHIMS: scar tree (AHIMS ID #21-4-0046) registered in the southern area and Bora Ring site (AHIMS #21-4-0002), registered approximately 1 km to the south-east of the southern area. Neither site was re-located during the field inspection.

The registered location of the Bora Ring was inspected by Dr Graham Knuckey (Remnant Archaeology) along with an area 200 m to 300 m south-west of the recorded location to account for the possibility of a data error in the AHIMS register. However, although many rocks were identified amongst grasses, no definable pattern resembling a ceremonial ring was observed. As such, it could not be determined if the site had been disturbed from farming activities or if it had been recorded incorrectly. The AHIMS site card only contains cursory information, mentioning that there are the remains of two Bora grounds but no further detail or a map was provided. **EMM welcome further information from RAPs regarding this site so that it can be assessed appropriately.**

The location of the scar tree (AHIMS ID #21-4-0046) was also inspected, but there were no trees at all; dead or alive. A brief inspection of dead trees 300 m to the north, and another group of dead trees on the access to the paddock further east, revealed no scarring, cultural or otherwise. Further analysis of the map provided on the AHIMS site card revealed that the site was actually 1.4 km north-east of the central area close to Big Ridge Road. As such, the location of the site shown on Figure 4 is incorrect.



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KEY

- Project area*
- Areas to exclude project infrastructure
- Preliminary array connection
- Preliminary substation sites
- Main road
- Watercourse / drainage line
- Waterbody

Soil landscape (soil code)

- ARDING, ad
- BALD KNOB, ba
- DANGARS LAGOON, dl
- DISTURBED TERRAIN, xx
- DWYERS RANGE, dw
- FAIRFIELD variant a, ffa
- FAIRFIELD variant b, ffb
- FAIRFIELD, ff
- GOSTWYCK variant a, gsa
- GOSTWYCK, gs
- HARNHAM HILL variant a, hha
- HARNHAM HILL, hh
- INVERGOWRIE variant a, ina
- INVERGOWRIE, in
- IRONSTONE, ir
- JULIA GULLY, jg
- KELLYS PLAINS, kp
- MIDDLE EARTH, me
- MIHI, mi
- McCANNS FLAT, mc
- POWERS CREEK variant a, poa
- POWERS CREEK, po
- QUEENLEE, ql
- ROCKY RIVER, rr
- SALISBURY PLAINS, sa
- SAUMAREZ variant a, sza
- SAUMAREZ, sz
- URALLA variant a, ura
- URALLA, ur
- WATER, WATER
- WHITES HILL, wh

*Project infrastructure will occupy approximately 55% of the area within the project area.

Source: EMM (2018); UPC (2018); DFSI (2017); LPI (2018); DELWP (2001); DECC (2012)

0 2.5 5 km

GDA 1994 MGA Zone 56

N

Soil landscapes

New England Solar Farm
Aboriginal consultation letter
Figure 3

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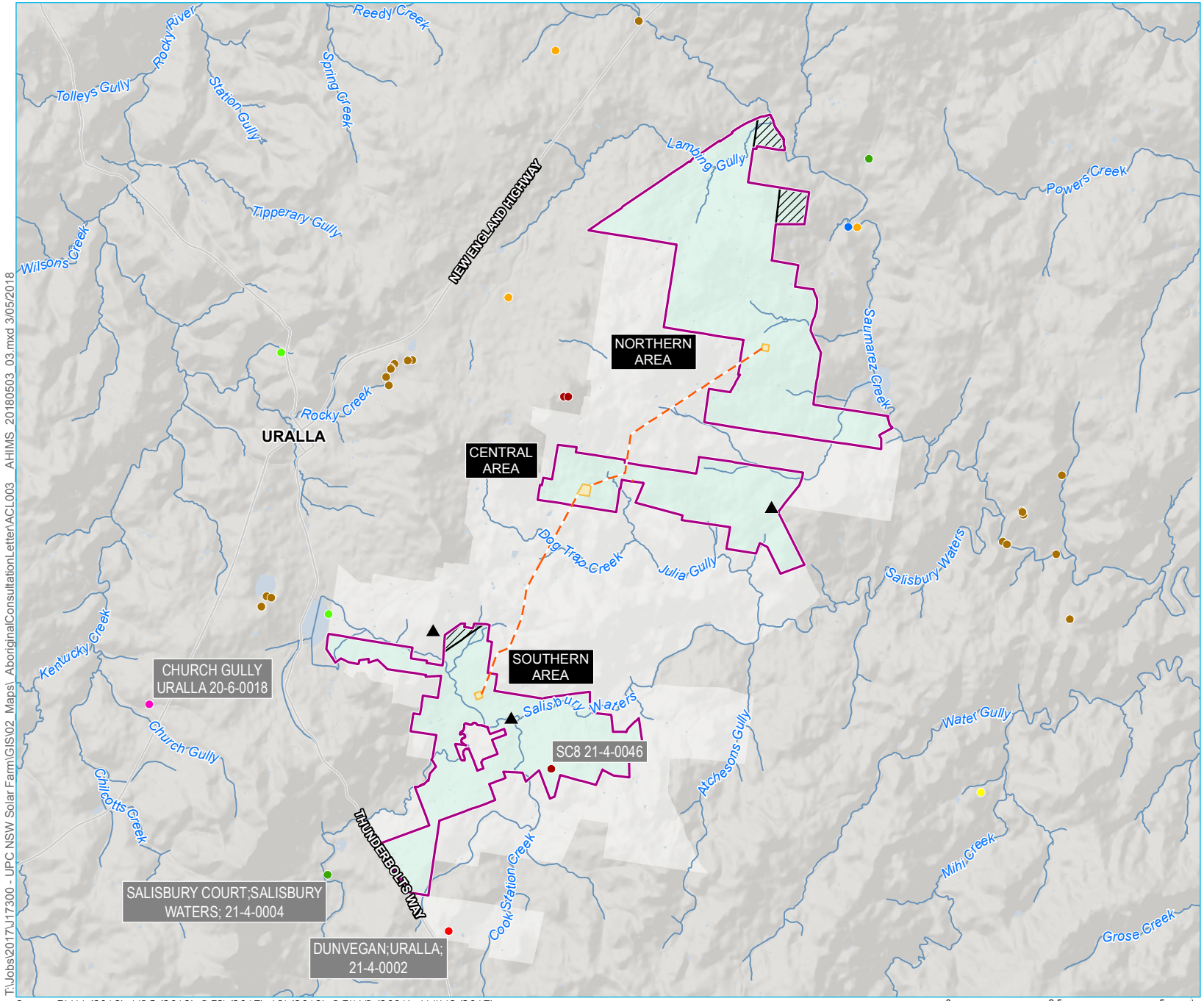

KEY

- Project area*
- Areas to exclude project infrastructure
- Preliminary array connection
- Preliminary substation sites
- Additional sites visited during preliminary field survey

AHIMS sites

- Bora Ring, ceremonial ring
- Grinding grooves
- Modified tree (carved or scarred)
- PAD
- Restricted site
- Rock shelter with deposit
- Scarred tree
- Stone artefact site
- Stone quarry with artefacts
- Water hole with artefacts
- Main road
- Watercourse / drainage line
- Waterbody

*Project infrastructure will occupy approximately 55% of the area within the project area.

T:\Jobs\2017\J17300 - UPC NSW Solar Farm\GIS\02 Maps\ AboriginalConsultationLetter\ACL003 AHIMS 20180503 03.mxd 3/05/2018

Source: EMM (2018); UPC (2018); DFSI (2017); LPI (2018); DELWP (2001); AHIMS (2017)

0 2.5 5 km

GDA 1994 MGA Zone 56

N

AHIMS sites and preliminary field survey

New England Solar Farm
Aboriginal consultation letter
Figure 4

EMM

4.3.3 Archaeological studies and their implications

This section aims to summarise background research completed for the ACHA and discuss its implications for the project area based on landscape analysis. This provides a preamble to the predictive model presented in Section 4.3.4 which provides more succinct predictive statements for site types within the project area.

Earlier studies have emphasised that the New England region has a high number of ceremonial sites including Bora grounds, stone arrangements, carved trees and rock art sites (McBryde 1974; Bowdler 1981). The distribution of stone arrangements and Bora grounds across the landscape is somewhat unpredictable as the choice of their location was based on spiritual reasons over landscape features and resources. Notwithstanding, sites such as stone arrangements have been noted to be commonly on hill crests, spurs and ridges (McBryde 1974). As such, these landforms in the project area with outcropping stone of suitably small boulders would have highest potential to feature such sites.

Many of the soil landscapes mapped across the project area are noted to feature outcropping stones, but only physical survey would determine if:

a) the outcropping material is of suitable size to have been used for stone arrangements;

b) such sites physically occur; and

c) the extent of disturbance potentially affecting such sites.

Care would also need to be taken to distinguish natural stone clusters or piles created by farming practices, such as field clearance, from actual Aboriginal sites.

Many ceremonial site features are unlikely to have survived in the archaeological record and therefore are unlikely to occur in the project area. Although earth-mounded Bora rings have been recorded throughout the region (largely through historical accounts), if they were created in the project area they are unlikely to have survived in the archaeological record because of historical clearing and farming practices. Furthermore, earth mounded or stone mounded burials would have been susceptible to extensive disturbance and degradation over time. Similarly, for these reasons, scar or carved trees are also unlikely to occur in the project area; nevertheless, any mature trees should not be discounted until inspected.

Rock art sites (paintings and engravings) are unlikely to occur in the project area as they typically occur in rock shelters or expanses of suitable outcropping bedrock. The AHIMS search identified a ‘shelter’ known as ‘Church Gully Uralla’ (AHIMS # 20-6-0018), however it was not described as a rock shelter in the actual report, as there was no mention of an overhang, but a “jumble” of granite boulders (Bowdler 1979, p.1). Soil landscapes information for the project area indicate that the Gostwyck and Uralla soil landscapes feature large granite tors, but further inspection in the project area would be required to determine their size and suitability as Aboriginal sites. Notably, it would be important to identify if overhangs occur on the granite tors as they have been known to feature ochre art (McBryde 1974, p.67).

Later studies since the 1980s (Godwin 1990; Beck 2006; Appleton *et al* 2015) challenged the original theories suggesting the New England region was primarily seasonally occupied by family groups as well as used for ceremonial purposes. The notion of year-round occupation sets a frame of reference that the region was occupied more intensively than once thought and in more utilitarian ways, and this may extend to the project area.

Open camp sites of stone artefact scatters, stone quarries and grinding groove sites have some potential to occur in the project area. Notably, land surrounding lagoons (such as Dangars Lagoon immediately west of the southern area) have been identified feature multiple site types including artefact scatters of microliths, ground edge axes, grinding stones, scarred trees and a quarry. This area may have supported intensive occupation, and may feature subsurface archaeological deposits. Notably, the quarry site ‘Salisbury Court’

(AHIMS#21-4-0004) is 1.5 km west of the southern area approximately 100 m from Salisbury Waters on the Harnham Hill soil landscape which can feature rounded boulders of mixed and pebbly volcanics and vitric (glass-like) tuffs. A portion of the southern area shares a similar landscape context. Furthermore, there are various other types of outcropping rock in the project area that would have been suitable for quarrying, including basalt, chert, jasper, silcrete and grey wacke. Additionally, there is a small portion of the Saumarez soil landscape that features outcropping silcrete which may have been used for both quarrying and grinding creating grooves.

The predictions for the distribution of scatters of stone artefacts or isolated artefacts in the project area are generally consistent with established models in eastern NSW that are based on proximity to water and the reliability of the water source. Larger sites with higher artefact densities are likely to occur near reliable streams, whereas smaller, low-density sites may occur near ephemeral streams. Elevated landforms with good outlook near streams are areas most likely to have been chosen for camp sites. The AHIMS search results provide a cursory image of the distribution of stone artefact sites and support that they are commonly found in association with both ephemeral and reliable streams, and lagoons. Any stone artefact sites in the project area are likely to be a reflection of mid-Holocene occupation and later and may include backed microliths, and ground edge axes made from local and imported material (Beck 2006).

4.3.4 Predictive model

The predictive model of Aboriginal site location has been developed from synthesising background information and applying it to the project area. The model enabled predictions to be made about the location of Aboriginal sites within the project area and this information will guide the archaeological survey.

The results from the predictive model are summarised in Table 1. This will be updated and/or modified prior to survey based on the outcomes of RAP feedback within the 28 day period.

Table 1 Site type and distribution

Site type	Predictions
Open artefact sites and isolated finds	**General:** Open stone artefact scatters and isolated finds are the site types most likely to occur in the project area. These may occur anywhere as background scatter, but are most likely to occur close to reliable sources of water (generally within 200 m). Although stone artefact sites may be present in these areas, their detection is dependent on favourable ground surface visibility conditions. Further, more recent ground disturbance, for instance through farming or flooding, will have an effect on the accuracy of the predictive model. **High sensitivity:** *Southern area:* • larger and higher density artefact scatters representing campsites are likely to occur within 200 m of Salisbury Waters (6th order stream), Cook Station Creek (5th order) and its junction with Salisbury Waters and the unnamed 4th order tributary leading from Dangars Lagoon to Salisbury Waters and its junction. These are most likely to occur on stream banks and level to gently inclined elevated landforms near these streams including crests, spurs, terraces and lower slopes/foot slopes that were above regular inundation and provided good outlook. • Adjacent to Dangars Lagoon at the western edge of the southern area. Distance of sensitivity in the landscape has not been established but could extend beyond 200 m as indicated by other lagoons in Uralla. *Central area* • The central area is over 200 m from any reliable watercourses. It is unlikely to feature extensive artefact scatters representing larger campsites. *Northern area* • Larger and higher density artefact scatters representing campsites are likely to occur within 200 m of Saumarez Creek, particularly its junction with Lambing Gully at the north-eastern portion of the northern area, and to a lesser extent, where the south-eastern portion of the northern area borders Saumarez Creek.

Table 1 Site type and distribution

Site type	Predictions
	Moderate sensitivity: *Southern area:* • Smaller and lower density artefact scatters and isolated artefacts may occur near the ephemeral tributaries of Salisbury Waters (3rd order and below) on level to gently inclined landforms, particularly at stream junctions. • Stone artefact sites may occur on spurs or ridges away from watercourses if representing a particular vantage point or travelling route. *Central area:* • Smaller and lower density artefact scatters and isolated artefacts may occur near Julia Gully on level to gently inclined landforms, particularly at stream junctions. If outcropping chert or jasper occurs on the Fairfield (variant a) soil landscape, there may be higher potential for sites to occur associated with the gathering of this raw material resource. *Northern area:* • Smaller and lower density artefact scatters and isolated artefacts may occur near the ephemeral tributaries of Saumarez Creek, including Lambing Gully (3rd order), Harriet Gully (2nd order), and unnamed tributaries. If outcropping chert or jasper occurs on the Fairfield (variant a and b) soil landscapes, there may be higher potential for sites to occur that are associated with the gathering of this raw material resource. **Low to moderate sensitivity:** *All areas:* • Isolated artefacts or small artefact scatters may occur anywhere away from watercourses. These are most likely to be identified on level to gently inclined terrain but not moderately inclined areas that would have been too steep for occupation or directly next to watercourses where flooding has removed them.
Scarred trees	Scar trees may occur where native vegetation has been preserved. This has largely been cleared across all three areas, but aerial imagery indicates that groups of trees and individual trees are distributed across the landscape. Closer inspection would clarify if there are native mature trees with potential or younger regrowth or exotic trees that have no potential.
Carved trees	Carved trees may occur in association with burials, ceremonial sites or as indicators of 'dreaming' tracks and pathways. As such, they may occur only where native vegetation has been preserved, but their location within the landscape is difficult to predict without the aid of cultural knowledge.
Grinding grooves and grind stones	There are small bedrock outcroppings of silcrete on the Saumarez soil landscape in the **northern area** that may feature grinding grooves. Elsewhere grinding grooves on bedrock are unlikely to occur as other types of outcropping geology is probably unsuitable for grinding. Furthermore, portable grinding grooves may occur in the landscape, most likely adjacent to water courses and possibly part of larger open camp site assemblages.
Hearths	The extent of historical land use (primarily vegetation clearance) has led to widespread disturbance, which is likely to have removed or destroyed archaeological traces of this site type. If present, these sites would be adjacent to water courses and possibly part of larger open camp site assemblages. Such site types could remain preserved but only in deeper stratified deposits below the level of historical disturbance.
Burials	Burials can occur anywhere in the landscape but their identification is rare. Generally they would be identified by mounds of earth, carved trees or stone markers. Theoretically they are more likely to occur in areas with cobble and small boulder rock outcrops such as crests and upper slopes of the Harnham Hill and Uralla soil landscapes (**southern area**), the Bald Knob soil landscape (**southern and northern area**) and Gostwyck soil landscape (**central and northern area**). Equally, these soils may have been too shallow and rocky for interment.
Stone arrangements	Stone arrangements are most likley to occur on elevated and relatively flat landforms (eg crests, terraces, ridges) nearby sources of outcropping cobbles or small boulders capable of being moved manually. However, it is very likely that they have been disturbed and/or destroyed by historical land use practices. The areas most likely to feature suitable stones are the Harnham Hill and Uralla soil landscapes (**southern area**), the Bald Knob soil landscape (**southern and northern area**) and Gostwyck soil landscape (**central and northern area**).
Quarries (stone or ochre)	**Southern area:** Quarries of volcanic material and vitric tuffs have a moderate to high likelihood of occurring on the

Table 1 Site type and distribution

Site type	Predictions
	crests and upper slopes of the Harnham hill soil landscape. Resources of basalt, chert and greywacke in the Powers Creek soil landscape may occur but only if rock floaters are exposed, possibly in stream channels. The crests and upper slopes of the Bald Knob soil landscape may feature quarries of basalt or silcrete. The occasional outcrop or locally significant outcrops of surface basalt on the Kellys Plains soil landscape may feature basalt resources. This may occur to the south of Salisbury Waters. **Central area:** The occasional outcrop or locally significant outcrop of surface basalt on the Kellys Plains soil landscape may feature basalt resources. There is only a small area of this in the western portion of the central area. Quarries of chert, jasper and greywacke may occur on crests, spurs and hill slopes on areas of Fairfield soil landscape. Any outcropping metasediments (metamorphic sedimentary rocks) in areas of the Julia Gully soil landscape have some potential to have been used as a quarry. Field inspection would clarify what types of metasediments occur, if any. **Northern area:** A quarry of silcrete may occur on the small pocket mapped as the Saumarez soil landscape. Quarries of chert, jasper and greywacke may occur on crests, spurs and hill slopes on areas of Fairfield soil landscape in the central area. Resources of basalt, chert and greywacke in the Powers Creek soil landscape may occur but only if rock floaters are exposed, possible in stream channels.
Rock art, shelters and engravings	Rock shelters and/or rock art and engravings may occur in areas with large granite tors, comprising the Gostwyck and Uralla soil landscapes. Tor fields are visible from aerial imagery which indicates they occur most obviously in the discrete pockets of the Gostwyck variant a soil landscape in the east of the **central area** and south of the **northern area**. Tor fields are not obvious on aerial imagery in the Uralla soil landscape (western extent of the **southern area**), but ground verification is warranted.
Middens	Middens of bone, charcoal, stone and freshwater shells may occur along extensive and reliable river systems. However, they are rare in the local landscape and are likely to have been disturbed or removed by historical land use. If present, they are most likley to occur in association with open camp sites.

5 Draft assessment method

5.1 Objectives and methods overview

The purpose of the ACHA is to identify, assess and manage the Aboriginal heritage values related to the project area, specifically those that are at risk of being impacted. Aboriginal heritage values will be identified from the following methods:

- consultation with registered Aboriginal parties (RAPs) to identify Aboriginal sites, social or cultural values of the project area and places of special significance that should be considered;
- a search of the AHIMS register for records of previously registered Aboriginal sites (a completed search has not identified any previously recorded sites within the project area);
- development of a predictive model of Aboriginal site location from combining:
    - a review of past Aboriginal heritage studies, ethno-historical information related to the region and local area;

- analysis of the environmental context (eg water, landforms, geology and soils); and
- information from existing sites on the AHIMS register and/or knowledge held by Aboriginal parties.

- an archaeological survey by archaeologists and representatives from RAPs (refer to Section 5.4);
- archaeological test excavation (if appropriate and required – refer to Section 5.5);
- assessing the significance of Aboriginal places and/or objects identified in the course of the archaeological investigations and through Aboriginal community consultation;
- assessing the impact of the project on identified Aboriginal cultural heritage values; and
- proposing appropriate management measures for potentially impacted Aboriginal cultural heritage values in response to their assessed significance.

5.2 Assessment guidelines

The assessment will be undertaken in accordance with the anticipated SEARs for the project. This will involve following best practice archaeological investigation, Aboriginal consultation, significance assessment and impact assessment guidelines, which include:

- *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011);
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010); and
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (the Code) (DECCW 2010a).

5.3 Aboriginal consultation

5.3.1 Overview of consultation

The roles, functions and responsibilities of all parties involved in the consultation process are outlined in Table 2**.** In accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010), each private Aboriginal organisation or individual who responded with a written request to be registered for consultation is referred to as a RAP. Government agencies who registered interest will also be consulted in parallel with RAPs.

Table 2 Roles, functions and responsibilities

Stakeholder	Roles and responsibilities
RAPs	Provide cultural perspectives, views, knowledge and advice to EMM. Indicate areas of cultural significance. Provide Aboriginal sites representatives for archaeological fieldwork (if desired and suitably qualified and insured). Have an awareness and understanding of the commercial environment and constraints in which the proponent operates. Demonstrate awareness and understanding of the opportunities to provide input into the ACHA and management recommendations. Identify, raise, and discuss cultural concerns, perspectives and assessment requirements (if any)
EMM (on behalf of UPC)	Undertake the ACHA, including coordinating and directing the fieldwork.

Table 2 Roles, functions and responsibilities

Stakeholder	Roles and responsibilities
	Facilitate the Aboriginal consultation process. Consider the cultural perspectives, views, knowledge and advice of the RAPs in assessing cultural significance and developing management measures. Provide clear management measures that comply with relevant legislation, guidelines and significance.
All stakeholders	Mutual respect (each person has the right to have a say and be heard) Communicate in a professional manner.

5.3.2 Providing cultural information

Aboriginal heritage incorporates a wide range of values such as stories, traditions and cultural practices. EMM welcomes any advice from the Aboriginal community about any form of Aboriginal cultural heritage values (which might include archaeological sites or other types of values) relevant to the project area and its surrounds.

Knowledge of areas of cultural significance may include, but are not limited to:

- sites or places associated with ceremonies, spiritual/mythological beliefs and traditional knowledge, which date from pre-contact period (note that these activities do not have to have persisted until the present time);
- sites or places associated with historical associations, which date from the post-contact period and are remembered today (eg plant and animal resource use areas and known camp sites); and
- sites or places of contemporary significance, for which the significance has been acquired in recent times.

