D.3 Updated Aboriginal Cultural Heritage Assessment (ACHA)

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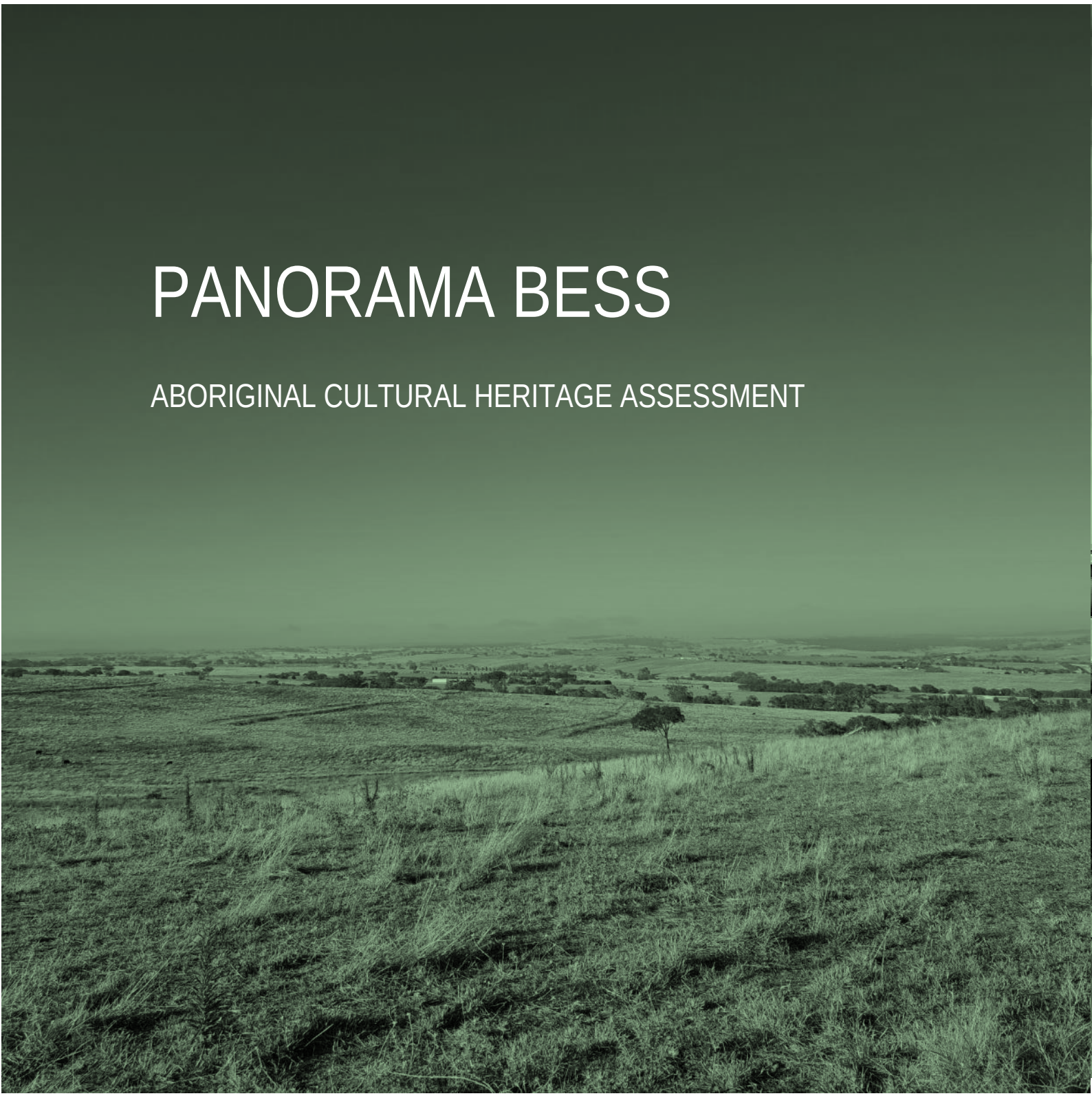
AUSTRAL ARCHAEOLOGY

PANORAMA BESS

ABORIGINAL CULTURAL HERITAGE ASSESSMENT



FINAL REPORT

PANORAMA BESS SUBCO PTY LTD

15 January 2026

RECURRENT ENERGY
A subsidiary of Canadian Solar

DOCUMENT INFORMATION

Project:	Panorama BESS, 800 Mid-Western Highway, Evans Plains, NSW
Services required:	Aboriginal Cultural Heritage Assessment
Client:	Panorama BESS SubCo Pty Ltd
Prepared by:	Peta Rice, Teleeha Thomas, Jake Allen, and Madelaine Firth
Project number:	22091

DOCUMENT HISTORY AND APPROVAL STATUS

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1	1	06/04/2023	SLR Consulting Pty Ltd
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5	1	25/08/2023	SLR Consulting Pty Ltd
6	1	03/04/2025	Recurrent Energy
7	1	18/04/2025	Recurrent Energy
8	1	15/01/2026	Recurrent Energy
8	5		Registered Aboriginal Stakeholders

EXECUTIVE SUMMARY

This report has been prepared for Panorama BESS Subco Pt Ltd and details the Aboriginal Cultural Heritage Assessment (ACHA) of the land situated at 800 Mid-Western Highway, Evans Plains, New South Wales (NSW) (the study area), within the Bathurst Local Government Areas (LGAs) and the parish of Bathurst in the county of Bathurst.