EMM is seeking cultural information about the project area from registered RAPs in accordance with Section 4.3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010). If you are aware of any form of Aboriginal cultural heritage values (which might include archaeological sites or other types of values), please let us know so that we can take these values into account in the assessment (refer to Section 4.1).

Of particular note, the project area is near areas of cultural significance including:

- a Bora Ring site (AHIMS #21-4-0002), registered approximately 1 km to the south-east of the southern area (noting it was not re-located during a recent site inspection); and
- Dangars Lagoon (directly west of the southern area).

We would appreciate any knowledge your party wishes to share in regard to these sites or any others. EMM is relying on the Aboriginal community for advice on non-archaeological Aboriginal values for the project area. We are happy to meet to discuss any information which you may be willing to share, and will respect confidentiality where requested. Email is our preferred method of communication (see contact details at the end of this letter) but we will also accept letters and faxes, and information given in person during one of the project meetings planned over the coming months.

5.4 Archaeological survey

5.4.1 Survey aims

EMM propose to conduct an archaeological field survey of the project area with the assistance of RAP representatives. It is anticipated that the survey will take approximately 2 weeks. Based on the outcomes of the survey and further refinement of project infrastructure, further survey may be required.

The survey area has been defined by the project area, and therefore most of the survey will take place in the project area. There may be opportunities to inspect areas of interest outside the project area if it will help inform the assessment. **We welcome your party's advice on areas of cultural importance that should be inspected as part of the survey.**

As stated in Section 2.2, the project boundary of the southern, central and northern areas encompasses a total area of 4,244 ha; however the final development footprint is expected to only be up to 2,400 ha (excluding connection infrastructure and roads). As such, there may be opportunities to avoid significant sites or places if identified during survey. It also means that areas of low archaeological potential will need to be verified as these may be the areas most suitable for development.

The primary aims of the survey will be to:

- identify Aboriginal sites or potential Aboriginal places with the assistance of Aboriginal knowledge holders;
- characterise the landscape to aid predictions of surface and sub-surface archaeological potential;
- identify areas that may require further investigation if panned for development;
- identify areas that should be avoided by project construction where possible; and
- identify areas with minor or no heritage constraints that are suitable for development.

5.4.2 Sampling strategy

i Overview

The project area has been divided into classes of landform units for sampling during the survey. The extent of sampling within each class of landform unit will be proportionate to its level of archaeological sensitivity as presented in the predictive model. It should be acknowledged that the entire ground surface within the project area (ie 4,244 ha) project boundary will not be surveyed, but a representative sample of each landform unit class will be gathered to characterise the archaeology, or its potential, of the project area.

For areas not covered by survey, EMM will prepare an archaeological sensitivity model which will be made based on the results for the surveyed areas. The reliability of the predictive model will be dependent on the outcomes of the fieldwork. The archaeological sensitivity model will be useful to identify project constraints and possibly where further investigation, avoidance or mitigation is required.

The survey sampling strategy will be updated based on feedback from the RAPs and may incorporate areas of known or potential Aboriginal objects or places from knowledge held by RAPs.

ii Landform division for sampling

The project area has been divided into broad landform unit classes using the *Australian Soil and Land Survey Field Book* (National Committee on Soil and Terrain 2009), which will guide the boundaries of survey transects. The landform unit classes comprise:

- watercourses – this includes stream channels and a 50 m corridor of land adjacent to the watercourses. Watercourse landform units are further divided into three categories: 1st and 2nd order streams, 3rd order streams and 4th order and above;
- crests – this includes hill crests, spurs, and ridges;
- hill slopes – this is further divided into two categories: very gentle to gently inclined slopes (representing areas suitable for camping activities) and slopes of moderate inclination and above (representing steeper terrain not typically suitable for open camp sites; and
- flats – this includes flat terrain including undulating plains, floodplains and terraces.

iii Sampling approach

a. Approach for solar arrays

The extent of survey across the project area will be weighted according to the aims of the survey. As the footprints for the three solar arrays are yet to be refined, the survey will proceed on the assumption that all of the project area (except areas already excluded or those excluded during further design work prior to the commencement of the survey period) has the potential to be developed, but also acknowledging that certain areas may be avoided.

The survey will focus on areas predicted to have high archaeological sensitivity to verify the accuracy of the predictive model and identify its implications for the development footprint. In general terms, areas to be targeted for high sensitivity will comprise:

- watercourses and level to gently inclined landforms within 200 m of streams for open camp sites, 4th order and above streams receiving particular emphasis;
- the land adjacent to Dangars Lagoon (southern area);
- areas of outcropping stone identified in the predictive model to have potential stone quarries, shelters, art or stone arrangements;
- areas with potential to have mature trees for modified trees; and
- areas identified by RAPs warranting inspection (to be updated after RAP review period).

Areas of moderate sensitivity for open camp sites will involve aiming to cover all watercourse landform units of 3rd order streams in the project area. The areas of low to moderate sensitivity for open camp sites include 1st and 2nd order watercourse landform units and will be surveyed to a lesser extent, meaning that possibly not all drainage depressions will be walked.

b. Approach for substations and BESS location

The proposed substations and potential BESS location have a more definable footprint (refer Figure 2) and represent where more intensive ground disturbance may occur (when compared to the solar arrays). As such, they will be surveyed more intensively than the general array areas despite not being in particularly sensitive locations. The locations of the footprints may be revised during the EIS.

c. Approach for linear infrastructure

The alignment of proposed linear infrastructure (such as transmission lines and roads) will be traversed during survey. However, their proposed location is not confirmed and may not be included in the initial stages of survey.

5.5 Test excavation

The requirement for an archaeological test excavation as part of the ACHA is yet to be determined. Test excavation programs are typically implemented after survey fieldwork in areas where potential archaeological deposits (PADs) have been identified. If test excavation is required, EMM plan to follow the Code (DECCW 2010a). Deviations from the Code may be required depending on the nature of any PADs identified and their location.

Archaeological test excavation may be necessary if sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the project (DECCW 2010a, p.24). The proposed archaeological survey will aim to firstly identify areas of higher archaeological potential for avoidance, but excavation may still be required depending on the nature of proposed ground disturbance and the location of the development footprint within the project area.

EMM welcomes input from RAPs during the review period of this document and during field survey about the suitability of excavation in particular areas, acknowledging that there may be limitations around culturally sensitive areas.

EMM will provide adequate notice and seek RAP and OEH feedback prior to undertaking any test excavation program.

5.6 Post fieldwork

After fieldwork, a draft ACHA report will be prepared by EMM. Each RAP will be invited to submit relevant information on Aboriginal heritage values which will be addressed in the report. Each group (or individual if not part of a group) will be issued with a draft report for review and comment within a 28 day timeframe. All comments will be addressed in the final report.

6 Meetings

Consultation meetings are useful to convey information about the project and ACHA results and to receive feedback and information from RAPs. EMM will be in contact with RAPs shortly to discuss the potential of an inception meeting prior to the survey.

It is anticipated that a meeting will be held after the draft ACHA is distributed to RAPs for feedback and discussion about appropriate mitigation, avoidance and management measures relating to Aboriginal cultural heritage.

7 Indicative timing

The following indicative timeframe is anticipated for the assessment. The timeframe is subject to change which may be influenced by changes in project design or additional requirements such as further survey or test excavation.

Table 1 Indicative timing

Stage	Timing
RAP response to presentation of information and methods (this letter)	Within 28 days of letter distribution
Field survey	As soon as possible (May or June)
Preparation of draft report for RAP review	August/September 2018
RAP consultation meeting about draft ACHA	During ACHA review period
Submission of final report to DPE	October 2018

8 What's next?

We look forward to receiving any response your party wishes to make about the methodology or any cultural information or protocols you would like to provide that may influence the project. Your response will be documented and considered as part of the ACHA. Please remember to respond prior to **1 May 2018.**

EMM will be contacting RAPs shortly with an additional letter to organise fieldwork participation from RAP representatives. Further information about the survey plan will be distributed prior to the survey.

9 Any questions or information?

Please feel free to contact me with any questions or queries about the project via email (provided below) or telephone on 02 9493 9541.

Yours sincerely,

Ryan Desic
Senior Archaeologist

rdesic@emmconsulting.com.au
0411 329 712

09 May 2018

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Re: New England Solar Farm: Request for Aboriginal fieldworkers and meeting proposal

Dear Registered Party,

1 Introduction

This letter is to invite you to apply to participate in survey fieldwork as part of the Aboriginal cultural heritage assessment (ACHA) for the New England Solar Farm. It provides details of the fieldwork participation. You must agree to the contractual arrangement to be eligible. This letter is also to invite members to attend a short on-site meeting on the first day of fieldwork prior to the survey. The meeting invite extends to all interested members regardless of whether they will be participating in the survey fieldwork.

The survey is anticipated to run from **21 May to 1 June 2018**. Depending on the number of interested Aboriginal fieldworkers, a roster system may be required.

Your party is invited to apply for one paid representative to participate in the field survey. Applicants must be willing to agree with the information provided below and satisfy the criteria regarding employment.

If applicants are sole traders or individuals, we will only accept applications from the sole trader or individual nominated as part of the registration.

If applicants are an organisation, please nominate one person who will be part of the field survey.

The aim of fieldwork participation is to assist in the archaeological investigation. As specified by the NSW Office of Environment and Heritage (OEH) guidelines, involvement in fieldwork is separate from the Aboriginal community consultation process. We will continue to consult with all registered parties regardless of the outcomes of the fieldwork application process.

2 Scope of work

The field survey aims are to understand the landforms within the project area, identify Aboriginal heritage values (including Aboriginal sites and areas of potential archaeological deposit), to inform the ACHA component of the environmental impact statement (EIS), including preparation of recommendations to manage potential impacts to Aboriginal sites and areas of archaeological potential.

The scope of work for field survey participation by registered Aboriginal parties (RAPs) is limited to involvement in field survey. No reports are requested as part of this arrangement. Reports submitted voluntarily are welcome, but are not part of this contractual arrangement. Separate to the scope of work

for field surveys, all RAPs will be issued with a draft ACHA report for review and comment and be invited to meet with EMM Consulting Pty Limited (EMM) and UPC Renewables Australia Pty Ltd (UPC) to discuss the project. Details on your involvement in these activities will be provided in due course.

3 Meeting and fieldwork dates

The pedestrian survey is proposed for **21 May to 1 June 2018** over two weeks (comprising 5 day working weeks). Fieldwork days will be from 7:30 am to 4 pm.

An on-site meeting will be held on the first day of fieldwork on **21 May at 7:30 am**. The meeting invite extends to all interested members regardless of whether they will be participating in the survey fieldwork on that day or otherwise. The meeting will provide a chance for all members to meet, provide cultural information, comment on the proposed methods and to ask questions about the project. It is anticipated that the meeting will be held for one hour.

The meeting point for the meeting and field survey will be provided prior to the fieldwork. Survey participants will need to be inducted and sign onto a safe work method statement (SWMS) prior to fieldwork. **Applications must be received by 16 May 2018** to ensure the field survey can commence within the scheduled timeframe.

4 Roles and responsibilities

The roles and responsibilities of EMM archaeologists, RAPs and UPC representatives (where required) during field surveys are outlined in Table 1. Specific work, health and safety responsibilities are included in the Safe Work Method Statement, which must also be signed prior to field surveys.

Table 1 Field survey roles and responsibilities

Team members	Roles and responsibilities
EMM archaeologists	• direct the field surveys; • record Aboriginal sites and environmental data; • oversee safety (refer to Safe Work Method Statement); • consider and respect cultural perspectives, views, knowledge and advice and record data and/or direct field surveys based on these outcomes; and • apply professional code of conduct at all times.
RAPs	• actively participate in field surveys, including assisting with Aboriginal site identification and recording where requested; • provide cultural perspectives, views, knowledge and advice to EMM archaeologists; • indicate areas of cultural significance (if known), including: - sites or places associated with ceremonies, spiritual/mythological beliefs and traditional knowledge, which date from pre-contact period and which may have persisted until the present time; - sites or places with historical associations, which date from the post-contact period and are remembered today (eg plant and animal resource use areas and known camp sites); and - sites or places of contemporary significance (apart from those areas for which Aboriginal objects remain), for which the significance has been acquired in recent times; • be fit for work and have suitable experience to assist on the archaeological survey; • adhere to all safety protocols provided in the Safe Work Method Statement; and • apply professional code of conduct at all times.
UPC representatives (where required)	• Provide general project oversight and in particular, coordinate site access with landowners; • where possible, assist by answering questions regarding the project; • adhere to all safety protocols provided in the Safe Work Method Statement; and

Table 1 Field survey roles and responsibilities

Team members	Roles and responsibilities
	• apply professional code of conduct at all times.

5 Code of conduct

Professional code of conduct is expected at all times from all participants. Harassment or other inappropriate behaviour is not acceptable. Professional code of conduct should be based upon principles of mutual respect (each member of the survey team has the right to have a say and be heard) and acknowledgement for the knowledge, skills and experience of the other members of the survey team and their contributions to the program.

Any person who behaves in a manner that is abusive, threatening or humiliating towards other members of the survey team or other parties (eg landholders) will be asked to leave immediately and will not receive any payment for work on that day.

Common courtesy towards all project members and in particular, to landowners providing site access, is expected.

6 Contractual arrangement

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7 Application process

If your organisation agrees to the above scope of work, roles and responsibilities, code of conduct and contractual arrangement you are invited to apply to participate in fieldwork. The following information must be presented with your application to be considered as part of the fieldwork team. One representative from each successful group will be present on the rostered survey days.

7.1 Fitness to work

Persons involved in field surveys must be fit to perform strenuous physical activity in areas of rugged terrain. It is expected that over 10 km will be walked each day. Persons with medical conditions that hamper physical activity should not participate for safety reasons. Surveys are designed in loops or other configurations which will not involve returning to vehicles for breaks. All food and water must be carried. Survey participants must not be under the influence of drugs or alcohol.

Field representatives should also be able to show evidence of their previous experience in archaeological field surveys. As a minimum requirement, field representatives must be able to identify a range of Aboriginal object and site types. This includes, but is not limited to:

- stone artefacts (and the ability to distinguish these from naturally occurring rocks);
- ceremonial areas;
- grinding stones and grinding grooves;
- rock shelters (including rock art); and
- scarred or carved trees.

Knowledge regarding areas of potential archaeological deposits is also welcome.

7.2 Insurance

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7.3 Safety

Each person who participates in the field survey will be required to read and sign on to EMM's Safe Work Method Statement prior to commencing the field survey.

Each day, each participant will be required to bring:

- hat with sun brim, sun block, safety glasses (or sunglasses that provide equivalent protection) and suitable clothing and footwear (ie high visibility shirt or vest, long sleeved shirt, long pants, wet weather gear, work gloves and steel-capped lace-up boots; no sneakers or running shoes);
- food and water sufficient for the day (at least 2 litres of water);
- pens, notebooks etc as required to satisfy your group's recording requirements; and
- a bag to carry your food, water and equipment.

The survey will cease if extreme weather (eg electrical storms or extreme wind, heat or cold) or other unsafe conditions (eg bushfires) occur. However, the survey will continue through light rain, and it is the responsibility of each survey member to bring adequate clothing in case of poor weather.

Should participants not have appropriate clothing they may not be able to participate in the survey.

8 Checklist

Does your application contain the following information?

- evidence of the nominated representative's previous experience in archaeological field surveys;
- evidence of workers compensation and public liability insurance where applicable or a statement declaring they are not required; and
- the completed sign off form attached.

9 Close

Applications must be received by 16 May 2018 to ensure the field survey can commence within the scheduled timeframe.

Please remember that an on-site meeting will be held on **21 May 2018** on the first day of fieldwork. An invitation for this meeting extends to all RAP members regardless of whether you will be participating in fieldwork on the day. Please RSVP by **18 May 2018**.

Please do not hesitate to contact me if you have any questions or comments. I can be contacted on 02 9493 9541 (or 0411 329 712) or via email (email address provided below). We look forward to working with you on this project.

Ryan Desic
EMM Consulting
PO Box 21
St Leonards NSW 1590
Phone: 02 9493 9541
Fax: 02 9493 9599
Email: rdesic@emmconsulting.com.au

09 May 2018: New England Solar Farm Survey Employment Agreement

I have reviewed and agree to the terms and conditions provided in this letter relating to employment services and criteria, safety, fitness for work, payment, code of conduct and insurance.

Name: **Date:** **Signed**

Memorandum

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21 May 2018

To Registered Aboriginal Parties
From Ryan Desic

Subject New England Solar Farm - Aboriginal consultation meeting 21 May 2018

Dear Registered Party,

1 Agenda

1.1 Welcome to Country

1.2 Purpose of this meeting

- To present information about the New England Solar Farm and assessment methods.
- To allow Aboriginal parties to identify, raise and discuss their cultural concerns, perspectives and assessment requirements (if any).
- To gather any cultural information prior to the survey that may guide our fieldwork.

1.3 Project overview

1.4 Roles, functions and responsibilities

1.5 Aboriginal consultation

1.5.1 Completed to date

- Identification and registration of stakeholders.
- Presentation of information and assessment methods.

1.5.2 Ongoing

- Request for cultural information about the project area (ongoing).
- Ongoing correspondence to discuss cultural information and management measures.
- Review of draft Aboriginal cultural heritage assessment (ACHA) report.

1.6 Aboriginal heritage assessment method

- Current survey aimed at avoidance of Aboriginal sites and refinement of disturbance footprint.

1.7 Request for cultural information about the project area

1.8 Topics to be discussed at a later date

- Impact assessment and management measures.
- Requirement for test excavation.

1.9 Questions and feedback

A.4 Stage 4 – issue of draft ACHA and responses

This section contains the following documents:

- letter detailing draft ACHA review process;
- letter inviting RAPs to a consultation meeting regarding the draft ACHA;
- presentation slides and meeting minutes from the second consultation meeting on 19 October 2018;
- RAP feedback from draft ACHA report.

Ryan Desic

From: Ryan Desic
Sent: Wednesday, 15 August 2018 6:12 PM
Cc: David Richards; Ryan Desic
Subject: New England Solar Farm ACHA update

Dear Registered Party,

On behalf of EMM and UPC I would like to thank all of the fieldworkers who participated in Stage 2 of the archaeological survey. It was a great experience and was kept interesting with good discussion and good finds.

I would like to advise you of the next steps in the process. EMM is currently digesting the data and working with UPC to discuss preliminary management measures for the sites Identified during survey. Each party will have the opportunity to provide input on management measures down the track, but we are in the process of deciding the best way forward on a couple of points prior to issuing the draft report. The draft report will contain more detailed information, but to stay proactive, I have identified some points that EMM will raise with UPC based on discussions with the Aboriginal community so far:

1. Although the primary aim is avoidance of Aboriginal sites, some sites of lower archaeological significance (such as isolated or low density artefact scatters in ploughed fields) occur in the project footprint. Based on the outcomes of discussion with some community members, it was considered appropriate in principle for such sites to be collected in the future for storage and use as educational tools at the Armidale cultural centre. We would discuss the specifics of storage, signage and display at a later date.

2. Fencing for grinding groove sites: it also came up in discussion that the Aboriginal community may wish to have grinding groove sites fenced (notably the large grinding groove site) to protect it against potential livestock damage. We would like you to carefully consider this option and what scope of fencing you would envisage. Please note that fencing presents its own set of issues as it would then require weed management within the fenced boundary, which could mean regular human access.

3. I have had some discussions with Les Ahoy in response to an email about maintaining cultural connection to the project area. Les expressed that it would be good to have Aboriginal community access to a select number of the more significant sites for use as an educational tool and also to experience some of the more intangible aspects of cultural heritage by visiting the landscape. We are yet to discuss this option with UPC and landholders so no commitments can be made at this stage, but it will be flagged for further discussion.

4. We would like to have Aboriginal community input into providing some 'welcome to country' text to be included upfront of the assessment report. This would only need to be short (I'm imagining a page or less). A couple of people have mentioned that text similar to Colin Ahoy Senior's welcome to country speech would be an appropriate way forward. I would like to leave this with the Aboriginal community to decide who is best to provide this information.

5. The Aboriginal community has expressed that they would like direct involvement in project post-approval management tasks including artefact collection and site protection measures (eg fencing and signage). EMM will communicate this to UPC and work on achieving positive outcomes.

If you have any feedback or would like to raise anything else at this point, please respond to this email. We will be talking to UPC next week, so it would be great to have any comments by **Monday 20/08/2018** next week.

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

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planning | environment | acoustics | ecology | heritage | groundwater | soils, closure, rehab | gis

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Please note that EMGA Mitchell McLennan Pty Limited has changed its name to EMM Consulting Pty Limited (simply refer to us as EMM). Email and website addresses have been changed to reflect this. All other details including ABN, bank details etc remain unchanged.

Please consider the environment before printing my email.

This email and any files transmitted with it are confidential and are only to be read or used by the intended recipient as it may contain confidential information. Confidentiality or privilege is not waived or lost by erroneous transmission. If you have received this email in error, or are not the intended recipient, please notify the sender immediately and delete this email from your computer. You must not disclose, distribute, copy or use the information herein if you are not the intended recipient.

Ryan Desic

From: Ryan Desic
Sent: Thursday, 16 August 2018 5:27 PM
To: Colin Ahoy
Subject: Re: New England Solar Farm ACHA update
Attachments: image001.png

Thanks Colin,

Yes some sites will need to be collected. However, no AHIP is needed because the project is a State Significant Development. But it is basically the same process - we will develop a management plan after project approval which will detail how the sites will be collected and where they will be stored etc. The keeping place sounds like a good idea and has been mentioned by other RAPs.

Regards,

Ryan

Sent from my iPhone

On 15 Aug 2018, at 8:27 pm, Colin Ahoy

> Thank you Ryan,
> From Nunawanna members and community members we support paragraphs 1,2,3,4
> of the notes that you have sent
> I have a question if we salvage some of the artifacts that the site workers identified
> do we need to go through the process of doing a AHIP if this will be the process then I to
> would like to see these stored at the Aboriginal Keeping and cultural centre in Armidale.
> If our members have some more recommendations in relation to this project I will ensure that I
> contact you.
>
> Cheers
>
> Colin Ahoy
> Aboriginal Elder In Residence
> Oorala Aboriginal Student Support Centre
> University of New England
>
> ---
>
> **From:** Ryan Desic <rdesic@emmconsulting.com.au>
> **Sent:** Wednesday, 15 August 2018 6:12:04 PM
> **Cc:** David Richards; Ryan Desic
> **Subject:** New England Solar Farm ACHA update
>
> Dear Registered Party,
>
> On behalf of EMM and UPC I would like to thank all of the fieldworkers who participated in Stage 2 of the archaeological survey. It was a great experience and was kept interesting with good discussion and good finds.

Ryan Desic

From: rhonda kitchener
Sent: Friday, 17 August 2018 1:49 PM
To: Ryan Desic
Subject: Re: New England Solar Farm ACHA update

Hi Ryan,

these are my thoughts on some of the inputs into the draft report.

Yes i agree with culture connection to the project area, but i do have concerns about opening it up to the general Aboriginal community. i would like to speak to the land holders and UPC about these issues further.

I would like an Aboriginal women to do acknowledgement to country to be included in the assessment report as the theme is " because of her we can".

The Aboriginal stake holders should be the only ones included in managing task e.g fencing and artefact collection and site protection as the sites are male and female areas, as the stake holders have been the ones involved from the start of the project.

Thanks Rhonda

From: Ryan Desic <rdesic@emmconsulting.com.au>
Sent: Wednesday, 15 August 2018 6:12 PM
Cc: David Richards; Ryan Desic
Subject: New England Solar Farm ACHA update

Dear Registered Party,

On behalf of EMM and UPC I would like to thank all of the fieldworkers who participated in Stage 2 of the archaeological survey. It was a great experience and was kept interesting with good discussion and good finds.

I would like to advise you of the next steps in the process. EMM is currently digesting the data and working with UPC to discuss preliminary management measures for the sites Identified during survey. Each party will have the opportunity to provide input on management measures down the track, but we are in the process of deciding the best way forward on a couple of points prior to issuing the draft report. The draft report will contain more detailed information, but to stay proactive, I have identified some points that EMM will raise with UPC based on discussions with the Aboriginal community so far:

1. Although the primary aim is avoidance of Aboriginal sites, some sites of lower archaeological significance (such as isolated or low density artefact scatters in ploughed fields) occur in the project footprint. Based on the outcomes of discussion with some community members, it was considered appropriate in principle for such sites to be collected in the future for storage and

Ryan Desic

From: Cheryl Kitchener
Sent: Wednesday, 15 August 2018 6:44 PM
To: Ryan Desic
Subject: Re: New England Solar Farm ACHA update

Evening Ryan,

Thanks for this information I'll speak to Steven to discuss management issues.

A couple of comments if I may:

An acknowledgment of Country would be more appropriate than Welcome to Country and I feel that this should be drafted by several Stakeholders both male n female.

I too am concerned with fencing around the grinding grooves but I'll consult with other stakeholders before I make comments on this issue and

Contact to sites are important as long as it is managed in a safe and cultural respectful manner again I have concerns but I will consult with other stakeholders before I make final comment.

This project has provided to Aboriginal Owners n other stakeholders with some exciting finds both of cultural and archaeological significance, the feedback that I have been given in respect to your involvement in this project is one of high regard. Thank you Ryan, it's refreshing to work with open minded and professional archaeologists who respect the stakeholders Cultural Authority.

Once I've had an opportunity to consult with other stakeholders I'll contact about management issues

Regards

Cheryl Kitchener

On Wed, 15 Aug 2018 at 6:12 pm, Ryan Desic <rdesic@emmconsulting.com.au> wrote:

> Dear Registered Party,
>
> On behalf of EMM and UPC I would like to thank all of the fieldworkers who participated in Stage 2 of the archaeological survey. It was a great experience and was kept interesting with good discussion and good finds.
>
> I would like to advise you of the next steps in the process. EMM is currently digesting the data and working with UPC to discuss preliminary management measures for the sites Identified during survey. Each party will have the opportunity to provide input on management measures down the track, but we are in the process of deciding the best way forward on a couple of points prior to issuing the draft report. The draft report will contain more detailed information, but to stay proactive, I have identified some points that EMM will raise with UPC based on discussions with the Aboriginal community so far:

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--

Ryan Desic

From: Ryan Desic
Sent: Friday, 28 September 2018 6:39 PM
To:

Cc: Killian Wentrup; Tim Kirk; David Richards; Claire Burnes
Subject: New England Solar Farm Draft ACHA for RAP review

Dear registered party,

Introduction

Thank you for your continued participation in the Aboriginal cultural heritage assessment (ACHA) for the New England Solar Farm (NESF) project. We appreciate your keen involvement and assistance with the survey fieldwork and knowledge sharing. We are now up to the next stage of consultation for the project which is providing the draft ACHA to RAPs for their review and comments.

An innovative approach to help in your review

EMM on behalf of UPC are in the process of finalising an interactive **web map** which is an interactive online tool that has been prepared as an accompaniment to the draft ACHA. Based on consultation to date, we understand that access to information about the identified Aboriginal sites is a high priority for the local community as a learning and educational tool. Accordingly, the web map will be an online resource for RAPs to view:

- a site's location;
- access photos linked to the site location; and
- review draft management measures against individual sites.

This approach will provide a better understanding of a site's location and contents over the conventional approach of only having static figures for review.

Please note that the boundary of the development footprint will not be provided in the web map due to online security considerations; nevertheless, the development footprint is provided in figures in the draft ACHA report.

We anticipate to provide you the link to this web map by **early next week.**

Notes for your review and comment on the draft ACHA

If you have specific comments for the draft ACHA document, please identify the section heading and page number so that we know specifically which part of the document to address. Our preference is for you to provide your comments in writing via email or letter. You will note that there are greyed out sections of the document that will be updated based on further consultation and amended for the final report.

Please note that appendices are in preparation and are not all are attached. But additional information about sites can be provided upon request. Notably, the site significance summaries, impact and management measures are provided in Appendix D (draft only).

When to respond by

If you wish to comment on the draft ACHA, please provide your consolidated comments within 28 days (ie by **26 October 2018)**. If you are having trouble responding within this timeframe please let us know early so that we can consider alternative options.

Upcoming consultation meeting

EMM and UPC would like to discuss the draft ACHA with RAPs in person at a consultation meeting in Uralla. We anticipate this meeting may be held on either Thursday **18 or** Friday **19 October 2018 (date to be confirmed).** We will confirm this date shortly. Please advise if there are any issues around the proposed dates.

Downloading the draft ACHA document

The document is available to download using the following link:

https://spaces.hightail.com/receive/BW0ZHITgZe

Closing

Please do not hesitate to contact me on my details below for any matters regarding the project or if you have any difficulties in downloading or reading the documents.

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

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Ryan Desic | Senior Archaeologist

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Ryan Desic

From: Ryan Desic
Sent: Tuesday, 9 October 2018 9:27 AM
To:
Cc:
Subject: Invitation for Aboriginal consultation meeting 18 October, re: New England Solar Farm ACHA J17300

Dear registered party,

EMM on behalf of UPC would like to invite members from your party to a consultation meeting to discuss the management of the Aboriginal cultural heritage values related to the project. Hopefully by now you have had some time to review the report and webmap to identify any matters you wish to further discuss. Attendance is voluntary. The details of the meeting are as follows:

Meeting date: Thursday 18 October 2018 (note: the date may change pending personal commitments for a couple of registered parties, but we are proceeding with the above date in the interim).
Time: 9 am to 12 pm (although duration may be shorter).
Place: Armidale Bowling Club located at 92-96 Dumaresq St, Armidale NSW 2350.
RSVP: Friday 12 October if possible. Please provide the names of the people from your party that you anticipate to attend the meeting.

Refreshments will be provided.

Please note that we would still appreciate comments in writing in addition to any matters raised at the meeting.

Reminder:

My colleague David sent a link to the web map last week which is available at the link below:

Please let me know if there are any issues or questions surrounding the webmap.

I look forward to seeing you at the meeting.

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

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New England Solar Farm

Aboriginal Cultural Heritage Assessment

Review of assessment and proposed management of sites

UPC Renewables™

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Acknowledgement

Before we begin the proceedings we would like to acknowledge and pay respect to the traditional owners of the land on which we meet.
I invite a community-nominated person to offer a Welcome to Country…

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Agenda

- Introduction and meeting aims
- Summary of results
- Impact assessment
- Proposed management measures
- Questions

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Introductions

- UPC Renewables Australia
  - Killian Wentrup (Head of Solar Development)
  - Tim Kirk (Project Development Manager)
- EMM
  - Ryan Desic (Senior Archaeologist)
  - David Richards (Environmental Scientist – Project Coordinator)

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Meeting aims

- To provide a summary of the assessment.
- We are looking for your feedback on the draft report and to answer any questions you may have.
- We will acknowledge all feedback given today; however, we may not be able to give final commitments today.
- All relevant feedback and comments will be addressed in the final report.

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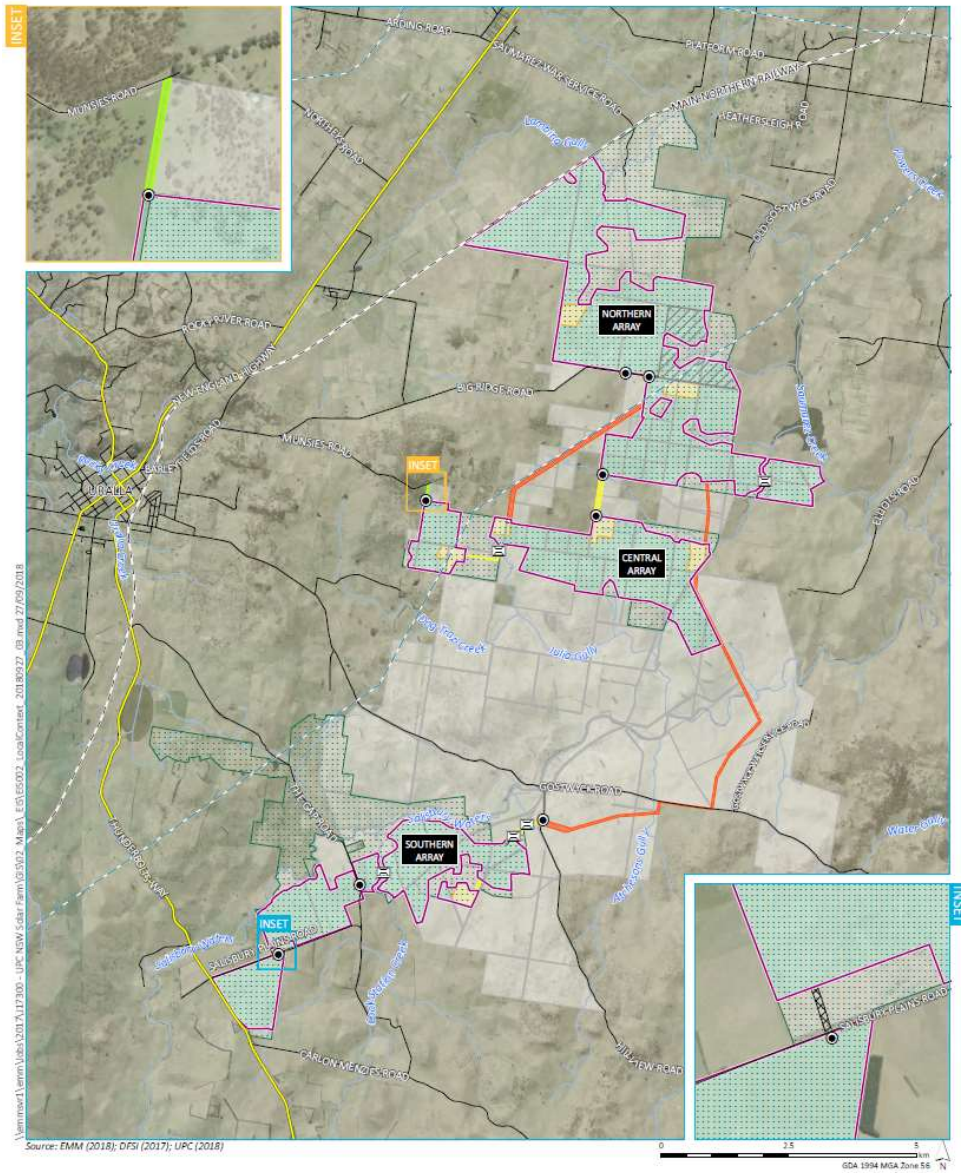
Project overview



KEY

- 330 kV transmission line
- Rail line
- Main road
- Local road
- Watercourse/drainage line
- Project boundary
- Study area

Development footprint

- Solar array
- Potential ETL easement
- Potential site access corridor
- Potential site access/ETL easement
- Potential substation/BESS footprint
- Potential underground cabling
- Potential creek crossing
- Proposed primary site access point
- Potential site for construction accommodation village

Local context and study area

New England Solar Farm
Aboriginal cultural heritage assessment
Figure 1.2

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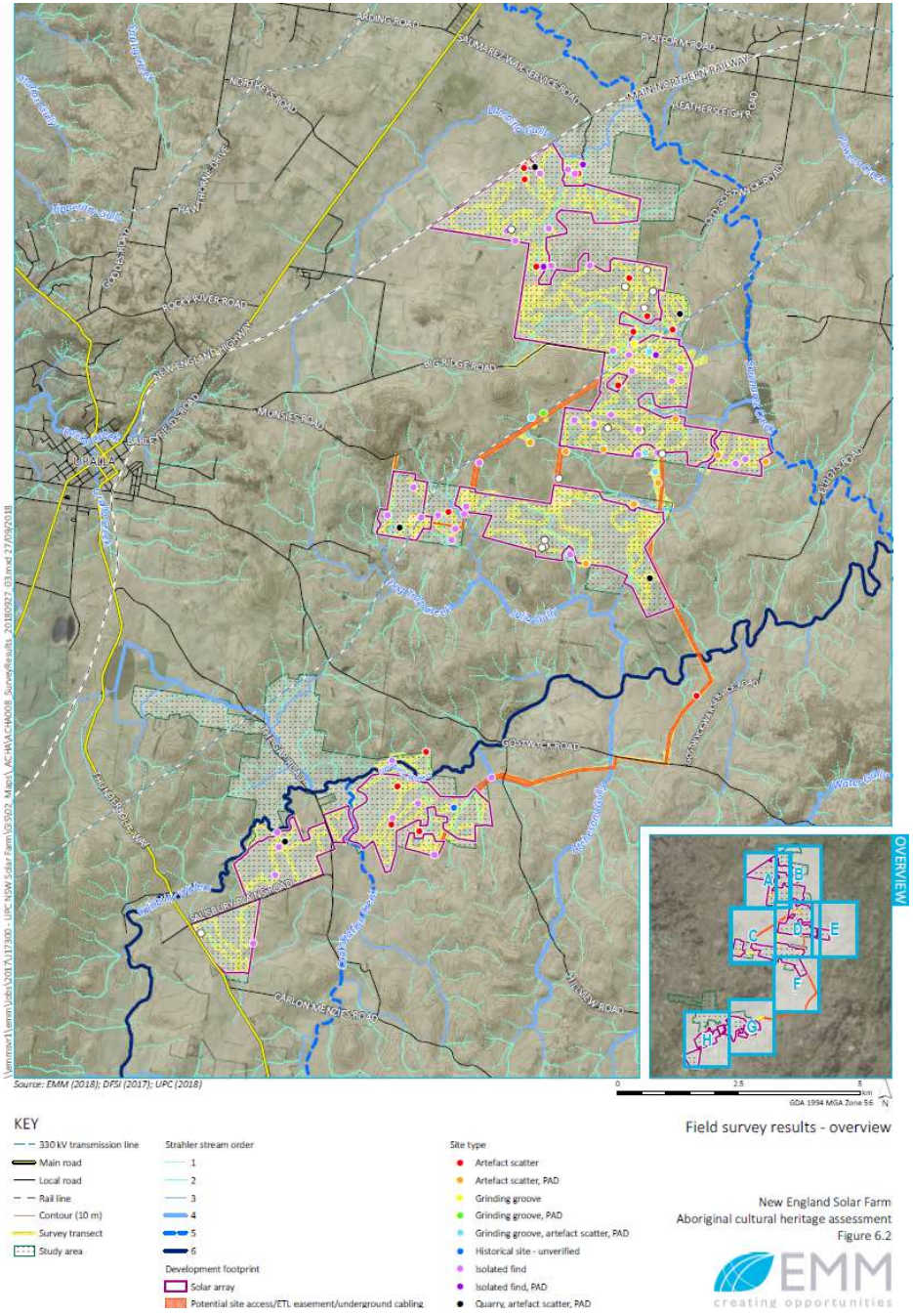

Survey overview

- Archaeological survey completed in two stages.
- Survey conducted over 19 days.
- Survey comprised 155 walking transects based on landforms.
- Approximately 247 km was walked by each survey participant.

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Sites and significance

- Survey team identified 96 sites during the 19 day survey (including one historical site).
- Four sites of high significance (grinding grooves).
- 31 sites of moderate significance (includes open camps with PAD, quarries, isolated grooves and scar trees).
- 60 sites of low significance (includes isolated artefacts, small scatters and ambiguous tree scars).

Scientific significance frequency by type					
	Significance level				
Site type	High	Moderate	Low	Undetermined	Total
Artefact scatter		4	13		17
Artefact scatter, PAD		8			8
Grinding groove		1			1
Grinding groove, artefact scatter, PAD	3	1			4
Grinding groove, PAD	1				1
Historical site - unverified				1	1
Isolated find		1	42		43
Isolated find, PAD		3			3
Quarry, artefact scatter, PAD		5			5
Scarred tree		8	5		13
Total	4	31	60	1	96

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Site examples: open artefact sites

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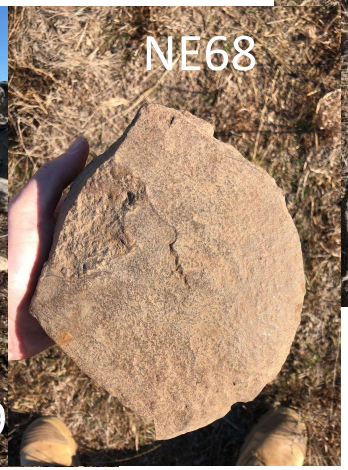
Grinding grooves



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Scar trees


NE23


NE39


NE96


NE67

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Quarries

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NE57: dry stone walls

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Impact assessment

- UPC and EMM have worked closely together and in consultation with RAPs to refine the development footprint and avoid sites where possible.
- Out of the 96 sites identified for the project, 49 sites will be avoided and 37 sites will be impacted to some degree.
- Impacts are currently undetermined for 10 sites (seven of moderate significance and three of low significance).

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Management measures

- All sites relating to the project will be managed in an Aboriginal cultural heritage management plan (ACHMP).
- The ACHMP will detail the following:
  - all Aboriginal sites identified during the archaeological investigation for the project;
  - management measures and their progress towards completion;
  - measures to ensure ongoing consultation and involvement of project RAPs;
  - potential RAP access arrangements for a selection of significant sites for educational purposes;
  - protocols for newly identified sites;
  - protocols for suspected human skeletal materials ;
  - protocols for the ongoing care of salvaged Aboriginal objects within a keeping place; and
  - provisions for review and updates of the ACHMP.

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Site specific management

- Avoidance: A total of 49 sites out of 96 sites will be avoided by the project (to be confirmed based on the outcomes of the 10 sites where impacts are currently undetermined).
- Collection: All surface artefact sites (artefact scatters and isolated finds) impacted by the project will be collected. This will involve collecting the entire visible contents of 30 isolated artefacts and seven artefact scatters.
- Keeping place for collected sites: nominated place is the Armidale and Region Aboriginal Cultural Centre and Keeping Place (96-104 Kentucky Street, Armidale NSW).
- RAP access arrangements: UPC is exploring the possibility to allow limited RAP access to grinding groove sites, potentially including NE09 and/or NE68 as an educational tool for the Aboriginal community. Access arrangements would be subject to strict notification and safety requirements, which would be detailed in the ACHMP.

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Additional assessment requirements

- Aboriginal scar tree management:
  - Five trees are within the development footprint and require expert assessment (NE45, NE61, NE49, NE47 and NE67).
  - If these scars are Aboriginal made, UPC will firstly seek to avoid.
  - If they still cannot be avoided, UPC will consult with RAPs about management.
- Additional tree survey requirements:
  - Further survey targeting any missed mature native trees will be completed.
  - Priority will be to avoid any newly identified scar trees.
  - If any cannot be avoided, UPC will consult with RAPs about management.

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Additional assessment requirements

- Potential archaeological deposits (PADs) where impacts are not yet determined:
  - There are some parts of the development footprint where UPC may need to maximise the footprint to achieve development goals.
  - There are five sites where impacts are currently unknown, namely:
    - NE15 – Artefact scatter – northern array area
    - NE27 – Artefact scatter, PAD – northern array area
    - NE33 – Quarry, artefact scatter, PAD – southern array area
    - NE70 – Artefact scatter, PAD – access corridor – central to northern array
    - NE83 – Isolated find, PAD – northern array area
  - If UPC determine that these sites may be impacted, then test excavation will occur to establish subsurface potential of the PADs and guide appropriate management.

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Have your say

- Perform a review of assessment and management options.
- All feedback is requested by **26 October 2018.**
- **Questions?**

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Contacts

- Ryan Desic
  - 02 9493 9541
  - 0411 329 712
  - rdesic@emmconsulting.com.au

- EMM Consulting Office:
  - 02 9493 9500 (general office number)
  - 02 9493 9599 (fax)
  - PO Box 21, St Leonards, NSW 1590
  - Suite 1, 20 Chandos St, St Leonards, NSW

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Thank you for your time today

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Ryan Desic

From: Cheryl Kitchener
Sent: Friday, 5 October 2018 2:20 PM
To: Ryan Desic
Subject: Re: New England Solar Farm Draft ACHA for RAP review
Attachments: image001.png

Good Afternoon Ryan,

I am currently reviewing the report and would like to say up front that I disagree with the acknowledgement to Country.

Anaiwan Country is described totally wrong, I would therefore leave this information out of the document.

It is well known that Anaiwan Country is on the tablelands.

I would therefore, like to suggest that we state:

- "We acknowledge the Anaiwan People as the Traditional Custodians of the land of the Anaiwan Nation, we recognise their continuing connection to land and waters of this region. We pay respect to Elders past, present and emerging Leaders in our community.
-
- We would like to also acknowledge to the cultural protocols of the Anaiwan People when researching Cultural Heritage within the Anaiwan Nation and pay respect to many Male and Female Elders who contributed to the this project."

I will finish my review, and keep you updated with further comments.

Regards

Cheryl Kitchener
0431519607

On Fri, Sep 28, 2018 at 6:38 PM Ryan Desic <rdesic@emmconsulting.com.au> wrote:

> Dear registered party,
>
> **Introduction**
>
> Thank you for your continued participation in the Aboriginal cultural heritage assessment (ACHA) for the New England Solar Farm (NESF) project. We appreciate your keen involvement and assistance with the survey fieldwork and knowledge sharing. We are now up to the next stage of consultation for the project which is providing the draft ACHA to RAPs for their review and comments.

Memorandum

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St Leonards, NSW, 1590

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19 October 2018

To	Registered Aboriginal Parties
From	EMM Consulting Pty Limited
Subject	New England Solar Farm Aboriginal consultation meeting – review of draft assessment report

1 Introduction

The following presents the meeting minutes of the second Aboriginal consultation meeting for the New England Solar Farm project. The meeting was held during the review period for the Aboriginal cultural heritage assessment (ACHA) at Armidale Bowling Club (Duval Room) on Friday 19 October 2018. The topics discussed are presented in the attached meeting slides and areas of further discussion are presented in Table 3.

2 Attendees

Table 1 Meeting attendees

Name	Organisation	Position on project
Steve Ahoy (SA)	Steve Ahoy Consultants	Registered Aboriginal Party
Colin Ahoy Senior (CA Snr)	Nunawanna Aboriginal Corporation	Registered Aboriginal Party
Colin Ahoy Junior (CA Jnr)	Nunawanna Aboriginal Corporation	Registered Aboriginal Party
Rhonda Kitchener (RK)	Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants	Registered Aboriginal Party
Bruce Cohen (BC)	Armidale and New England Gumbaynggirr Descendants	Registered Aboriginal Party
Les Townsend (LT)	Local elder knowledge holder (no organisation)	Registered Aboriginal Party
Ryan Desic (RD)	EMM Consulting Pty Ltd	Archaeologist – Aboriginal cultural heritage assessment lead
David Richards(DR)	EMM Consulting Pty Ltd	Environmental Scientist –Environmental assessment coordinator
Killian Wentrup (KW)	UPC Renewables Australia	Head of Solar Development
Tim Kirk (TK)	UPC Renewables Australia	Project Development Manager

Table 2 Apologies

Name	Organisation
Cheryl Kitchener	Culturally Aware
Les Ahoy	Nganyawana Clan Group

3 General proceedings

- Meeting start time 9 am.
- Welcome to Country and minute of silence (CA Sr and RK).
- Agenda (RD):
  - Introduction and aims
  - Summary of results from archaeological investigation
  - Impact assessment
  - Proposed management measures
  - Questions
- Introductions (all).
- Meeting aims (RD).
- Project overview (KW).
- Survey overview (RD).
- Sites and significance including site examples (RD).
- Impact assessment (RD).
- Management measures (RD guided open discussions).
- Additional assessment requirements (RD guided open discussions).
- Stated that all feedback was needed by 26 October and that EMM would be contacting them about additional assessment requirements such as scar tree survey.
- Meeting end time 11:10 am.

4 Meeting minutes

Table 3 Meeting minutes

Topic	Discussion points	Response/outcome
Aboriginal employment opportunities	SA and BC requested UPC to provide employment opportunities for local Aboriginal people. This was raised at the start of the meeting but was deferred until the end of the meeting where it was discussed further. Note that the requested employment opportunities in this instance related to jobs for the construction, operation and maintenance of the solar farm rather than	RD noted that the focus of this meeting was to discuss the management of Aboriginal cultural heritage values and not general employment. As such, commitments about general employment will not be included or linked to the management measures in the ACHA. Notwithstanding, KW explained the following in relation to general employment opportunities: • UPC and the lead contractor will discuss employment opportunities with the community at a later date;

Table 3 Meeting minutes

Topic	Discussion points	Response/outcome
	specifically for cultural heritage management.	• UPC acknowledged that there will be opportunities from a local level; however a large contractor will be required to manage the project (eg UGL, Downer); • at a later date, UPC will discuss how the local Aboriginal community may be given the opportunity to be employed or have opportunity to tender for subcontracting opportunities as part of the project; • UPC suggested that the community develop a database or similar of locals interested in employment and subcontracting opportunities; and • the community would like to see opportunities for training, as well as ongoing employment (eg working with fencing contractors to learn the skills and then implement them).
Management and access for significant grinding groove site NE09	**RD** asked registered parties to describe how they wanted site NE09 to be managed, noting it is the most significant site near the development footprint and warrants special consideration. Matters raised in the draft ACHA were around fencing, maintenance and continued access to NE09. In addition, another grinding groove site NE68 was flagged as another site for continued access.	Registered parties requested the following for the site: • Ideally the site would be used as an educational tool for the local Aboriginal community. This would involve periodic escorted visitations to the site. • Registered parties would like to see the boundaries of the site fenced off to prevent damage by animals and/or continued farming. • Registered parties would like to have opportunities for the maintenance of the site once it is fenced (eg weed management). **KW** noted that UPC and the relevant landholders are comfortable with fencing for NE09 and some form of continued access to NE09 and NE68 once construction activities on site are completed. Some particulars to be detailed in the project Aboriginal heritage management plan (AHMP) would be around: • UPC needing to be responsible for maintaining access throughout ongoing operations, noting that there will need to be WHS procedures for any access given that the site will be a high voltage electrical facility involving moving plant and vehicles etc; • the specifics around the access route through site, the need for sign-in at the security gate, safety inductions and so on will need to be detailed as part of any access arrangements; • UPC noted that during construction there will be difficulties granting access and therefore access is unlikely to occur during project construction; • UPC/EMM also acknowledged the opportunity to access NE68; and • details of the access arrangements/procedures will be provided in the AHMP.
Keeping place for recovered	**RD** summarised that registered parties had nominated the Armidale and Region Aboriginal Cultural Centre and Keeping	• Registered parties confirmed that they would like collected objects to be displayed at the nominated place;

Table 3 Meeting minutes

Topic	Discussion points	Response/outcome
Aboriginal objects	Place as the keeping place for any Aboriginal objects recovered under an approved AHMP for the project. **RD** asked if the registered parties were still comfortable with this approach and whether they would like to describe how they would like to see the collection managed.	• Registered parties requested that the objects be used as educational tools in a cabinet or similar with details of where they were found; • BC noted that there is potential for scarred trees to be displayed as well at this Keeping Place if any were to be removed from the development footprint; • LT mentioned that McCrossins Mill and Uralla Visitor Information Centre also have space for Aboriginal sites to be displayed; • Registered parties acknowledged that it may be appropriate for sites to be placed in both McCrossins Mill/Uralla Visitor Information Centre and Armidale and Region Aboriginal Cultural Centre and Keeping Place, but further discussion around this would take place during the AHMP; • SA noted that any recovered axes should be displayed together as a collection; and • UPC and the registered parties will work together to coordinate this with potential for an official opening following completion of salvage.
Interactive web map	RD noted that registered parties expressed an interest in the value of the interactive web map provided to them during the ACHA review period. RD asked RAPs how they would like to use the web map in the future.	• Registered parties noted the value of maintaining the web map as an educational tool, possibly to be used at the keeping place in Armidale in conjunction with the recovered objects. • EMM will investigate the costs associated with the maintenance of this web map. The use of the web map would be detailed in the AHMP and it would be subject to review at nominated periods..
Aboriginal scar tree management options	RD and KW expanded on 9.4.1 of the draft ACHA about seeking expert assessment for five scarred trees which are ambiguous examples. RD asked if that any of these five trees are of Aboriginal origin, then would it be appropriate to salvage if avoidance was unfeasible for the project. RD showed each of the five sites (NE45, NE47, NE49, NE61, NE67) on the web map, providing photo examples.	• Registered parties agreed that any of the five trees confirmed to have Aboriginal scars would be suitable for salvage, curation and display at the proposed keeping place. • BC noted that the director of the keeping place has said they have room for a scar tree segment. • Registered parties agreed that the scars will need to be verified prior to display to ensure that they are appropriate representations. • Colin Ahoy junior said regardless of the outcome for NE49, he would like to have it removed as it is fallen, cut in half and out of context anyway. • Registered parties nominated Archaeologist Mal Ridges as a scar tree specialist that may be able to assist. They also noted John Appleton may be appropriate for a second opinion. • UPC agreed to follow the RAP's suggested approach. However, the engagement for a second opinion would only be required if registered parties are not satisfied with the outcome of the first expert assessment.
Additional survey for scar trees	RD explained additional survey for scar trees as presented in Section 9.4.1 of the draft ACHAR.	Registered parties agreed to the approach in principle. EMM will confirm timing and estimated length of additional survey and communicate with UPC and the

Table 3 Meeting minutes

Topic	Discussion points	Response/outcome
	RD explained that this will be completed prior to the submission of the response to submissions document RTS.	community to coordinate logistics and confirm how many representatives from the community will attend.
Undetermined impacts to sites with PAD	RD explained that UPC have not yet determined if the project will need to impact sites NE15,NE27,NE70, NE83 and NE33) as per section 9.4.2 of the draft ACHA. EMM noted that UPC will need to resolve the design of the project within the vicinity of these sites prior to early 2019 to ensure any required test excavation is completed prior to submission of the RTS. RD presented the locations of these sites on the web map and showed relevant pictures.	• Registered parties supported a test excavation program. • SA raised concern over potential impacts to unidentified sites during ground disturbance works, with specific reference to the land surrounding site NE70 where an access track is proposed nearby. • SA stated that monitoring of some areas such as NE70 may be appropriate to salvage artefacts. • RD stated that monitoring was not an archaeological method or approach and would not be appropriate in areas where objects of significance (warranting salvage or conservation) may occur. RD explained that test excavation is the most appropriate method for such areas as it is a controlled method endorsed by OEH. • Monitoring would only be appropriate in theory where no salvage archaeological investigation was warranted. The aim of monitoring in this instance would be to collect any residual artefacts with low archaeological significance but still of value to the Aboriginal community. • EMM and UPC noted that they would revisit the necessity for any monitoring after the areas for test excavation are established and if monitoring would be appropriate based on the outcomes of test excavation.
Salvage of NE10 and NE13 outside the development footprint of the northern array	RD explained that although sites NE13 and NE10 are outside of the development footprint they may be at risk of eventual loss from continued use of existing farm tracks. RD asked if registered parties would prefer to leave the objects at their currently location or possibly collect them as part of the AHMP.	• • RD noted that he would have to consult with OEH over the appropriateness of collection for these objects in this circumstance.

Ryan Desic

From: Ryan Desic
Sent: Thursday, 25 October 2018 2:51 PM
To:

Subject: RE: New England Solar Farm Draft ACHA for RAP review

Dear Registered Party,

Thank you to all those who attended the consultation meeting last Friday. We will respond to all feedback given at the meeting in the final report.

This email is just to remind registered parties that the review period for the draft ACHA report will close tomorrow to allow for the report to be finalised. As such, if you have any further comments you wish to submit in writing please do so by the end of tomorrow.

I hope you have a great weekend,

Regards,

Ryan Desic | Senior Archaeologist

T 02 9493 9500 | **D** 02 9493 9541 | **M** 0411 329 712 | **F** 02 9493 9599

Ground Floor, Suite 01, 20 Chandos Street, St Leonards NSW 2065

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www.emmconsulting.com.au

planning | environment | acoustics | ecology | heritage | groundwater | soils, closure, rehab | gis

Please note that EMGA Mitchell McLennan Pty Limited has changed its name to EMM Consulting Pty Limited (simply refer to us as EMM). Email and website addresses have been changed to reflect this. All other details including ABN, bank details etc remain unchanged.

Please consider the environment before printing my email.

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From: Ryan Desic
Sent: Friday, 28 September 2018 6:39 PM

Comment by Cheryl Kitchener - Culturally Aware Aboriginal Heritage Consultancy provided on 26 October 2018 via telephone. The following notes are based on Ryan Desic's notes for that conversation.

Section 9.4.4 (i) Discovery of new Aboriginal sites

Cheryl expressed concern that the procedure for identifying new Aboriginal objects during construction was missing particular steps. Cheryl stated that is it unlikely that people untrained in the identification of Aboriginal objects (eg machine operators during construction) would be able to identify previously unrecorded Aboriginal objects. Cheryl proposed the following to be included as management measures:

1. UPC staff and contractors be educated about Aboriginal object identification as part of site induction procedures; and
2. Disturbance areas should be monitored by an Aboriginal site officer during initial topsoil removal who would be responsible for recording and collecting any uncovered stone artefacts.

Section 9.3.1 Aboriginal keeping place

Cheryl and Rhonda Kitchener stated that they would prefer it if only an educational sample of collected material was kept at the keeping place. Any excess of material should be reburied on Country in a safe area near the development footprint.

Acknowledgement of Country (presented after the cover pages of this ACHA)

Cheryl and Rhonda provided advice on how they would like the acknowledgement of Country text presented after the title page to read. This is based on text emailed to EMM by Cheryl on 8 October 2018.

Appendix B

AHIMS search results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J17300

Client Service ID : 311864

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
21-4-0002	Dunvegan;Uralla;	AGD	56	359700	6597300	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	Contact	**Recorders**	Uralla Shire Council					**Permits**		
21-4-0003	Mount John;New England Hwy;	AGD	56	362200	6617900	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	**Recorders**	W Cook					**Permits**		
21-4-0004	Salisbury Court;Salisbury Waters;	AGD	56	356872	6598614	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	Contact	**Recorders**	Isabel McBryde,Mr.Malcolm Ridges					**Permits**	1127	
21-4-0043	Chiswick Axe Grinding Site;	AGD	56	361100	6612138	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	**Recorders**	S.R Hudson					**Permits**		
21-4-0077	Stoneleigh Quarry	AGD	56	369535	6615374	Open site	Valid	Stone Quarry : 2, Artefact : 10		
	Contact T Russell	**Recorders**	Mr.Bruce Cohen					**Permits**		
21-4-0078	Stoneleigh water hole	AGD	56	369053	6613777	Open site	Valid	Water Hole : 1, Artefact : 5		
	Contact T Russell	**Recorders**	Mr.Bruce Cohen					**Permits**		
21-4-0079	Stoneleigh grinding groves	AGD	56	369254	6613764	Open site	Valid	Grinding Groove : 1		
	Contact T Russell	**Recorders**	Mr.Bruce Cohen					**Permits**		
20-6-0067	Barley Uralla L&H P1	GDA	56	355890	6611030	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Mr.John Appleton					**Permits**	3893,4108	
21-4-0097	Dangars Uralla L&H P1	GDA	56	357000	6604900	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Mr.John Appleton					**Permits**	3893,4108	
20-6-0069	RACECOURSE ISO 2	AGD	56	355440	6605130	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		
20-6-0070	RACECOURSE OS 1	AGD	56	355548	6605100	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		
21-4-0106	CRESSBROOK Q1	GDA	56	374147	6608151	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		
21-4-0107	CRESSBROOK GG 1	GDA	56	373252	6607231	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		
21-4-0108	BARLEY M1	GDA	56	358963	6610845	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		

Report generated by AHIMS Web Service on 09/11/2017 for Kerryn Armstrong for the following area at Datum :GDA, Zone : 56, Eastings : 353001 - 373804, Northings : 6593741 - 6617950 with a Buffer of 1000 meters. Additional Info : This information will be used for background research. Number of Aboriginal sites and Aboriginal objects found is 36

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
20-6-0068	RACECOURSE ISO 3	GDA	56	355430	6605080	Open site	Valid	Artefact : 1		
Contact	Recorders	Mr.John Appleton,University of New England - Armidale						Permits		
21-4-0101	CRESSBROOK IS02	GDA	56	372769	6606605	Open site	Valid	Artefact : 1		
Contact	Recorders	Mr.John Appleton,University of New England - Armidale						Permits		
21-4-0102	CRESSBROOK OS 7	GDA	56	372860	6606538	Open site	Valid	Artefact : 1		
Contact	Recorders	Mr.John Appleton,University of New England - Armidale						Permits		
21-4-0103	CRESSBROOK O58	GDA	56	373208	6607312	Open site	Valid	Artefact : 1		
Contact	Recorders	Mr.John Appleton,University of New England - Armidale						Permits		
21-4-0104	CRESSBROOK O59	GDA	56	373224	6607294	Open site	Valid	Artefact : 1		
Contact	Recorders	Mr.John Appleton						Permits		
21-4-0109	Barley OS 5	GDA	56	358407	6610250	Open site	Valid	Artefact : -		
Contact	Recorders	Mr.John Appleton						Permits		
21-4-0110	Barley OS 1	GDA	56	358850	6610840	Open site	Valid	Artefact : -		
Contact	Recorders	Mr.John Appleton						Permits	3893,4108	
21-4-0111	Barley OS 2	GDA	56	358540	6610760	Open site	Valid	Artefact : -		
Contact	Recorders	Mr.John Appleton						Permits		
21-4-0112	Barley OS 3	GDA	56	358450	6610670	Open site	Valid	Artefact : -		
Contact	Recorders	Mr.John Appleton						Permits		
21-4-0113	Barley OS4	GDA	56	358349	6610456	Open site	Valid	Artefact : -		
Contact	Recorders	Mr.John Appleton						Permits		
21-4-0045	SC1	AGD	56	362400	6609800	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
Contact	Recorders	Alice Gorman						Permits	1104,1109	
21-4-0046	SC8	AGD	56	362100	6601100	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
Contact	Recorders	Alice Gorman						Permits		
21-4-0047	SC3	AGD	56	362500	6609800	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
Contact	Recorders	Alice Gorman						Permits		
20-6-0018	Church Gully Uralla	AGD	56	352700	6602600	Closed site	Valid	Artefact : -	Shelter with Deposit	89
Contact	Recorders	Sandra Bowdler						Permits		
21-4-0054	Chiswick Camp Site	AGD	56	361100	6612130	Open site	Valid	Grinding Groove : -, Artefact : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J17300

Client Service ID : 311864

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Karen Moorhouse					**Permits**		
21-4-0084	saliberry creek 1	GDA	56	374024	6606303	Open site	Valid	Artefact : -		
	Contact Mr.Mark Moore	**Recorders**	Mr.Malcolm Ridges,Aboriginal Cultural & Heritage Network Commitee					**Permits**		
21-4-0085	Enmore Road 1	GDA	56	374341	6604780	Open site	Valid	Artefact : -		
	Contact Mr.Mark Moore	**Recorders**	Mr.Malcolm Ridges,Riverina Local Land Services					**Permits**		
21-4-0086	Mihi Road scar tree	GDA	56	372261	6600729	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Mr.Malcolm Ridges	**Recorders**	Mr.Malcolm Ridges					**Permits**		
21-4-0087	Salibury creek 2	GDA	56	364257	6618790	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Malcolm Ridges					**Permits**		
21-4-0091	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	**Recorders**	Barry Cain,Mr.Malcolm Ridges,Mr.Roger Mehr					**Permits**		
21-4-0092	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	Contact	**Recorders**	Barry Cain,Mr.Malcolm Ridges,Mr.Roger Mehr					**Permits**		
21-4-0167	Barley Q 4	AGD	56	358349	6610456	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.John Appleton,University of New England - Armidale					**Permits**		

Report generated by AHIMS Web Service on 09/11/2017 for Kerryn Armstrong for the following area at Datum :GDA, Zone : 56, Eastings : 353001 - 373804, Northings : 6593741 - 6617950 with a Buffer of 1000 meters. Additional Info : This information will be used for background research. Number of Aboriginal sites and Aboriginal objects found is 36

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Appendix C

Archaeological survey transect data

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
1	hillslope_1	300	20	5,996	5%	60%	180	3	Ironstone	None		0	native_trees,leaf_litter,other	vehicle_track,scald,erosion	moderate
2	crest_hillcrest	360	20	7,194	20%	70%	1,007	14	Ironstone	None		0	grass; native_trees,leaf_litter,other	vehicle_track,scald,erosion	moderate
3	flat_plain	679	20	13,581	5%	50%	340	3	Ironstone	Ironstone	Cobbles	0_5	grass,other	vehicle_track,scald,erosion	moderate
4	hillslope_1	472	20	9,441	5%	50%	236	3	Ironstone	Ironstone; silcrete	Cobbles; bedrock expanse	0_5	leaf_litter,other,native_trees	vehicle_track,scald,erosion	moderate
5	crest_hillcrest	837	20	16,749	20%	70%	2,345	14	Ironstone	Greywacke	Boulder; cobble	70_80	Grass; rock	bedrock, scald, erosion	low
6	hillslope_1	508	20	10,163	10%	60%	610	6	Ironstone	Ironstone; silcrete	Bed rock expanse; cobble	5_10	grass,native_trees	scald,animal_track,erosion,vehicle_track	moderate
7	hillslope_1	895	20	17,891	60%	80%	8,588	48	Ironstone	None		0	grass; gravel	vehicle track	high
8	hillslope_1	989	20	19,789	5%	50%	495	3	Ironstone	None		0	grass,leaf_litter,other	scald,animal_track	moderate
9	crest_ridge	1,637	20	32,744	20%	70%	4,584	14	Ironstone	Ironstone; silcrete	Bedrock expanse, cobble	0_5	grass,leaf_litter,other	scald,animal_track	moderate
10	crest_ridge	621	20	12,416	20%	60%	1,490	12	Fairfield variant b	Basalt	Boulder; cobble	5_10	grass,leaf_litter,other	vehicle_track,scald,animal_track	moderate
11	hillslope_1	787	20	15,740	5%	40%	315	2	Fairfield variant b	None		0_	grass,leaf_litter,other	scald,animal_track	moderate
12	wtrcrs_1_2	318	20	6,364	5%	50%	159	3	Fairfield variant b	None		0_	grass,leaf_litter,other	vehicle_track,erosion	moderate
13	hillslope_1	859	20	17,176	5%	50%	429	3	Fairfield variant b	None		0_	grass,leaf_litter,other	scald,animal_track	moderate
14	hillslope_1	261	20	5,225	20%	60%	627	12	Fairfield variant b	None		0_	grass,leaf_litter,other	scald,animal_track	
15	hillslope_1	519	20	10,379	5%	60%	311	3	Fairfield variant b	None		0_	Grass; gravel	Erosion; scald	moderate
16	wtrcrs_1_2	454	20	9,071	10%	60%	544	6	Powers Creek	None			Grass; gravel	Erosion; scald	
17	hillslope_1	1,260	20	25,208	10%	10%	252	1	Fairfield variant b	Ironstone; silcrete	Cobbles	0_5	grass,leaf_litter,other	Erosion; scald	moderate
18	hillslope_2	205	20	4,101	5%	60%	123	3	Fairfield variant b	Ironstone; silcrete	Cobbles	0_5	grass,leaf_litter,other	Erosion; scald	moderate
19	hillslope_1	1,336	20	26,719	5%	50%	668	3	Fairfield variant b	None		0_5	grass,leaf_litter,other	scald,animal_track	low
20	crest_hillcrest	259	20	5,185	20%	60%	622	12	Bald knob	Basalt	Boulders; cobbles	50_60	grass,leaf_litter,other	Bedrock, scald	low
21	crest_spur	580	20	11,604	80%	70%	6,498	56	Bald knob	Silcrete	Bedrock expanse	60_70	grass,leaf_litter,other	Bedrock	low
22	crest_ridge	1,580	20	31,592	10%	80%	2,527	8	Bald knob	Basalt	Boulders; cobbles	5_10	grass,gravel	animal_track,scald,erosion	moderate
23	crest_spur	471	20	9,429	20%	70%	1,320	14	Saumarez	Silcrete	Bedrock expanse; cobbles	10_20	grass,gravel	animal_track,scald	moderate
24	crest_spur	291	20	5,823	20%	70%	815	14	Fairfield variant b	None		0_	grass,gravel	animal_track,scald	moderate
25	wtrcrs_1_2	286	20	5,721	10%	60%	343	6	Fairfield variant b	None		0_	grass,gravel	animal_track,scald, stream bank	moderate

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
26	hillslope_1	1,147	20	22,934	20%	70%	3,211	14	Fairfield variant b	Ironstone; silcrete	Bedrock expanse; boulder; cobbles	10_20	grass,gravel, cobbles	animal_track,scald, bedrock	
27	crest_spur	159	20	3,171	30%	70%	666	21	Gostwyck	Granite	Bedrock expanse; boulder	70_80	grass,gravel, cobbles	animal_track,scald, bedrock	low
28	crest_spur	3,740	20	74,801	20%	70%	10,472	14	Fairfield variant b	Basalt; silcrete	Cobbles	0_5	grass	animal_track,scald, bedrock	moderate
29	crest_hillcrest	235	20	4,699	20%	70%	658	14	Fairfield variant a	Chert	Bedrock; cobbles	10_20	grass	Scalds	moderate
30	flat_plain	260	20	5,194	5%	50%	130	3	Ironstone	None		0_	grass	Scalds	moderate
31	crest_hillcrest	1,339	20	26,782	20%	60%	3,214	12	Fairfield variant a	Chert; Jasper; Silcrete	Cobbles	10_20	grass; stones	Scalds	moderate
32	flat_plain	497	20	9,935	5%	50%	248	3	Ironstone	None		0	Grass	Scald	moderate
33	crest_ridge	2,173	20	43,469	20%	60%	5,216	12	Ironstone	Ironstone	Cobbles	10_20	grass; stones	Scald	
34	crest_spur	625	20	12,492	20%	70%	1,749	14	Fairfield variant a	Basalt	Boulder; cobbles	20_30	grass; stones	Scald, animal track	moderate
35	crest_ridge	307	20	6,147	20%	80%	984	16	Fairfield variant a	Basalt	Boulder; cobbles	20_30	grass,other	Scald, animal track	low
36	hillslope_1	577	20	11,542	10%	50%	577	5	Gostwyck	Granite	Bedrock; boulder	20_30	grass,other	Scald, animal track; bedrock	moderate
37	crest_spur	587	20	11,744	10%	80%	940	8	Gostwyck variant a	Granite	Bedrock; boulder	50_60	grass,other	Scald, animal track; bedrock	low
38	hillslope_1	1,318	20	26,353	10%	60%	1,581	6	Gostwyck	Granite	Bedrock; boulder	10_20	grass	Scald, animal track; bedrock	moderate
39	crest_spur	1,305	20	26,091	10%	80%	2,087	8	Gostwyck	Granite	Bedrock; boulder	20_30	grass	Scald, animal track; bedrock	low
40	hillslope_1	687	20	13,735	10%	70%	961	7	Gostwyck	Granite	Bedrock; boulder	5_10	grass	Scald, animal track; bedrock	moderate
41	hillslope_2	1,152	20	23,033	10%	70%	1,612	7	Gostwyck	Granite	Bedrock; boulder	0_5	grass	vehicle_track,animal_track,sheet_wash,scald	moderate
42	wtrcrs_1_2	558	20	11,162	40%	60%	2,679	24	Gostwyck	None		0	grass	Stream bank	moderate
43	crest_spur	469	20	9,379	20%	60%	1,125	12	Fairfield variant a	None		0	grass	Plough lines	moderate
44	flat_plain	1,537	20	30,738	20%	70%	4,303	14	Fairfield variant a	None		0	grass	Plough lines	moderate
45	crest_spur	325	20	6,499	10%	80%	520	8	Fairfield variant a	Basalt	Bedrock; boulder; cobbles	0_5	grass,leaf_litter,regrowth_trees	vehicle_track,scald	moderate
46	wtrcrs_1_2	297	20	5,945	5%	20%	59	1	Kellys Plains	None			grass	Scald	moderate
47	crest_spur	1,115	20	22,301	10%	50%	1,115	5	Fairfield variant a	Basalt	Bedrock; boulder; cobbles	0_5	grass	animal_track,scald,erosion	moderate
48	hillslope_1	189	20	3,781	80%	90%	2,722	72	Fairfield variant a	None			grass,gravel	vehicle_track	moderate
49	crest_hillcrest	826	20	16,513	20%	70%	2,312	14	Fairfield variant a	Basalt	Bedrock; boulder; cobbles	5_10	grass	animal_track,scald,erosion	low
50	crest_hillcrest	1,436	20	28,726	20%	80%	4,596	16	Gostwyck variant a	Granite	Bedrock; boulders	20_30	grass	Scald, animal track; bedrock	low
51	hillslope_1	797	20	15,947	20%	50%	1,595	10	Gostwyck	Granite	Bedrock; boulders	0_5	exotic_trees,grass	scald,other,animal_track,vehicle_track	moderate
52	hillslope_1	339	20	6,775	5%	50%	169	3	Gostwyck	Granite	Bedrock; boulders	0_5	grass	scald,other,animal_track,vehicle_track	moderate
53	crest_hillcrest	1,906	20	38,122	10%	80%	3,050	8	Gostwyck	Silcrete	Bedrock; cobbles	5_10	grass	animal_track,scald, bedrock	moderate
54	hillslope_2	1,326	20	26,524	10%	50%	1,326	5	Gostwyck	Granite	Bedrock; cobbles	0_5	grass	animal_track,sheet_wash,erosion	moderate
55	hillslope_1	517	20	10,336	10%	50%	517	5	Julia Gully	None			grass	scald,animal_track	moderate
56	crest_spur	248	20	4,958	20%	80%	793	16	Fairfield variant a	Chert, greywacke, quartz	Bedrock, stones	5_10	grass and gravel	scald,vehicle_track,sheet_wash	moderate

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
57	crest_hillcrest	1,472	20	29,437	10%	80%	2,355	8	Gostwyck	Chert, granite, quartz	Cobbles	0_5	grass	animal_track,erosion,sheet_wash	moderate
58	hillslope_1	1,356	20	27,113	10%	40%	1,085	4	Gostwyck	None		0_		animal_track,erosion,sheet_wash	moderate
59	hillslope_1	532	20	10,646	10%	70%	745	7	Gostwyck	None		0_	grass	animal_track,scald	moderate
60	wtrcrs_1_2	507	20	10,132	20%	70%	1,418	14	Julia Gully	None		0_		stream_bank	moderate
61	wtrcrs_3	762	20	15,236	60%	80%	7,313	48	Gostwyck	None		0_	gravel,grass	stream_bank	moderate
62	crest_hillcrest	316	20	6,313	10%	80%	505	8	Bald knob	Basalt	Boulders	20_40	Grass	Scalds, erosion	low
63	flat_floodplain	4,211	20	84,221	10%	80%	6,738	8	Powers Creek	Silcrete	Cobbles	0_5	Grass	Scalds, animal tracks	moderate
64	crest_spur	760	20	15,198	20%	30%	912	6	Bald knob	Basalt	Boulders	40_50	Grass and boulders	Scalds, erosion	low
65	flat_plain	979	20	19,588	30%	60%	3,526	18	Kellys Plains	Basalt, ironstone	Boulders and cobbles	20_30	Grass and boulders	Scalds, erosion	moderate
66	crest_spur	1,871	20	37,421	50%	80%	14,968	40	Kellys Plains	Basalt, ironstone	Cobbles	0_5	grass	scald,animal_track,sheet_wash,erosion	moderate
67	flat_floodplain	3,704	20	74,085	40%	70%	20,744	28	Powers Creek	None		0_			moderate
68	flat_floodplain	3,067	20	61,343	10%	70%	4,294	7	Kellys Plains	None		0_	grass	scald,animal_track,sheet_wash,erosion	moderate
69	flat_terrace	615	20	12,308	20%	50%	1,231	10	Kellys Plains	None		0_	grass	scald,animal_track,sheet_wash,erosion	moderate
70	flat_floodplain	1,129	20	22,582	5%	80%	903	4	Powers Creek	None		0	grass	scald,animal_track,sheet_wash,erosion	moderate
71	flat_terrace	3,247	20	64,946	20%	50%	6,495	10	Kellys Plains	Basalt	Boulder	0_5	grass	scald,animal_track,sheet_wash,erosion	moderate
72	flat_floodplain	2,785	20	55,698	30%	70%	11,697	21	Powers Creek	None		0	grass	scald,animal_track,sheet_wash,erosion	moderate
73	crest_ridge	2,438	20	48,760	60%	70%	20,479	42	Bald knob	Basalt	Boulder	0_5	other	scald,animal_track,sheet_wash,erosion	moderate
74	wtrcrs_1_2	4,542	20	90,845	20%	50%	9,085	10	Powers Creek	None		0_	grass	scald,animal_track,sheet_wash,erosion	moderate
75	crest_spur	4,246	20	84,924	20%	60%	10,191	12	Ironstone	Basalt, silcrete	Boulder	5_10	grass	scald,animal_track,sheet_wash,erosion	moderate
76	crest_ridge	2,472	20	49,446	20%	50%	4,945	10	Bald knob	Basalt	Boulder	40_50	grass	scald,animal_track,sheet_wash,erosion	moderate
77	crest_spur	4,173	20	83,464	10%	80%	6,677	8	Gostwyck	Granite, silcrete	Boulder, bedrock	10_20	grass	erosion,scald,animal_track	moderate
78	flat_terrace	4,323	20	86,452	10%	60%	5,187	6	Gostwyck	Ironstone	Cobbles	5_10	grass	scald,sheet_wash	moderate
79	crest_ridge	3,827	20	76,536	10%	70%	5,358	7	Gostwyck	Granite	Boulder, bedrock	50_60	leaf_litter,regrowth_trees	other,erosion	moderate
80	crest_spur	3,057	20	61,130	10%	70%	4,279	7	Fairfield variant b	Greywacke	Bedrock, boulders, cobbles	10_20	grass	scald,sheet_wash	moderate
81	hillslope_2	2,275	20	45,493	10%	70%	3,185	7	Fairfield variant b	Greywacke	Bedrock, boulders, cobbles	0_5	grass	scald,sheet_wash	moderate
82	crest_spur	1,123	20	22,450	20%	60%	2,694	12	Fairfield variant b	None		0_	grass	scald,sheet_wash	moderate
83	crest_spur	961	20	19,229	10%	70%	1,346	7	Fairfield variant b	Chert	Bedrock	0_5	grass	scald,sheet_wash	moderate
84	wtrcrs_1_2	812	20	16,230	5%	50%	406	3	Fairfield variant b	None		0_	grass	scald,sheet_wash	moderate
85	crest_spur	6,949	20	138,983	20%	80%	22,237	16	Fairfield variant b	Basalt, silcrete	Bedrock	0_5	Grass, stones,	scald,sheet_wash	moderate
86	crest_spur	3,542	20	70,836	20%	80%	11,334	16	Gostwyck	Granite, silcrete	Boulders, cobbles	0_5	grass,gravel	vehicle_track,scald,animal_track	moderate
87	hillslope_1	2,067	25	51,665	50%	80%	20,666	40	Gostwyck	Granite	Boulders and tors	0_5	grass	animal_track,erosion	moderate

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
88	wtrcrs_1_2	435	25	10,879	10%	50%	544	5	Gostwyck	Granite, silcrete	Bedrock, boulders	0_5	grass,native_trees	erosion,animal_track	moderate
89	crest_spur	1,243	25	31,078	10%	70%	2,175	7	Gostwyck	Granite, silcrete	Bedrock, boulder	0_5	grass,gravel,native_trees	erosion,animal_track,sheet_wash	moderate
90	hillslope_1	1,443	25	36,087	20%	50%	3,609	10	Gostwyck	Granite, silcrete	Bedrock, boulder	5_10	grass,gravel,native_trees	erosion,animal_track,sheet_wash	moderate
91	wtrcrs_1_2	633	25	15,823	10%	50%	791	5	Powers Creek	None		0_	grass,native_trees	scald,animal_track,erosion,tree_halo,stream_bank	moderate
92	hillslope_1	2,130	25	53,254	20%	60%	6,390	12	Gostwyck	Granite, ironstone, silcrete	Boulder, cobbles	0_5	grass,native_trees	animal_track,scald,tree_halo	moderate
93	wtrcrs_1_2	678	25	16,957	10%	80%	1,357	8	Gostwyck	Conglomerate, ironstone	Bedrock, boulder	10_20	grass,gravel,native_trees	scald,erosion,animal_track	moderate
94	hillslope_1	888	25	22,211	10%	60%	1,333	6	Gostwyck	Granite	Bedrock, boulder	5_10	grass	scald,animal_track,erosion	moderate
95	hillslope_1	6,344	25	158,611	5%	60%	4,758	3	Ironstone	Basalt, ironstone silcrete	Bedrock, boulder, cobbles	0_5	grass,native_trees	vehicle_track,animal_track,erosion,scald	moderate
96	wtrcrs_1_2	4,526	25	113,145	20%	50%	11,315	10	Fairfield variant a	Ironstone, greywacke	Bedrock, boulder	0_5	grass,disturbance	dam_wall,bund,sheet_wash,scald,animal_track,stream_bank	moderate
97	hillslope_1	1,612	25	40,304	20%	30%	2,418	6	Fairfield variant a	None		0_	Grass	scald,erosion,animal_track	moderate
98	crest_spur	643	25	16,064	10%	70%	1,124	7	Ironstone	Greywacke	Bedrock, boulder	5_10	grass	scald,animal_track,dam_wall	moderate
99	crest_spur	1,384	25	34,598	20%	60%	4,152	12	Fairfield variant b	Basalt, ironstone	Boulder	10_20	grass,gravel,exotic_trees	scald,erosion,animal_track	low
100	crest_ridge	2,325	25	58,114	50%	70%	20,340	35	Fairfield variant b	Basalt	Boulder	20_30	other,gravel	other	high
101	hillslope_1	2,763	25	69,083	10%	60%	4,145	6	Ironstone	Ironstone, silcrete	Boulder	0_5	grass,leaf_litter,native_trees,exotic_trees	scald,erosion	moderate
102	crest_ridge	1,034	25	25,851	20%	70%	3,619	14	Fairfield variant b	Basalt	Boulder	5_10	grass,native_trees,gravel,disturbance	vehicle_track,animal_track,sheet_wash,erosion	moderate
103	hillslope_1	2,103	25	52,582	10%	70%	3,681	7	Fairfield variant a	Basalt	Boulder	0_5	grass,native_trees,gravel,disturbance	scald,sheet_wash,erosion,animal_track	moderate
104	crest_spur	4,180	25	104,489	20%	70%	14,628	14	Fairfield variant a	Basalt	Boulder	0_5	grass,gravel,native_trees,exotic_trees	scald,erosion	moderate
105	hillslope_1	1,458	25	36,440	20%	70%	5,102	14	Fairfield variant b	Basalt	Boulder	10_20	grass,native_trees,gravel,disturbance	scald,animal_track,sheet_wash	moderate
106	hillslope_1	5,457	25	136,431	20%	70%	19,100	14	Fairfield variant b	Ironstone, silcrete	Bedrock, boulder, cobbles	0_5	grass,gravel,native_trees	vehicle_track,sheet_wash,scald	moderate
107	wtrcrs_1_2	419	25	10,487	20%	80%	1,678	16	Powers Creek	NA		0_	grass,gravel	stream_bank,erosion	moderate
108	hillslope_1	597	25	14,927	20%	60%	1,791	12	Ironstone	Silcrete	Bedrock	0_5	grass	animal_track,scald,sheet_wash	moderate
109	hillslope_1	874	25	21,847	10%	70%	1,529	7	Ironstone	Basalt	Bedrock, boulders	0_5	grass	scald,vehicle_track,animal_track	moderate
110	hillslope_1	4,781	25	119,515	20%	70%	16,732	14	Gostwyck	Granite	Bedrock and boulders	5_10	grass	scald,erosion,vehicle_track,sheet_wash	moderate
111	crest_hillcrest	3,009	25	75,230	20%	70%	10,532	14	Gostwyck	Granite	Bedrock and boulders	20_30	grass	stream_bank,erosion	moderate

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
112	crest_spur	2,062	25	51,559	40%	80%	16,499	32	Gostwyck	Basalt	Bedrock	5_10	grass,disturbance,gravel	scald,erosion	moderate
113	hillslope_1	1,304	25	32,605	10%	50%	1,630	5	Fairfield variant a	None		0_	grass	vehicle_track,stream_bank	moderate
114	crest_spur	1,729	25	43,213	20%	70%	6,050	14	Fairfield variant a	Greywacke	Bedrock	5_10	grass,exotic_trees	scald,sheet_wash,erosion	moderate
115	hillslope_1	3,437	25	85,936	5%	30%	1,289	2	Fairfield variant a	Ironstone	Cobbles	0_5	grass	other	moderate
116	flat_plain	1,335	25	33,364	10%	60%	2,002	6	Gostwyck	Granite	Bedrock, boulders	0_	grass,native_trees	vehicle_track,other,erosion	moderate
117	wtrcrs_1_2	834	25	20,841	10%	80%	1,667	8	Julia Gully	None		0_		sheet_wash,erosion	moderate
118	hillslope_1	475	25	11,871	20%	60%	1,425	12	Gostwyck	None		0_	grass	other	moderate
119	crest_hillcrest	1,096	25	27,393	50%	70%	9,588	35	Gostwyck variant a	Granite	Bedrock, boulder	40_50	grass,other	other,scald	moderate
120	crest_hillcrest	1,594	25	39,859	30%	60%	7,175	18	Fairfield variant a	Granite	Bedrock, boulder	5_10	grass,other	scald,other	moderate
121	hillslope_1	2,539	25	63,474	70%	80%	35,545	56	Ironstone	Silcrete	Bedrock	0_5	grass,other	vehicle_track, disturbance	high
122	crest_hillcrest	205	25	5,114	70%	80%	2,864	56	Bald knob	Basalt	Bedrock, boulder, stones	20_30	gravel	scald,vehicle_track,sheet_wash,erosion	moderate
123	wtrcrs_1_2	2,012	25	50,308	20%	70%	7,043	14	Kellys Plains	Basalt	Boulder, stones	0_5	grass	stream_bank,scald,vehicle_track,dam_wall	moderate
124	hillslope_1	2,644	25	66,097	20%	50%	6,610	10	Ironstone	Basalt, ironstone, silcrete	Boulder, stones	0_5	grass,gravel	vehicle_track,scald,animal_track	moderate
125	hillslope_1	1,533	25	38,337	20%	60%	4,600	12	Kellys Plains	Basalt, ironstone, silcrete	Boulder, stones	0_5	grass	vehicle_track,scald,animal_track	moderate
126	hillslope_1	2,427	25	60,684	20%	60%	7,282	12	Kellys Plains	Basalt, ironstone	Boulder, stones	0_5	grass	sheet_wash,erosion	moderate
127	crest_hillcrest	765	25	19,136	20%	80%	3,062	16	Bald knob	Basalt	Boulder, stones	60_70	grass	sheet_wash,erosion	moderate
128	hillslope_1	1,399	25	34,987	10%	40%	1,399	4	Kellys Plains	Basalt	Boulder, stones	0_5	grass	sheet_wash,erosion	moderate
129	flat_plain	3,607	25	90,166	10%	70%	6,312	7	Kellys Plains	None		0_		sheet_wash,erosion	moderate
130	wtrcrs_1_2	797	25	19,931	20%	70%	2,790	14	Kellys Plains	None		0_	grass	stream_bank,scald,sheet_wash	high
131	flat_plain	759	25	18,973	20%	70%	2,656	14	Kellys Plains	None		0_	grass	scald,sheet_wash	moderate
132	hillslope_1	1,257	25	31,413	10%	60%	1,885	6	Ironstone	Silcrete	Bedrock, boulder	0_5	grass,disturbance	scald,sheet_wash	moderate
133	wtrcrs_1_2	1,755	25	43,883	20%	60%	5,266	12	Powers Creek	Silcrete	Boulder, stone	5_10	grass	scald,animal_track,erosion,sheet_wash	moderate
134	hillslope_1	2,993	25	74,825	40%	80%	23,944	32	Ironstone	Greywacke, silcrete	Bedrock, boulder, stones	0	gravel,grass	other,scald,sheet_wash	high
135	hillslope_1	1,868	25	46,689	20%	50%	4,669	10	Ironstone	Silcrete	Bedrock, cobbles	0_5	grass,disturbance	scald,sheet_wash	moderate
136	hillslope_1	4,722	25	118,051	10%	50%	5,903	5	Gostwyck	Granite, silcrete	Bedrock, boulder	5_10	grass,disturbance	scald,sheet_wash	moderate
137	crest_spur	942	25	23,546	20%	70%	3,297	14	Fairfield variant b	None		0	grass,disturbance	scald,sheet_wash	moderate
138	crest_hillcrest	1,851	25	46,270	20%	50%	4,627	10	Fairfield variant b	Granite,silcrete	Boulder, bedrock expanse	40_50	grass,native_trees,other	scald,erosion	moderate
139	hillslope_1	3,532	25	88,293	20%	50%	8,829	10	Kellys Plains	None		0	grass,disturbance	scald,sheet_wash	
140	crest_hillcrest	1,189	25	29,735	20%	80%	4,758	16	Kellys Plains	Silcrete	Bedrock	0_5	grass	scalds	moderate
141	hillslope_1	1,717	25	42,913	20%	60%	5,150	12	Bald knob	Basalt	Bedrock, boulders, stones	20_30	Grass, stones	Scalds, bedrock	moderate
142	flat_plain	2,372	25	59,301	20%	70%	8,302	14	Kellys Plains	Ironstone, basalt, cobbles of silcrete		0_5	Grass	Plough lines, scalds, sheetwash	moderate
143	wtrcrs_4	850	25	21,243	20%	70%	2,974	14	Powers Creek	Greywacke	Bedrock	0_5	Grass	Scalds, stream bank erosion, sheet wash	moderate
144	hillslope_1	4,596	25	114,905	10%	60%	6,894	6	Kellys Plains	Silcrete		0_5			

Transect number:	Landform element:	Length (m)	Width (m)	Area (m)	Exposure %	Visibility %	Effective coverage area (m)	Effective coverage %	Soil landscape:	Rock outcrop material:	Other' rock outcrop form:	Extent of rock outcrop %	Ground cover types:	Exposure types:	Disturbance:
145	wtrcrs_4	457	25	11,434	20%	40%	915	8	Powers Creek	None		0	Grass	Scalds, stream bank, sheet wash	moderate
146	hillslope_1	1,044	25	26,105	10%	50%	1,305	5	Fairfield variant a						moderate
147	crest_hillcrest	1,800	25	45,004	20%	80%	7,201	16	Gostwyck	Silcrete	Bedrock	0_5	Grass, gravels	Scalds, sheet wash, bedrock	
148	hillslope_1	1,194	25	29,838	30%	60%	5,371	18	Fairfield variant a	None		0	grass,leaf_litter,other	Erosion; scald	moderate
149	wtrcrs_1_2	612	25	15,288	10%	70%	1,070	7	Gostwyck	None		0	Grass	Plough lines, scalds	moderate
150	hillslope_1	1,913	25	47,822	10%	70%	3,348	7	Gostwyck	None		0	Grass	Plough lines, scalds	moderate
151	wtrcrs_3	1,066	25	26,653	50%	80%	10,661	40	Julia Gully	None		0	Grass, gravel	Stream banks, scalds	moderate
152	hillslope_1	1,165	25	29,120	10%	70%	2,038	7	Gostwyck	Granite, silcrete	Bedrock, boulder	10_20		Bedrock, scalds, sheetwash	moderate
153	crest_ridge	4,725	25	118,115	20%	70%	16,536	14	Gostwyck	Granite, silcrete	Bedrock, boulder	40_50	Grass, gravels	Bedrock, sheetwash	moderate
154	flat_plain	480	25	12,000	20%	70%	1,680	14	Gostwyck	None		0	Grass, gravel	Scalds, plough lines, animal tracks	moderate
155	flat_plain	545	25	13,632	20%	70%	1,908	14	Fairfield variant a	None		0	Grass, gravel	Scalds, plough lines	moderate

Appendix D

Aboriginal site significance values

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE01	Artefact scatter	Low: Common site type, low artefact frequency, eroded crest on rocky and skeletal soils.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE02	Isolated find	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low: Isolated silcrete core identified on a hill slope context. Site is amongst minor silcrete pavement with no signs of resource extraction despite inspection. Continuous outcropping bedrock makess soils too shallow to feature subsurface deposit.	Low
NE03	Isolated find	Low: Common site type in pasture improvided field, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichare not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE04	Grinding groove	Low: Single grinding groove feature on small granite pavement. Research is limited beyond its superficial groove characteristics.	Moderate: Site type is relatively rare in the region when compared to open camp sites. However, is not a pivotal example of its type.	Low: The site is limited to a single groove and is not a good example of a grinding groove site.	High: Groove is in good condition.	Moderate: Easily identifiable site type for explantation of stone grinding process.	Moderate: Rarer site type but not good example of site type and limited research potential.	Moderate
NE05	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichare not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE06	Isolated find	Low: Common site type, isolated artefact on rocky crest and skeletal soils.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE07	Artefact scatter	Moderate: Site is amongst unique expanse of outcropping silcrete and features a variety of raw materials separate to outcropping material. However, the bedrock indicates that there is negligible subsurface potential	Moderate: Unique site landscape context on a silcrete pavement expanse with a variety of materials.	Moderate: The site is an unique example of an open camp site on a silcrete bedrock expanse.	Moderate: Silcrete outcrop is in good condition and area is fenced and revegetated.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Moderate: Unique site landscape context on silcrete pavement with a variety of stone artefacts and raw materials.	Moderate
NE08	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE09	Grinding groove, artefact scatter, PAD	High: Extensive number of grooves and open camp site at its periphery could yield unique information about this site complex. Potential to idenitfy specific activity areas.	High: Site of this extent and groove count is rare locally and potentially regionally. Site is also unqiue in being on a landmark landform and being a considerable distance from watercourses.	High: Site demonstrates the princple characteristics of a grinding groove site well.	Moderate: Grinding grooves are in good condition. Surrounding stone artefacts and PAD have been subject to historical clearning and pasture improvement.	High: Very good and easily identifiable examples of grinding grooves and stone artefacts.	High: Unique site type, extensive site contents, reasearch potential and high educational value.	High
NE10	Isolated find, PAD	Moderate: Site crest landform and proximity to confluence of watercourses indicate PAD. Subsurface artefacts may exist.	Moderate: Axe blank artefact type is a relatively rare stone artefact type.	Moderate: Axe blank is a good example of its type.	Low to moderate: Location of artefact is highly disturbed from vehicle track construction and surrounding area has been disturbed from vegetation clearance and pasture improvement. However, excavation of PAD would establish subsurface site integrity.	Moderate: Easily identifiable artefact type and aesthetically pleasing. However, limited visible site contents detracts from this criteron	Moderate: Unique stone artefact type which is a good example of its kind. Associated with PAD area.	Moderate
NE11	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable	Low: Common site type and characteristics.	Low
NE12	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is highly disturbed on a dam bund wall.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in highly disturbed context.	Low
NE13	Artefact scatter	Low: Common site type, low artefact frequency.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE14	Quarry, artefact scatter, PAD	Moderate: Outcropping material with adjacent artefacts including imported material types. Excavation would possibly identified more components of the stone tool manufacture process.	Moderate: Rare outcropping of red jasper in the landscape teamed with site contents of silcrete cores in boulder form. Unique site contents.	Low: Site is not a good example of a typical quarry as there is limited evidence of worked source material within the site.	Moderate: Rock outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown. Site has been cleared but extensive cultivation is unlikely due to outcropping stone.	Low: The site is not an easily identifiable example of a stone quarry.	Moderate: Stone quarry with rare occurance of red jasper teamed with imported silcrete boulders. May have subsurface potential.	Moderate
NE15	Artefact scatter	Moderate: Artefact concentration likely to be assosciated with site N14 to the north. May contribute to information about a larger quarry or open camp site.	Moderate: Higher frequency of large silcrete cores in boulder form is relatively rare for open camp sites. May be associated with quarry at N14.	Low: Site is not a good example of a typical open artefact scatter as artefacts are primarily large cores.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement. Outcrops indicate that crest is highly eroded.	Moderate: The site features some clear and good examples of larger cores and demonstrates the intial sequences in the stone tool manufacture process.	Moderate: Relatively rare open artefact scatter contents, varied materials and proximity to quarry.	Moderate
NE16	Artefact scatter	Low: Common site type, low artefact frequency.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this	Low: Site is moderately disturbed from vegetation clearance and pasture improvement. Cores	Low: The site has few examples artefacts whichs are not easily identifiable	Low: Common site type and characteristics.	Low
NE17	Artefact scatter, PAD	Moderate: Site is amongst outcropping granite and is likely to have had minimal disturbance apart from initial vegetation clearance. If deeper soils do exist amongst outcropping material, there may be subusrface deposit for excavation.	Moderate: Although site type is relatively common, the site features an axe blank which is a rarer stone artefact type.	Moderate: Site is a good example of an open camp site adjacent to a watercourse. The site features a representative landform element, a variety of stone artefacts and an aesthetically pleasing context amongst outcropping stone.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Moderate: The site is aesthetically pleasing, contains a variety of stone artefacts including an axe blank.	Moderate: A good example of an open stone artefact site with easily identifiable features.	Moderate

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE18	Isolated find	Low: Common site type, isolated artefact. In ploughed paddock.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site moderately disturbed in a ploughed paddock.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE19	Isolated find	Low: Common site type, isolated artefact.Highly disturbed area.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is highly disturbed by adjacent excavation.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE20	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE21	Quarry, artefact scatter, PAD	Moderate: Greywacke quarry site with PAD. Excavation may reveal further information about stone artefact assemblage.	Moderate: Site type is relatively rare in the region when compared to open camp sites. Greywacke quarries are rare in the local area.	Moderate: Site shows the principle characteristics of a quarry site, featuring outcropping greywacke and adjacent cores and flakes.	Moderate: Grewacke outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown.	Moderate: Site has the main features of a quarry to demonstrate the quarrying and stone tool manufacture process.	Moderate: Greywacke stone quarry with some research potential and principle features of stone qurry types.	Moderate
NE22	Quarry, artefact scatter, PAD	Moderate: Extensive silcrete outcrop on crest with subsurface potential.	High: Quarry of this size is rare locally with only few other examples (eg Barley Fields Lagoon). The superficial extent of worked silcrete is rare.	High: Site demonstrates the princple characteristics of a grinding groove site well.	Moderate to low: The site has been cleared of vegetation and there is a pine windbreak running through the centre of the site. There also may have been stone boulder collecting by farmers which is likely to have impacted the integrity of the site.	High: Very good and easily identifiable examples of silcrete cores that have been knapped. Easy to associate with outcropping material.	High: Unique site type, extensive site contents, reasearch potential and high educational value.	Moderate
NE23	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Moderate: Good example of possible coolamon or small sheild scar.	Moderate: Although tree is dead, the scar and dryface is in good condition.	High: Easily identifiable example of a scar tree.	Moderate: Good example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate
NE24	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Obscured example of scar due to scar regrowth.	Moderate: Although tree is dead, the scar and dryface is in good condition.	Low: Small and obscure example of scar. Not easily identifiable.	Moderate: Example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate
NE25	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Obscured example of scar due to fallen tree and decaying.	Low: Tree is felled and scar is decaying. Scar will continue to decay.	Low: Poor example of scar.	Low: Felled tree and decaying tree scar.Poor example of its kind.	Low
NE26	Isolated find	Low: Common site type, isolated artefact. Extensive rabbit burrowing.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site moderately disturbed amongst rabbit burrows.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE27	Artefact scatter, PAD	Moderate: Landform is on a small crest overlooking a deeply incised 3rd order stream. Although ploughed may have subsurface features.	Low: Site contents and landform are common for the local and regional area. However, contains axe blank which is rarer.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type. Excavation would establish if further subsurface examples exist.	Moderate: Although landscape has been cleared and historically ploughed, some subsurface material may exist.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Moderate: Although a relatively common site type with common elements, its proximity to water and landform may yield subsurface material.	Moderate

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE28	Artefact scatter	Low: Highly disturbed and skeletal soils and ploughing visible. Common site type.	Low: Site contents and landform a very common for this site type.	Low: Site is not a good example of a typical open artefact scatter as artefacts are primarily large cores.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE29	Artefact scatter	Low: Highly disturbed and skeletal soils and ploughing visible. Common site type.	Low: Site contents and landform a very common for this site type.	Low: Site is not a good example of a typical open artefact scatter as artefacts are dispersed across disturbed terrain.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE30	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE31	Artefact scatter	Low: Highly disturbed and skeletal soils and farming excavation visible. Common site type.	Low: Site contents and landform a very common for this site type.	Low: Site is not a good example of a typical open artefact scatter as artefacts are dispersed across disturbed terrain.	Low: Site is highlydisturbed from vegetation clearance, pasture improvement and farming infrastructure.	Low: Site contents and type are not good educational examples.	Low: Common site type and characteristics.	Low
NE32	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE33	Quarry, artefact scatter, PAD	Moderate: Site is amongst outcropping basalt and is likely to have had minimal disturbance apart from initial vegetation clearance. If deeper soils do exist amongst outcropping material, there may be subusrface deposit for excavation.	Moderate: Site type is relatively rare in the region when compared to open camp sites. Basalt quarries are rare in the local area.	Moderate: Site shows the principle characteristics of a quarry site, featuring outcropping basalt and adjacent cores and flakes.	Moderate: Basalt outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown.	Moderate: Site has the main features of a quarry to demonstrate the quarrying and stone tool manufacture process.	Moderate: Basalt stone quarry with some research potential and principle features of stone qurry types.	Moderate
NE34	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE35	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance. Numerous scars on one tree are also rarer.	Moderate: Good example tree with multiple scars.	Moderate: Although tree is dead, the scar and dryface is in good condition.	Moderate: Numerous small scars that have obscure shapes. But their number gives higher education value.	Moderate: Good example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate
NE36	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed from vegetation clearance.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE37	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Obscured example of scar due to scar regrowth.	Low: Dead tree; dry face highly decayed; base of scar damaged to the ground which hinders proper identification.	Low: Upper portion of scar had good form by dry face and base of scar is very damaged. Not good educational example of a scar tree.	Moderate: Although highly decayed and damaged, it is a rarer site type.	Moderate
NE38	Artefact scatter, PAD	Moderate: Site is amongst outcropping granite and is likely to have had minimal disturbance apart from initial vegetation clearance. If deeper soils do exist amongst outcropping material, there may	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Moderate: The site is aesthetically pleasing, contains a small sample variety of stone artefacts.	Moderate: A good example of an open stone artefact site with easily identifiable features. Further investigation may provide subsurface material.	Moderate
NE39	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Moderate: Good example of a larger scar.	Low: Tree is dead, the scar is in good form but the dry face is highly decayed.	Moderate: Easily identifiable example of a scar tree. Although dry face is decayed the scar shape is impressive.	Moderate: Good example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate
NE40	Isolated find	Moderate: The site is likely to be associated with the larger site complex with grinding grooves NE09.	Moderate: Assosciation with NE09	Moderate: Assosciation with NE09	Moderate: Assosciation with NE09	Moderate: Assosciation with NE09	Moderate: Assosciation with NE09	Moderate
NE41	Artefact scatter, PAD	Moderate: Site is amongst outcropping granite and is likely to have had minimal disturbance apart from	Moderate: Relatively unique instance of crest/knoll occuring directly adajcent to a stream.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Low: The surface expression has few examples artefacts whichs are not easily identifiable examples of	Moderate: Although the surface expression of the site has limited signifcance, further investigation through test	Moderate
NE42	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE43	Quarry, artefact scatter, PAD	Moderate: Greywacke quarry site on a very stony crest. Further analysis of materials and stone artefact types may yeild more information on quarry sites.	Moderate: Site type is relatively rare in the region when compared to open camp sites. Greywacke quarries are rare in the local area.	Moderate: Site shows the principle characteristics of a quarry site, featuring outcropping greywacke and adjacent cores and flakes.	Moderate: Grewacke outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown.Furthermore, a row of pines wind break has added additional disturbance.	Moderate: Site has the main features of a quarry to demonstrate the quarrying and stone tool manufacture process.	Moderate: Greywacke stone quarry with some research potential and principle features of stone qurry types.	Moderate
NE44	Artefact scatter	Moderate: Excavation away from the creek bank is likely to reveal moderately deep soil deposits with potential evidence of knapping floors.	Moderate: Site with noticeably smaller flakes and implements with frequent chert material examples. Unique compared to most local sites that feature larger cores and flakes in small numbers.	Low: Although site shows principle artefact types and implements, the disturbed nature of the creek bank makes it not a good example of its type.	Moderate: The exposed artefacts have low integrity as they have been eroded out of the bank; however, any subsurface material away from the bank may have higher integrity.	Low: Although the site has aesthetically pleasing and identifiable artefact types, the site is an eroded creek bank and not a good example of an open camp site.	Moderate: A rarer occurance of numerous small flakes eroding out of a creekbank.	Moderate
NE45	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Dry face of scar is missing; missing the principle characteristics of a scar tree.	Low: The	Low: Small and obscure example of scar. Not easily identifiable.	Moderate: Example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE46	Artefact scatter	Low: Common site type, low artefact frequency, eroded crest on rocky and skeletal soils.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE47	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Partially felled tree with no dryface makes it a poor example of a scar tree.	Low: Tree is partially felled and dry face is missing. It would be difficult to determine if of Aboriginal origin.	Low: Poor example of scar and tree is partially felled.	Low: Felled tree and decaying tree scar.Poor example of its kind.	Low
NE48	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable	Low: Common site type and characteristics in moderately	Low
NE49	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Felled tree with no dry face makes it a poor example of a scar tree.	Low: Tree is partially felled and dry face is missing. It would be difficult to determine if of Aboriginal origin.	Low: Poor example of scar and tree is partially felled.	Low: Felled tree and decaying tree scar.Poor example of its kind.	Low
NE50	Isolated find, PAD	Moderate: Greywacke axe blank is on a crest with some smaller outcrops of greywacke. There is not enough evidence to indicate a quarry but subsurface investigation could establish this uncertaintity.	Moderate: Axe blanks are relatively rare artefact types in open camp sites.	Low: Also the site features a good example of an axe blank, the limited artefacts do not make it a good example of an open camp site.	Moderate: Grewacke outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown.	Low: Although the site contains an easily identifable artefact type, it is limited to the isolated find. There are much better examples of the same artefact type amongst greater artefacts.	Moderate: Open camp site with some subsurface potential to determine if small greywacke outcrops were sourced for stone tool manufacture.	Moderate
NE51	Artefact scatter	Low: Common site type, low artefact frequency, away from water courses.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE52	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE53	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE54	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE55	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE56	Artefact scatter	Low: Common site type, low artefact frequency, away from water	Low: Site contents and landform are common for a site considered to be 'background	Low: Sparse assemblage and artefact types are not exceptional examples of this	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable	Low: Common site type and characteristics.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE57 - Historical site	Dry stone wall	UNDETERMINED	UNDETERMINED	UNDETERMINED	UNDETERMINED	UNDETERMINED	UNDETERMINED	Undetermined
NE58	Artefact scatter, PAD	Moderate: Adjacent to Saumarez Creek a 5th order stream. Although paddock has been cleared and ploughed and is on a crest, the site's location near reliable water may indicate subsurface potential.	Low: Site contents and landform a very common for this site type. However, proximity to reliable water may indicate subsurface potential over similar landforms near less reliable water.	Moderate: Although the surface expression of artefacts are not exceptional examples, the landscape context of the site being close to the reliable water of Saumarez Creek may represent a more	Low: Site is moderatley disturbed in a cleared and ploughed paddock. Extent of disturbance to any subsurface deposit not verified.	Low: The surface expression has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Moderate: Although the surface expression of the site has limited signifcance, further investigation through test excavation would clarify if the site has subsurface potential.	Moderate
NE59	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE60	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE61	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Moderate: Good example of possible coolamon or small sheild scar. If cut marks are of Aboriginal origin, then site could be a good example of scar manufacture.	Moderate: Although tree is dead, the scar and dryface is in good condition.	High: Easily identifiable example of a scar tree. Possible axe marks.	Moderate: Good example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate
NE62	Isolated find	Low: Common site type, isolated artefact. Site is highly disturbed from rock collecting. Provenance unknown.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is highly disturbed and amongst rock collecting pile.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in highly disturbed context.	Low
NE63	Isolated find	Low: Common site type, isolated artefact. Site is highly disturbed from rock collecting. Provenance unknown.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is highly disturbed and amongst rock collecting pile.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in highly disturbed context.	Low
NE64	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE65	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE66	Artefact scatter	Low: Common site type, low artefact frequency, site is highly disturbed from excavation and soils are noticably skeletal. Therefore very limited potential.	Low: Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is highly disturbed from vegetation clearance, pasture improvement and recent mechanical excavation.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE67	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Ambiguous scar with no dry face makes it a poor example of a scar tree.	Low: Tree is ambiguous and dry face is missing. It would be difficult to determine if of Aboriginal origin.	Low: Poor example of scar and tree.	Low: Dead and decaying tree scar.Poor example of its kind.	Low
NE68	Grinding groove, artefact scatter, PAD	High: Extensive number of grooves potential deposit could yield unique information about this site complex.	High: Grinding grooves on silcrete outcrops are rare locally and very rare regionally.	High: Site demonstrates the princple characteristics of a grinding groove site well.	Moderate: Grooves are good condition. Surrounding land surface has been disturbed by clearing and possibly ploughing over some of the bedrock expanses. Any associated subsurface stone artefact potential is likely to be affected by farming land use practices.	High: Very good and easily identifiable examples of grinding grooves and stone artefacts.	High: Unique site type, extensive groove examples, reasearch potential and high educational value.	High
NE69	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE70	Artefact scatter, PAD	Moderate: Crest landform directly adajcent to stream with outcropping granite serving as a protectant to disturbance indicates that the site could have retained good subsurface potential.	Moderate: Relatively unique instance of crest/knoll occuring directly adajcent to a stream and potentially a freshwater spring that may have provided more reliable water.	Moderate: Site is a good example of an open camp site adjacent to a watercourse. The site features a representative landform element, a variety of stone artefacts and an aesthetically pleasing context amongst outcropping stone.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Moderate: The site is aesthetically pleasing, contains a small sample variety of stone artefacts.	Moderate: A good example of an open stone artefact site with easily identifiable features. Further investigation may provide subsurface material.	Moderate
NE71	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE72	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Low: Ambiguous scar with no dry face makes it a poor example of a scar tree.	Low: Tree is ambiguous and dry face is missing. It would be difficult to determine if of Aboriginal origin.	Low: Poor example of scar and tree.	Low: Dead and decaying tree scar.Poor example of its kind.	Low
NE73	Artefact scatter, PAD	Moderate: Crest landform directly adajcent to stream with outcropping granite serving as a protectant to disturbance indicates that the site could have retained good subsurface potential.	Moderate: Relatively unique instance of crest/knoll occuring directly adajcent to a stream and potentially a freshwater spring that may have provided more reliable water.	Moderate: Site is a good example of an open camp site adjacent to a watercourse. The site features a representative landform element, a variety of stone artefacts and an aesthetically pleasing context amongst outcropping stone.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Moderate: The site is aesthetically pleasing, contains a small sample variety of stone artefacts.	Moderate: A good example of an open stone artefact site with easily identifiable features. Further investigation may provide subsurface material.	Moderate
NE74	Isolated find	Low: Site is isolated under a tree halo exposure and surrounding hill crest has highly eroded, skeletal soils visible in areas of recent tree felling disturbance.	Moderate: A quartzite hammerstone is a relatively rare stone artefact type	Moderate: Although the site has a rarer artefact type, it is not represent a good example of what the artefact would be used for in its current context.	Low: Site is moderately to highly disturbed from vegetation clearance and pasture improvement.	Low: The site itself does not have good educationbal value, but the artefact is useful in demonstrating the stone tool manufacture process.	Low: Relatively rare stone artefact type but in a disturbed context. Value mainly pertains to the artefact itself and not the site context.	Low
NE75	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley to highly disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately to highly disturbed context.	Low
NE76	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE77	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE78	Artefact scatter, PAD	Moderate: Crest landform directly adajcent to stream with outcropping granite serving as a protectant to disturbance indicates that the site could have retained good subsurface potential.	Moderate: Relatively unique instance of crest/knoll occuring directly adajcent to a stream.	Moderate: Site is a good example of an open camp site adjacent to a watercourse. The site features a representative landform element, a variety of stone artefacts and an aesthetically pleasing context amongst outcropping stone.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Moderate: The site is aesthetically pleasing, contains a small sample variety of stone artefacts.	Moderate: A good example of an open stone artefact site with easily identifiable features. Further investigation may provide subsurface material.	Moderate

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE79	Grinding groove, artefact scatter, PAD	High: Grooves and artefacts present at open camp site at its periphery could yield unique information about this site complex. .	High: Grinding grooves on silcrete outcrops are rare locally and very rare regionally.	High: Site demonstrates the princple characteristics of a grinding groove site well.	Moderate: Grooves are good condition. Surrounding land surface has been disturbed by clearing and possibly ploughing over some of the bedrock expanses. Any associated subsurface stone artefact potential is likely to be affected by farming land use practices.	High: Very good and easily identifiable examples of grinding grooves and stone artefacts.	High: Unique site type, extensive groove examples, reasearch potential and high educational value.	High
NE80	Grinding groove, PAD	High: Grinding grooves on silcrete expanse. Likely to be linked to nearby site NE_79 that occurs down slope. Broader research questions about silcrete grinding grooves locally and regionally.	High: Grinding grooves on silcrete outcrops are rare locally and very rare regionally.	High: Site demonstrates the princple characteristics of a grinding groove site well.	Moderate: Grooves are good condition. Surrounding land surface has been disturbed by clearing and possibly ploughing over some of the bedrock expanses. Any associated subsurface stone artefact potential is likely to be affected by farming land use practices.	High: Very good and easily identifiable examples of grinding grooves and stone artefacts.	High: Unique site type, extensive groove examples, reasearch potential and high educational value.	High
NE81	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley to highly disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately to highly disturbed context.	Low
NE82	Artefact scatter	Low: Common site type, low artefact frequency, in a heavily ploughed paddock with rock collecting visible.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley to highly disturbed in a visibly ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE83	Isolated find, PAD	Moderate: Greywacke axe blank is on a crest with some smaller outcrops of greywacke. There is not enough evidence to indicate a quarry but subsurface investigation could establish this uncertaintity.	Moderate: Axe blanks are relatively rare artefact types in open camp sites.	Low: The site features a good example of an axe blank, the limited artefacts do not make it a good example of an open camp site.	Moderate: Grewacke outcrop is in good condition but impacts to nearby stone artefacts or subsurface condition is unknown.	Low: Although the site contains an easily identifable artefact type, it is limited to the isolated find. There are much better examples of the same artefact type amongst greater artefacts.	Moderate: Open camp site with some subsurface potential to determine if small greywacke outcrops were sourced for stone tool manufacture.	Moderate
NE84	Isolated find	Low: Common site type, isolated artefact.	Moderate: Large core of this size is unique outside of the larger 'stone quarry' sites identified during this assessment.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley to highly disturbed in a cleared and ploughed paddock with evidence of rock collecting.	Moderate: Artefact is a good educational example of raw material in its initial stages of use.	Low: Common site type and characteristics in moderately to highly disturbed context.	Low
NE85	Artefact scatter	Low: Common site type, low artefact frequency, eroded crest on rocky and skeletal soils.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance and pasture improvement.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics.	Low
NE86	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform a very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: The site has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE87	Artefact scatter	Low: Common site type, low artefact frequency, eroded crest on rocky and skeletal soils and recently visibly ploughed.	Moderate: Site featuring greywacke axe blanks are relatively rare artefact types in open camp sites.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderately disturbed from vegetation clearance, pasture improvement and recent visible ploughing.	Moderate: The site has some good examples of stone artefacts including a greywacke axe blank. Artefacts alone have more value than degraded landscape context. Possibly more value in collecting the artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE88	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are very common for this site type. However, quartzite is a slightly rarer material type in the landscape.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: The site has few examples of artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE89	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE90	Isolated find	Low: Common site type, isolated artefact.	Moderate: Axe blanks are relatively rare artefact types.	Low: The site features an example of an axe blank, the limited artefacts do not make it a good example of an open camp site.	Low: Site is moderatley disturbed in a visibly ploughed paddock.	Low: Although the site contains an easily identifable artefact type, it is limited to the isolated find. There are much better examples of the same artefact type amongst greater artefacts.	Low: Rarer stone artefact type but isolated nature and disturbed context place most of the value in the artefact alone.	Low
NE91	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are very common for this site type.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a visibly ploughed paddock and adjacent evidence of rock cobble collectin in the fields.	Low: The site has few examples of artefacts whichs are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE92	Isolated find	Low: Common site type, isolated artefact.	Low: Site contents and landform are common for a site considered to be 'background scatter'.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type.	Low: Site is moderatley disturbed in a cleared and ploughed paddock.	Low: The site has few examples artefacts which are not easily identifiable examples of stone artefacts.	Low: Common site type and characteristics in moderately disturbed context.	Low
NE93	Grinding groove, artefact scatter, PAD	High: Grooves and artefacts present at open camp site at its periphery could yield unique information about this site complex.	High: Grinding grooves on silcrete outcrops are rare locally and very rare regionally.	Low: The site is limited to a few grooves and does not represent the principle characteristics of grinding groove sites well.	Moderate: Grooves are good condition. Surrounding land surface has been disturbed by clearing and possibly ploughing over some of the bedrock expanses. Any associated subsurface stone artefact potential is likely to be affected by farming land use practices.	Moderate: Easily identifiable site type for explantation of stone grinding process.	Moderate: Rarer site type but not good example of site type and limited research potential.	Moderate

Site name:	Site type	Research potential	Rarity	Representativeness	Integrity	Educational value	Overall significance	Significance rating
NE94	Artefact scatter, PAD	Moderate: Crest landform directly adajcent to stream with outcropping granite serving as a protectant to disturbance indicates that the site could have retained good subsurface potential.	Moderate: Relatively unique instance of crest/knoll occuring directly adajcent to a stream.	Low: Sparse assemblage and artefact types are not exceptional examples of this site type. Excavation would establish if further subsurface examples exist.	Moderate: Although site has been historically cleared, it is unlikely to have been subject to repeated farming disturbance such as ploughing.	Low: The surface expression has few examples artefacts whichs are not easily identifiable examples of stone artefacts.	Moderate: Although the surface expression of the site has limited signifcance, further investigation through test excavation would clarify if the site has subsurface potential.	Moderate
NE95	Isolated find	Low: Common site type, isolated	Low: Site contents and landform a very	Low: Sparse assemblage and artefact types	Low: Site is moderatley disturbed in a visibly	Low: The site has few examples artefacts	Low: Common site type and	Low
NE96	Scarred tree	Low: The site has limited research potential apart from its landscape context and superficial characteristics.	Moderate: Relatively rare site type locally and regionally due to widespread vegetation clearance.	Moderate: Good example of scar with extensive scar overgrowth	Moderate: The tree is dead but in relatively good condition, however scar dry face is missing	Low: Small and obscure example of scar. Not easily identifiable.	Moderate: Example of a scar tree, however tree is dead and will continue to deteriorate.	Moderate

Appendix E

Aboriginal site data summaries

Site name:	Date and time:	AHIMS	Zone	Easting	Northing	Recorder:	Landform element:	Elevation:	Transect number:	Site type	Artefact count:	Description	Soil landscape	Distance to water (m)	Geology	Exposure type:	Land use:	Vegetation:	Exposure visibility (%):	Ground disturbance:	Disturbance levels
NE01	20/05/2018 23:55	TBC	56	367291	6611743	Ryan Desic	Hillcrest	1031	2	Artefact scatter	2	Two silcrete flakes on a hill crest near the confluence of two streams.	Ironstone	127	unnamed	Bedrock	Farming-low intensity	Revegetated	80	Moderate	Cleared; grazing
NE02	21/05/2018 1:01	TBC	56	366870	6611364	Ryan Desic	Hillslope	1039	4	Isolated find	1	Isolated silcrete core identified on a hill slope context. Site is amongst minor pavement silcrete outcropping.	Ironstone	92	Sandon beds	Erosion scar	Farming-low intensity	Cleared	80	Moderate	Cleared; grazing
NE03	30/07/2018 23:17	TBC	56	369597	6609122	Ryan Desic	Hillcrest	1002	86	Isolated find	1	Isolated silcrete flaked piece identified on hill slope.	Gostwyck	97	Gostwyck Adamellite		Farming-low intensity	Cleared	80	Moderate	Ploughed field
NE04	21/05/2018 22:53	TBC	56	367310	6611497	Ryan Desic	Footslope	1029	17	Grinding groove	0	A single grinding groove on an outcropping boulder of course silcrete material.	Powers Creek	82	unnamed	Bedrock	Conservation	Revegetated	90	Low	Cleared; grazing
NE05	21/05/2018 23:08	TBC	56	367258	6611463	Ryan Desic	Footslope	1030	17	Isolated find	1	Silcrete distal flake isolated find on a footslope landform	Fairfield variant b	69	unnamed	Scald	Farming-low intensity	Grasslands	40	Low	Cleared; grazing
NE06	21/05/2018 23:34	TBC	56	367195	6611269	Ryan Desic	Hillcrest	1041	18	Isolated find	1	Single greywacke core identified on hill crest landform	Fairfield variant b	170	unnamed	Cattle track	Farming-low intensity	Cleared	30	Low	Cleared; grazing
NE07	22/05/2018 0:55	TBC	56	366969	6610650	Ryan Desic	Hillcrest	1052	21	Artefact scatter	3	Open artefact scatter identified amongst large silcrete outcrop that resemble rounded granite torfields and pavements. Site fits the soil landscape description of Saumarez	Fairfield variant b	105	unnamed	Scald	Farming-low intensity	Cleared	10	Low	Area fenced for regrowth conservation
NE08	22/05/2018 2:45	TBC	56	368261	6610988	Ryan Desic	Stream channel	1023	24	Isolated find	1	Isolated silcrete flake identified adjacent to a stream channel of a first order stream.	Fairfield variant b	35	Gostwyck Adamellite	Bedrock	Farming-low intensity	Grasslands	100	Moderate	Associated with incised stream bank erosion
NE09	22/05/2018 5:52	TBC	56	367526	6609255	Ryan Desic	Hillcrest	1054	79	Grinding groove, artefact scatter, PAD	12	Approximately 100 grinding grooves counted on extensive outcropping silcrete pavement. Outcropping more aptly fits the soil landscape description of Saumarez. Stone artefacts also identified on nearby ground soil	Gostwyck	226	Gostwyck Adamellite	Scald	Farming-low intensity	<Null>	70	Low	Site largely avoided by farming activity due to inaccessible nature
NE10	22/05/2018 22:03	TBC	56	366253	6615198	Ryan Desic	Spurcrest	1018	28	Isolated find, PAD	1	Single basalt retouched flake representing an axe blank identified within vehicle track cutting on spur crest between the confluence of two streams.	Fairfield variant b	74	Sandon beds	Dam wall	Farming-low intensity	Cleared	90	High	Disturbed vehicle track cutting, highly disturbing the context of the find.
NE11	22/05/2018 23:36	TBC	56	366088	6615000	Ryan Desic	Spurcrest	1021	28	Isolated find	1	Large chert boulder used as a core identified near exotic pine tree on crest landform.	Fairfield variant b	182	Sandon beds	Cattle track	Farming-low intensity	Cleared	60	Moderate	Potential historical site: exotic plantings

Site name:	Date and time:	AHIMS	Zone	Easting	Northing	Recorder:	Landform element:	Elevation:	Transect number:	Site type	Artefact count:	Description	Soil landscape	Distance to water (m)	Geology	Exposure type:	Land use:	Vegetation:	Exposure visibility (%):	Ground disturbance:	Disturbance levels
NE12	22/05/2018 23:51	TBC	56	365943	6615084	Ryan Desic	Dam	1015	28	Isolated find	1	Single chert flake identified on a highly disturbed dam bund wall.	Powers Creek	15	unnamed	Vehicle track	Farming-low intensity	Cleared	80	High	Dam bund wall
NE13	23/05/2018 0:23	TBC	56	366163	6615009	Ryan Desic	Hillcrest	1021	28	Artefact scatter	5	Artefact scatter comprising chert and silcrete material and flake and core artefact types. Identified on vehicle track on crest landform.	Fairfield variant b	114	Sandon beds	Outcropping stone	Farming-low intensity	Cleared	40	Moderate	Gravel vehicle track rutting
NE14	23/05/2018 1:51	TBC	56	365258	6615140	Ryan Desic	Hillcrest	1035	31	Quarry, artefact scatter, PAD	5	Potential quarry site of red jasper. Site comprises multiple extrusions of jasper material with limited evidence of utilisation from nearby flakes and cores. On hill crest landform. Site also features multiple silcrete cores across crest as large stones.	Fairfield variant a	364	Sandon beds	Bedrock	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE15	23/05/2018 2:26	TBC	56	365041	6615131	Ryan Desic	Hillcrest	1037	31	Artefact scatter	7	Open artefact scatter of silcrete and chert cores and one retouched silcrete flake identified distributed across hill crest and hill slope landform	Fairfield variant a	512	Sandon beds	Erosion scar	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE16	23/05/2018 3:01	TBC	56	365045	6614883	Ryan Desic	Hillslope	1035	32	Artefact scatter	4	Three silcrete cores identified on lower hill slope landform near drainage depression.	Ironstone	309	Sandon beds	Modified	Farming-low intensity	Cleared	90	Low	Cleared; grazing
NE17	23/05/2018 23:32	TBC	56	367306	6608186	Ryan Desic	Spurcrest	1023	39	Artefact scatter, PAD	7	Open stone artefact scatter dispersed across spur crest with significant granite outcrop.	Gostwyck	97	Gostwyck Adamellite	Plough line	Farming-intensive	Cleared	80	Low	Cleared; grazing
NE18	24/05/2018 4:04	TBC	56	362906	6607904	Ryan Desic	Plain	1053	44	Isolated find	1	Isolated silcrete core identified in a cultivated/ploughed field paddock on a plain landform.	Fairfield variant a	247	Sandon beds	<Null>	<Null>	<Null>	<Null>	Moderate	Cultivated paddock
NE19	24/05/2018 4:51	TBC	56	363546	6607452	Ryan Desic	Spurcrest	1042	47	Isolated find	1	Isolated chert flake identified in disturbed soil mound adjacent to historical mine shaft opening. Site is on a	Fairfield variant a	81	Sandon beds	<Null>	<Null>	<Null>	<Null>	High	Identified in soil mound next to mine shaft
NE20	24/05/2018 5:14	TBC	56	363619	6607695	Ryan Desic	Hillcrest	1046	47	Isolated find	1	Isolated chert flake identified on a hill crest adjacent to fallen dead tree.	Fairfield variant a	242	Sandon beds	Bedrock	Farming-low intensity	Cleared	100	Moderate	Nearby animal burrowing causing
NE21	24/05/2018 5:45	TBC	56	362472	6607709	Ryan Desic	Spurcrest	1049	49	Quarry, artefact scatter, PAD	5	Greywacke quarry on spur crest near the confluence of two streams. A number of large cores amongst natural material provides this evidence, over 10 artefacts	Fairfield variant a	69	Sandon beds	Erosion scar	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE22	24/05/2018 23:24	TBC	56	367627	6606654	Ryan Desic	Hillcrest	1037	53	Quarry, artefact scatter, PAD	8	Silcrete quarry identified on a hill crest adjacent to a wind break of pines. Outcropping silcrete resembles granite tors and pavements but also occurs in stone and boulder form. Only small portion recorded. Some disturbance rock collection from farming.	Gostwyck	271	Gostwyck Adamellite	Scald	Farming-low intensity	Cleared	80	Moderate	Evidence of rock collecting from farming which has piled many loose stones in mounds across the site.
NE23	25/05/2018 3:45	TBC	56	365401	6607293	Ryan Desic	Hillslope	1040	58	Scarred tree	0	Scarred tree on a hill slope in an open grazing paddock. Tree is dead. Possible coolamon or shield scar. Possibly a yellow box but no leaves present.	Gostwyck	202	Gostwyck Adamellite	N/A	Farming-low intensity	Cleared	0	Low	Cleared; grazing

Site name:	Date and time:	AHIMS	Zone	Easting	Northing	Recorder:	Landform element:	Elevation:	Transect number:	Site type	Artefact count:	Description	Soil landscape	Distance to water (m)	Geology	Exposure type:	Land use:	Vegetation:	Exposure visibility (%):	Ground disturbance:	Disturbance levels
NE24	25/05/2018 4:04	TBC	56	365458	6607443	Ryan Desic	Hillslope	1037	58	Scarred tree	0	Potential scar tree on hill slope landform. Scar has irregular shape and is on a dead tree. Possibly a yellow box tree.	Gostwyck	174	Gostwyck Adamellite	N/A	Farming-low intensity	Cleared	0	Low	Cleared; grazing
NE25	25/05/2018 4:13	TBC	56	365469	6607317	Ryan Desic	Hillslope	1039	58	Scarred tree	0	Potential scar tree on fallen dead tree, possibly a yellow box. On hill slope landform	Gostwyck	209	Gostwyck Adamellite	N/A	Farming-low intensity	Cleared	0	Low	Cleared; grazing
NE26	25/05/2018 4:34	TBC	56	365992	6607157	Ryan Desic	Spurcrest	1021	59	Isolated find	1	Isolated chert flake identified on low spur crest landform at the confluence of a series of first order streams. amongst outcropping granite.	Gostwyck	26	Gostwyck Adamellite	Outcropping stone	Farming-low intensity	Cleared	40	Moderate	Animal burrowing - rabbit
NE27	25/05/2018 5:58	TBC	56	369035	6609198	Ryan Desic	Spurcrest	1004	61	Artefact scatter, PAD	3	Small artefact scatter including one potential basalt or greywacke axe blank on broad spur crest landform adjacent to creek.	Gostwyck	58	Gostwyck Adamellite	Cattle track	Farming-intensive	Cleared	80	Moderate	Evidence of fairly recent ploughing
NE28	27/05/2018 23:29	TBC	56	362720	6602524	Ryan Desic	Spurcrest	997	63	Artefact scatter	3	Rounded silcrete stones dispersed over the spurcrest of an open and cultivated paddock with plough lines visible. Difficult to differentiate machine	Powers Creek	83	unnamed	Scald	Farming-intensive	Cleared	70	Moderate	Highly eroded and evidence of recent ploughing
NE29	28/05/2018 2:56	TBC	56	362422	6602373	Ryan Desic	Spurcrest	1006	66	Artefact scatter	7	Abundant silcrete outcrop amongst aslmost terraced crests above the flood plain. Diificult to differentiate natural fractures from human made.	Bald Knob	386	unnamed	Plough line	Farming-intensive	Cleared	90	Moderate	Highly eroded and evidence of recent ploughing
NE30	28/05/2018 4:56	TBC	56	362316	6602886	Ryan Desic	Spurcrest	998	67	Isolated find	1	Isolated silcrete flake on minor spurcrest to the west of a first order stream. In cultivated paddock.	Kellys Plains	34	Sandon beds	Plough line	Farming-intensive	Cleared	80	Moderate	Plough lines visible. Cultivated paddock.
NE31	28/05/2018 5:42	TBC	56	363021	6603082	Ryan Desic	Hillslope	1000	67	Artefact scatter	4	Open aretfact scatter of silcrete flakes and cores amongst rounded silcrete cobble material. Within and surrounding livestock water troughs causing exposures and disturbance.	Kellys Plains	49	unnamed	Plough line	Farming-intensive	Cleared	70	Moderate	Associated with livestock watering trough excavation and animal track exposures.
NE32	29/05/2018 0:40	TBC	56	359943	6601418	Ryan Desic	Plain	1001	70	Isolated find	1	Basalt core adjacent to Salisbury Waters amongst very small basalt stone outcrop on the stream bank. Appears to have been flaked	Powers Creek	45	Sandon beds	Outcropping stone	Farming-low intensity	<Null>	80	Low	Cleared; grazing
NE33	29/05/2018 1:28	TBC	56	360110	6601233	Ryan Desic	Terrace	1007	71	Quarry, artefact scatter, PAD	11	Site centred around large basalt boulder outcrop of three large boulders. Artefacts surrounding boulders appear to have been made from the source material.	Kellys Plains	267	Sandon beds	Outcropping stone	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE34	29/05/2018 5:35	TBC	56	359448	6599120	Ryan Desic	Hillcrest	1039	73	Isolated find	1	Isolated basalt core identified adjacent to basalt boulder outcrop on hill crest adajcent to historical basalt quarry.	Bald Knob	364	Sandon beds	Outcropping stone	Farming-low intensity	Cleared	70	Moderate	Plough lines visible. Cultivated paddock.
NE35	29/05/2018 23:04	TBC	56	358377	6599349	Ryan Desic	Plain	1014	74	Scarred tree	0	Scar tree on plain with three scars: facing south east and north, all are similar height and dimensions, western and southern scars do not have much insect damage but eestern scar does. Tree may	Powers Creek	130	undifferentiated	Erosion scar	Farming-intensive	Cleared	80	<Null>	<Null>

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NE36	30/05/2018 2:19	TBC	56	363185	6600963	Ryan Desic	Hillcrest	1036	75	Isolated find	1	Quartzite or silcrete core identified on hill crest. Amongst other outcropping material such as red jasper but none of the surrounding material was observed to have been worked.	Ironstone	181	unnamed	N/A	Farming-intensive	Cleared	80	Moderate	Highly eroded and evidence of recent ploughing
NE37	30/05/2018 22:07	TBC	56	366758	6609752	Ryan Desic	Hillslope	1058	0	Scarred tree	0	Possible scar tree dry face is damaged and scar goes down to base of tree which could be the product of later damage.	Gostwyck	338	Gostwyck Adamellite	<Null>	<Null>	<Null>	70	Low	Cleared; grazing
NE38	30/05/2018 23:46	TBC	56	368160	6609949	Ryan Desic	Spurcrest	1019	77	Artefact scatter, PAD	2	Open artefact scatter on a low spur crest overlooking third order stream. Site is amongst outcropping granite boulders.	Gostwyck	160	Gostwyck Adamellite	Scald	Pastoral/grazing	Cleared	80	Low	Outcropping bedrock
NE39	31/05/2018 1:39	TBC	56	367447	6609689	Ryan Desic	Drainage Depression	1034	77	Scarred tree	0	Scar tree on dead tree with two scars one facing west and one north in a drainage channel landform unit. Possibly yellowbox species.	Gostwyck	11	Gostwyck Adamellite	N/A	Pastoral/grazing	Cleared	70	<Null>	<Null>
NE40	31/05/2018 4:27	TBC	56	367392	6609207	Ryan Desic	Ridge	1053	79	Isolated find	1	Isolated quartz flake identified approximately 130 m west of Grinding groove site NE09. Site identified on bedrock pavement.	Gostwyck	264	Gostwyck Adamellite	Sheet wash	Pastoral/grazing	Cleared	90	Low	Oucropping bedrock
NE41	31/05/2018 5:12	TBC	56	366675	6609320	Ryan Desic	Spurcrest	1052	79	Artefact scatter, PAD	1	Open artefact scatter identified on rocky outcrop of granite on a spur crest.	Gostwyck variant a	95	Gostwyck Adamellite	<Null>	<Null>	<Null>	<Null>	Low	Amongst outcropping boulders
NE42	31/05/2018 6:23	TBC	56	366079	6609918	Ryan Desic	Ridge	1070	79	Isolated find	1	Isolated chert core identified on rocky granite hill crest .	Gostwyck	80	Gostwyck Adamellite	Erosion scar	<Null>	<Null>	70	Moderate	Extensive rabbit burrowing
NE43	31/05/2018 22:55	TBC	56	368244	6612115	Ryan Desic	Hillcrest	1032	80	Quarry, artefact scatter, PAD	7	Greywacke outcrop with adjacent flakes and cores.	Fairfield variant b	194	Sandon beds	<Null>	<Null>	<Null>	<Null>	Low	Cleared; grazing
NE44	31/05/2018 23:59	TBC	56	368098	6611783	Ryan Desic	Bank	1012	81	Artefact scatter	19	Scatter of smaller artefacts eroding out of a creek bed. Featuring a variety of artefact types.	Powers Creek	12	Sandon beds	Stream bank	Farming-low intensity	Cleared	60	High	Extensive stream bank erosion
NE45	1/06/2018 1:05	TBC	56	367686	6612583	Ryan Desic	Hill slope	1031	81	Scarred tree	0	Potential scar tree - dry face missing. Expert advice may be required.	Fairfield variant b	132	Sandon beds	Bedrock	Farming-low intensity	Cleared	70	<Null>	<Null>
NE46	1/06/2018 1:31	TBC	56	367575	6612074	Ryan Desic	Spurcrest	1032	81	Artefact scatter	6	Artefact scatter identified on southern edge of hill crest.	Fairfield variant b	210	Sandon beds	<Null>	<Null>	<Null>	70	Moderate	Slope erosion

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NE47	1/06/2018 1:52	TBC	56	367512	6612242	Ryan Desic	Hillcrest	1036	81	Scarred tree	0	Partially felled, possible scar tree but no dry face to determine conclusivley. Scar is about 10cm width	Fairfield variant b	331	Sandon beds	Scald	Farming-low intensity	Cleared	80	<Null>	<Null>
NE48	1/06/2018 2:00	TBC	56	367495	6612223	Ryan Desic	Hillcrest	1037	81	Isolated find	1	Rounded quartzite stone, possible hammerstone or manuport.	Fairfield variant b	315	Sandon beds	Scald	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE49	1/06/2018 2:27	TBC	56	367124	6612680	Ryan Desic	Spurcrest	1039	83	Scarred tree	0	Felled potential scar tree on a small spur crest. Tree has been cut down and scar is cut in half. Base of tree is missing.	Fairfield variant b	466	Sandon beds	Bedrock	Farming-low intensity	Cleared	70	Low	Cleared; grazing
NE50	1/06/2018 4:22	TBC	56	367752	6611268	Ryan Desic	Hillcrest	1035	85	Isolated find, PAD	1	Large greywacke bifacially retouched flake identified on a hill crest. Potentially an axe blank. Identified near outcroppping greywacke.	Fairfield variant b	298	unnamed	Outcropping stone	Farming-low intensity	Cleared	90	Low	Cleared; grazing
NE51	28/05/2018 1:41	TBC	56	362298	6601584	Ryan Desic	Hillslope	1011	65	Artefact scatter	2	Small artefact scatter near fence line on very gentle hill slope. Features one silcrete flake and one hammer stone.	Kellys Plains	335	unnamed	N/A	Farming-low intensity	Cleared	70	Low	Cleared; grazing
NE52	28/05/2018 1:51	TBC	56	362325	6601723	Ryan Desic	Hillslope	1010	65	Isolated find	1	One basalt flake identified on hill slope landform.	Kellys Plains	277	unnamed	Scald	Farming-low intensity	Cleared	50	Low	Cleared; grazing
NE53	28/05/2018 1:55	TBC	56	362847	6602016	Ryan Desic	Hillslope	1007	65	Isolated find	1	Single hammer stone identified in grazing paddock on very gently inclined slope.	Kellys Plains	211	unnamed	Scald	Farming-low intensity	Cleared	70	Low	Cleared; grazing
NE54	29/05/2018 1:58	TBC	56	359981	6601127	Ryan Desic	Terrace	1007	71	Isolated find	1	Single basalt core on elevated terrace landform	Kellys Plains	338	Sandon beds	Scald	Farming-low intensity	Cleared	20	Low	Cleared; grazing
NE55	29/05/2018 2:01	TBC	56	359902	6600529	Ryan Desic	Terrace	1008	71	Isolated find	0	Single basalt core identified on elevated terrace landform.	Kellys Plains	764	Sandon beds	Scald	Farming-low intensity	<Null>	60	Low	Cleared; grazing
NE56	30/05/2018 2:04	TBC	56	362877	6601452	Ryan Desic	Hillslope	1024	75	Artefact scatter	2	Two silcrete cores identified on hill slope lanform near first order stream.	Bald Knob	67	unnamed	Scald	Farming-low intensity	Cleared	80	Low	Cleared; grazing
NE57 - Historical site	30/05/2018 5:29	Not applicable	56	363585	6601932	Ryan Desic	Hillcrest	1015	76	Dry stone wall	0	Outcropping basalt boulder feature on low hill crest. Site comprises linear dry stone wall surrounded by large circular rings. Nature of evidence unknown at this stage	Bald Knob	159	unnamed	Sheet wash	Farming-low intensity	Cleared	80	Low	Stones have been moved by humans, but nature is currently unknown
NE58	30/07/2018 23:35	TBC	56	370022	6609070	Ryan Desic	Hillcrest	1000	86	Artefact scatter, PAD	7	Stone artefact scatter identified on a hill crest to the west of Saumarez Creek. Wp009-012	Gostwyck	155	Gostwyck Adamellite	Outcropping stone	Farming-low intensity	Cleared	60	Moderate	Ploughing
NE59	31/07/2018 0:53	TBC	56	369402	6609025	Ryan Desic	Hillcrest	1009	87	Isolated find	1	Single isolated silcrete core identified amongst small cobbles of silcrete and quartz on a very broad hill crest. Nearby cobbles inspected but with no sign of human modification.	Gostwyck	314	Gostwyck Adamellite	Erosion scar	Farming-low intensity	Cleared	80	Moderate	Ploughed paddock

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NE60	31/07/2018 2:13	TBC	56	367391	6609737	Ryan Desic	Spurcrest	1036	89	Isolated find	1	Isolated silcrete core identified on spur crest landform. Site is nearby some outcropping silcrete bedrock that is common and continues across the landform.	Gostwyck	50	Gostwyck Adamellite	Erosion scar	Farming-low intensity	Cleared	0	Moderate	Cleared and historically ploughed
NE61	1/08/2018 0:42	TBC	56	364775	6613857	Ryan Desic	Hillslope	1046	95	Scarred tree	0	Rounded irregular shaped scar tree on hill slope 20 m from drainage depression. Tree is dead and has suffered massive limb loss. Scar dry face has a modern cut across it. Difficult to determine if of Aboriginal origin.	Ironstone	253	Sandon beds	Erosion scar	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE62	1/08/2018 1:18	TBC	56	364684	6613830	Ryan Desic	Hillslope	1047	95	Isolated find	1	Single large greywacke flake identified in a pile of greywacke and silcrete cobbles - the result of paddock rock clearing. As such, context is highly disturbed.	Ironstone	296	Sandon beds	N/A	Farming-low intensity	Cleared	0	High	The rock pile is the result of rock gathering and piling. Site is out of context.
NE63	1/08/2018 2:02	TBC	56	364856	6613629	Ryan Desic	Spurcrest	1044	96	Isolated find	1	Single retouched greywacke flake on small spur crest, overlooking 1st order crest. Artefact is amongst smaller cobbles of natural grey wacke, but there is evidence of rock collecting a piling.	Ironstone	38	Sandon beds	N/A	Farming-low intensity	Cleared	80	Moderate	Rock collecting and cluster
NE64	1/08/2018 4:07	TBC	56	365368	6615010	Ryan Desic	Hillslope	1027	97	Isolated find	1	Isolated silcrete core on hill slope landform. Site is down slope from NE14 and isolated. Very likely to have rolled down slope post-deposition.	Fairfield variant a	195	Sandon beds	Scald	Farming-low intensity	Cleared	60	<Null>	<Null>
NE65	1/08/2018 4:48	TBC	56	365546	6613878	Ryan Desic	Stream_channel	1029	98	Isolated find	1	Isolated silcrete flaked piece identified on stream bank.	Powers Creek	3	unnamed	Scald	Farming-low intensity	Cleared	80	Moderate	Stream bank erosion
NE66	2/08/2018 2:48	TBC	56	367205	6612854	Ryan Desic	Spurcrest	1040	104	Artefact scatter	2	Two small silcrete flakes identified on a disturbed mound on a small spur crest. Area appears to have been excavated by farming practices.	Fairfield variant a	657	Sandon beds	Stream bank	Farming-low intensity	Cleared	70	High	Excavated mounds from farming practices
NE67	2/08/2018 3:19	TBC	56	367572	6613014	Ryan Desic	Spur crest	1049	104	Scarred tree	0	Potential modified tree. Tree is dead and hollow with no dry face. Scar has long oval shape and scar splits at the top. No visible dry face and poor condition make determination difficult.	Fairfield variant a	469	Sandon beds	Modified	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE68	2/08/2018 22:29	TBC	56	367612	6611341	Ryan Desic	Hillslope	1032	106	Grinding groove, artefact scatter, PAD	7	Grinding groove site of 12 grooves across five locals of outrcropping silcrete bedrock. A number of surface artefacts were identified amongst debris within the largest irregular groove. Some grooves continue below the surface which is the product of recent sediment. Site includes a large ground edge implement.	Fairfield variant b	375	unnamed	N/A	Farming-low intensity	Cleared	80	Low	Bedrock and grooves alone are not damaged.
NE69	2/08/2018 23:55	TBC	56	367261	6610932	Ryan Desic	Hillslope	1048	138	Isolated find	1	Isolated silcrete core identified within a cattle track exposure adjacent to a fence line on a broad plain	Fairfield variant b	270	unnamed	Bedrock	Farming-low intensity	Cleared	80	High	High erosion from cattle tread

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NE70	3/08/2018 0:46	TBC	56	365894	6609282	Ryan Desic	Hillcrest	1047	110	Artefact scatter, PAD	19	Open artefact scatter identified on a rocky knoll/hillcrest landform amongst outcropping granite boulder and bedrock expanses. Density of artefacts indicates PAD. Site is next to watercourse possibly near spring which is visible directly nearby in stream.	Julia Gully	58	Gostwyck Adamellite	Fence line	Farming-low intensity	Cleared	80	Moderate	Cleared
NE71	3/08/2018 1:58	TBC	56	365728	6608709	Ryan Desic	Hillcrest	1058	110	Isolated find	1	Isolated silcrete flake identified amongst outcropping granite boulders.	Gostwyck	358	Gostwyck Adamellite	Bedrock	Farming-low intensity	Cleared	80	Low	Protected from outcropping bedrock
NE72	3/08/2018 2:02	TBC	56	365748	6608714	Ryan Desic	Hillcrest	1058	110	Scarred tree	0	Potential scar tree identified on hill crest. Tree is dead and scar shape is oval but slightly irregular. Scar is on a convex curve of tree trunk.	Gostwyck	354	Gostwyck Adamellite	Bedrock	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE73	3/08/2018 3:44	TBC	56	366311	6606963	Ryan Desic	Hillcrest	1040	111	Artefact scatter, PAD	9	Scatter of artefacts identified in fenced area on rocky granite hill crest outcrop. Site continues around wp37. Localised highly disturbed areas from livestock troughs and rabbit burrows.	Gostwyck	245	Gostwyck Adamellite	<Null>	Farming-low intensity	Cleared	80	High	Frequent rabbit burrows and stock trough. But surrounding area may have PAD.
NE74	3/08/2018 5:48	TBC	56	362222	6607961	Ryan Desic	Spurcrest	1054	112	Isolated find	1	Isolated quartzite hammerstone identified on spur crest landform on exposure under living tree. Both ends of hammerstone show signs of crushing.	Fairfield variant a	88	Sandon beds	Bedrock	Farming-low intensity	Cleared	80	Moderate	Cleared and rabbit burrows
NE75	3/08/2018 22:34	TBC	56	362757	6608541	Ryan Desic	Hillslope	1060	114	Isolated find	1	Isolated silcrete flake identified on large sheetwash exposure on gentle hill slope.	Fairfield variant a	338	Sandon beds	Cattle track	Farming-low intensity	Cleared	80	High	Bund near vehicle track
NE76	3/08/2018 23:01	TBC	56	363806	6607990	Ryan Desic	Spurcrest	1039	115	Isolated find	1	Isolated silcrete flake identified on vehicle track next to ploughed paddock.	Fairfield variant a	85	unnamed	Vehicle track	Farming-low intensity	Cleared	90	High	Vehicle track cutting
NE77	4/08/2018 2:57	TBC	56	364110	6609052	Ryan Desic	Hillslope	1069	139	Isolated find	1	Isolated silcrete scraper identified beneath a tree halo exposure on a hill slope.	Fairfield variant a	48	Gostwyck Adamellite	Vehicle track	Farming-low intensity	Cleared	<Null>	Moderate	Sheet wash
NE78	4/08/2018 3:45	TBC	56	365161	6609466	Ryan Desic	Spurcrest	1066	139	Artefact scatter, PAD	2	Open artefact scatter identified on broad rocky knoll/hillcrest of granite. Landform is associated with PAD.	Gostwyck	108	Gostwyck Adamellite	Erosion scar	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE79	4/08/2018 4:12	TBC	56	365190	6609962	Ryan Desic	Hillslope	1072	140	Grinding groove, artefact scatter, PAD	2	Grinding groove site identified on outcropping silcrete expanses at four locales. A total of 17 grooves counted. Two stone artefacts identified in some debris accumulated in largest groove.	Kellys Plains	57	unnamed	Scald	Farming-low intensity	Cleared	<Null>	Low	Land cleared but grooves are in good condition.

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NE80	4/08/2018 4:42	TBC	56	365436	6610068	Ryan Desic	Hillcrest	1081	140	Grinding groove, PAD	0	Grinding groove site identified on outcropping silcrete expnases at two locales. First locale has six grooves and second locale has one groove.	Kellys Plains	292	unnamed	Bedrock	Farming-low intensity	Cleared	<Null>	<Null>	Land cleared but grooves are in good condition.
NE81	5/08/2018 22:12	TBC	56	364358	6602546	Ryan Desic	Plain	999	122	Isolated find	1	Isolated silcrete flake identified on a vehicle track in disturbed context.	Powers Creek	15	unnamed	Bedrock	Farming-low intensity	Cleared	80	Moderate	Vehicle track cutting
NE82	7/08/2018 4:28	TBC	56	365289	6613096	Ryan Desic	Hillslope	1041	133	Artefact scatter	2	Two silcrete flakes identified on hill slope directly adjacent to drainage depression.	Ironstone	18	Sandon beds	Vehicle track	Farming-low intensity	Cleared	80	Moderate	Cleared and ploughed
NE83	7/08/2018 5:13	TBC	56	365430	6613098	Ryan Desic	Spurcrest	1047	134	Isolated find, PAD	1	Isolated retouched greywacke flake identified on a rocky crest of outcropping greywacke. No other artefacts identified but tool could have been sourced directly from outcropping material.	Ironstone	133	unnamed	Scald	Farming-low intensity	Cleared	30	Low	Outcrop
NE84	7/08/2018 5:29	TBC	56	365596	6613099	Ryan Desic	Hillslope	1053	134	Isolated find	1	Large isolated silcrete core identified on hill slope of paddock that has been heavily ploughed and had significant rock collecting.	Ironstone	286	unnamed	Bedrock	Farming-low intensity	Cleared	70	High	Pile of rocks from rock collecting
NE85	8/08/2018 0:17	TBC	56	368593	6604234	Ryan Desic	Spurcrest	<Null>	144	Artefact scatter	2	One silcrete flake and one silcrete core identified on a rocky outcrop of silcrete on a small spur crest. Wp 045 and 046.	Kellys Plains	167	Sandon beds	Modified	Farming-low intensity	Cleared	70	Moderate	Cleared
NE86	8/08/2018 3:37	TBC	56	363268	6607964	Ryan Desic	Stream_channel	1044	148	Isolated find	1	Isolated stone flake identified by Aboriginal site officer. Possibly from brown basalt.	Fairfield variant a	15	Sandon beds	Sheet wash	Farming-low intensity	Cleared	90	Moderate	Stream bank erosion
NE87	8/08/2018 3:43	TBC	56	363473	6608041	Ryan Desic	Spurcrest	1044	148	Artefact scatter	4	Stone artefact scatter identified on small spur crest in a recently ploughed paddock. Site contains silcrete artefacts and a greywacke stone axe blank. Axe blank at wp048	Fairfield variant a	91	unnamed	Stream bank	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE88	8/08/2018 4:03	TBC	56	363842	6608142	Ryan Desic	Hillslope	1044	148	Isolated find	1	Isolated quartzite core identified on recently ploughed hill slope beneath paddock tree.	Fairfield variant a	191	unnamed	<Null>	Farming-low intensity	Cleared	70	Moderate	Cleared and ploughed
NE89	8/08/2018 4:39	TBC	56	366481	6609848	Ryan Desic	Hillslope	1066	136	Isolated find	1	Isolated silcrete flake identified amongst outcropping granite and/or silcrete on hill slope.	Gostwyck	329	Gostwyck Adamellite	Erosion scar	Farming-low intensity	Cleared	80	Moderate	Cleared and ploughed landscape.
NE90	8/08/2018 5:54	TBC	56	366825	6610039	Ryan Desic	Hillslope	1049	136	Isolated find	1	Isolated greywacke retouched cobble. Bifacial flaking evident at both ends of cobble suggesting intial stages of axe blank preparation.	Gostwyck	139	Gostwyck Adamellite	Bedrock	Farming-low intensity	Cleared	<Null>	<Null>	<Null>
NE91	31/07/2018 5:01	TBC	56	368085	6610723	Ryan Desic	Hillcrest	1032	93	Isolated find	1	Isolated core on hill crest. Light grey silcrete but very homogenous with very few coarse inclusions, distinctively not the same material as the silcrete outcropping in the surrounding Saumarez soil landscape.	Saumarez	166	Gostwyck Adamellite	<Null>	Farming-low intensity	Cleared	80	Moderate	Cleared, ploughed, rock collecting.

Site name:	Date and time:	AHIMS	Zone	Easting	Northing	Recorder:	Landform element:	Elevation:	Transect number:	Site type	Artefact count:	Description	Soil landscape	Distance to water (m)	Geology	Exposure type:	Land use:	Vegetation:	Exposure visibility (%):	Ground disturbance:	Disturbance levels
NE92	2/08/2018 2:06	TBC	56	366384	6613124	Ryan Desic	Hill slope	1049	103	Isolated find	1	Isolated silcrete flake identified on a hill slope in a vehicle track exposure.	Fairfield variant a	301	Sandon beds	Erosion scar	Farming-low intensity	Cleared	70	High	Gateway and fence post excavation
NE93	28/08/2018 0:03	TBC	56	367737	6608865	Graham Knuckey	Ridge	1043	153	Grinding groove, artefact scatter, PAD	8	Grinding groove site identified on silcrete bedrock expanse on crest outcrop. Site is associated with a number of stone artefacts in close proximity.	Gostwyck	174	Gostwyck Adamellite	Vehicle track	Farming-low intensity	Cleared	90	Low	Protected amongst rock outcrop
NE94	28/08/2018 0:23	TBC	56	367809	6608634	Graham Knuckey	Spurcrest	1039	152	Artefact scatter, PAD	5	Open artefact scatter identified amongst a rocky granite outcrop on a hill spur crest.	Gostwyck	119	Gostwyck Adamellite	Bedrock	Farming-low intensity	Cleared	80	Low	Cleared but protected
NE95	28/08/2018 0:29	TBC	56	367791	6609245	Graham Knuckey	Hillcrest	1041	153	Isolated find	1	Isolated silcrete flake identified on vehicle track on	Gostwyck	145	Gostwyck Adamellite	Bedrock	Farming-low intensity	Cleared	80	Moderate	Cleared and ploughed
NE96	308/2018 12:33:00 A	TBC	56	367884	6609230	Graham Knuckey	Hillslope	1036	153	Scarred tree	0	Scarred tree identified on hill slope with dry face missing, scar regrowth is considerable.	Gostwyck	96	Gostwyck Adamellite	<Null>	Farming-low intensity	Cleared	<Null>	<Null>	<Null>

Scar tree details

Site name:	Site type	Description	Tree species:	Type:	Living status:	Tree status:	Number of scars:	Scar shape:	Axe marks:	Height above ground (cm):	Condition:
NE23	Scarred tree	Scarred tree on a hill slope in an open grazing paddock. Tree is dead. Possible coolamon or shield scar. Possibly a yellow box but no leaves present.	Eucalypt	Scarred tree	Dead	Lying down	1	Oval	No	30	Rot,Insects_termites,Weathered
NE24	Scarred tree	Potential scar tree on hill slope landform. Scar has irregular shape and is on a dead tree. Possibly a yellow box tree.	Eucalypt	Scarred tree	Dead	Standing	1	Oval	No	36	Insects_termites
NE25	Scarred tree	Potential scar tree on fallen dead tree, possibly a yellow box. On hill slope landform	Eucalypt	Scarred tree	Dead	Standing	1	Oval	No	36	Insects_termites,Weathered
NE35	Scarred tree	Scar tree on plain with three scars: facing south east and north, all are similar height and dimensions, western and southern scars do not have much insect damage but eestern scar does. Tree may be white box.	Eucalypt	Scarred tree	Dead	Standing	3	Irregular	No	Approx 40	Insects_termites,Weathered
NE37	Scarred tree	Possible scar tree dry face is damaged and scar goes down to base of tree which could be the product of later damage.	Eucalypt	Scarred tree	Dead	Standing	2	Oval	No	<Null>	Insects_termites,Weathered
NE39	Scarred tree	Scar tree on dead tree with two scars one facing west and one north in a drainage channel landform unit. Possibly yellowbox species.	Eucalypt	Scarred tree	Dead	Lying down	1	Oval	No	<Null>	Rot,Weathered
NE45	Scarred tree	Potential scar tree - dry face missing. Expert advice may be required.	Eucalypt	Scarred tree	Dead	Standing	1	Oval	No	40	Rot,Weathered
NE47	Scarred tree	Partially felled, possible scar tree but no dry face to determine conclusivley. Scar is about 10cm width.	Eucalypt	Scarred tree	Dead	Partially felled	1	Oval	No	16	Weathered,Rot,Insects_termites
NE49	Scarred tree	Felled potential scar tree on a small spur crest. Tree has been cut down and scar is cut in half. Base of tree is missing.	Eucalypt	Scarred tree	Dead	Lying down	1	Oval	No	<Null>	Rot,Weathered
NE61	Scarred tree	Rounded irregular shaped scar tree on hill slope 20 m from drainage depression. Tree is dead and has suffered massive limb loss. Scar dry face has a modern cut across it. Difficult to determine if of Aboriginal origin.	Eucalypt	Scarred tree	Dead	Standing	1	Round	Indeterminate	<Null>	Rot,Limb_fall,Weathered
NE67	Scarred tree	Potential modified tree. Tree is dead and hollow with no dry face. Scar has long oval shape and scar splits at the top. No visible dry face and poor condition make determination difficult.	Eucalypt	Scarred tree	Dead	Standing	1	Oval	No	60	Weathered,Ringbarked,Rot
NE72	Scarred tree	Potential scar tree identified on hill crest. Tree is dead and scar shape is oval but slightly irregular. Scar is on a convex curve of tree trunk.	Eucalypt	Scarred tree	Dead	Standing	1	Oval	Indeterminate	60	Rot,Insects_termites,Weathered
NE96	Scarred tree	Scarred tree identified on hill slope with dry face missing, scar regrowth is considerable.	Eucalypt	Scarred tree	Dead	Standing	1	Oval	Indeterminate	100	Insects_termites,Rot

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