The study area exists within the boundary of Lot 2 DP864272. The study area is located in the suburb of Evans Plains, 5.7 kilometres from the Bathurst Central Business District (CBD).

This ACHA was undertaken to assess the archaeological potential for Aboriginal material as part of a State Significant Development (SSD) being prepared under Part 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), before the proposed development of the study area. The ACHA has been undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (Department of Environment, Climate Change and Water NSW 2010b).

A search of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 11 March 2025 (Client Service ID 983733). The AHIMS search identified 97 previously recorded sites within a 7.5-kilometre search of the study area. The search indicates that isolated artefacts are the predominant site type with over 34% of known sites containing this feature. Artefacts and open camp sites are the next most common site type found in the Bathurst region at over 18%. Most sites identified within the AHIMS search occur on elevated flat areas such as ridges, crests and hillocks or along creek lines. No registered AHIMS sites were identified within the study area.

The study area exists within an open grazing field that appears to have undergone little disturbance to the natural landforms. As a result, the ridgeline within the centre of the study area was assessed as being high archaeological potential, and the associated slopes were assessed as having moderate to low archaeological potential. No surface Aboriginal cultural heritage objects were identified during the survey. Based on the results of the archaeological survey, it was decided that test excavations were necessary to confirm the presence of Aboriginal material within the study area.

Austral completed archaeological test excavations within the study area between 13 March and 17 March 2023. All areas of potential were tested for Aboriginal archaeological material. The study area was split into 3 areas for testing, Testing Areas 1, 2 and 3. Six transects were placed in areas associated with the proposed development impact footprint. Over the 5-day excavation, 43 test pits were excavated within the study area, which comprised 42 500-millimetre by 500-millimetre pits and one 1-metre by 1-metre expansion pit.

The excavation revealed that Testing Area 3 represented low archaeological potential due to the lack of heritage identified in the associated transect (Transect D). Testing Area 2 was originally assessed to be of high potential; however, both transects tested in this area (Transects B and B1) revealed only one artefact. Based on the results of the above testing areas, the number of test pits within Testing Area 1 (Transects A, C and E) was reduced by 9 pits. Transect C, located at the bottom of the slope of Testing Area 1 revealed 3 artefacts within 2 test pits, and Transect E, located in the mid-slope, revealed one artefact. A total of 5 artefacts were identified within the study area.

Based on the results from the test excavations, the ridgeline and the area encompassing Transect C were reassessed as having moderate archaeological potential, and the remainder of the study area was reassessed as having low archaeological potential.

An additional survey was undertaken on 3 October 2025 by Brendan Fisher (Senior Archaeologist, Austral) to assess archaeological potential and identify any archaeological values associated with an addition to the impact footprint as required by Transgrid. One isolated surface artefact was identified during this survey.

The Aboriginal sites identified during this ACHA and their respective significance are described in the table below:

Site / AHIMS	Aboriginal cultural heritage values
Evans Plains AS1 / 44-3-0282	Evans Plains AS1 (AHIMS 44-3-0282) is a low-density artefact scatter located on the mid- to low slope of Testing Area 1. The site is comprised of one grindstone, one multi-platform core, one complete flake and one grinding top stone. As the site is located at the bottom of a slope adjacent to a drainage depression, it is probable that the site is not *in situ.* However, based on the varying artefact types within Evans Plains AS1 (AHIMS 44-3-0282), the site has been assessed to have research and social or spiritual significance.
Evans Plains IF1 / 44-3-0283	Evans Plains IF1 (AHIMS 44-3-0283) is an isolated find located upon the ridgeline within Testing Area 2. The site is comprised of one crystal quartz retouched blade. Due to the rarity of Evans Plains IF1 (AHIMS 44-3-0283), the site is assessed of having high research, social and spiritual significance.
Evans Plains IF2 / 44-3-0327	Evans Plains IF2 (AHIMS 44-3-0327) is an isolated find located on a slope within the additional Transgrid works footprint and was identified during the additional survey in October 2025. The artefact is a proximal quartz flake with low research, social and spiritual significance.

ABORIGINAL COMMUNITY CONSULTATION

Consultation with Aboriginal stakeholders has been completed in accordance with the Consultation Requirements (Department of Environment, Climate Change and Water NSW 2010a). A summary of this process is included below.

Stage	Component	Commenced	Completed
Stage 1	Letters to agencies	15/08/2022	N/A*
	Registration of stakeholders	22/08/2022	5/09/2022
Stage 2	Project information	12/10/2022	N/A*
Stage 3	Review of project methodology	12/10/2022	9/11/2022
Stage 4	Review of ACHA by Aboriginal stakeholders	26/06/2023	24/07/2023
N/A	Update 1	19/01/2024	N/A*
N/A	Update 2	02/07/2024	N/A*
N/A	Update 3	24/03/2025	N/A*

*No response from RAPs required.

Further information on the consultation completed for the project can be found in Section 2 and Volume 2 of this report.

IMPACT ASSESSMENT

The project involves the development, construction, operation and eventual decommissioning of a Battery Energy Storage System (BESS). The BESS will consist of SolBank Bess containers (or enclosures) in a “back-to-back” formation in two north-south aligned rows. The project will involve ground-breaking works to install a 132kV underground cable connecting a 132kV switch building to the substation, stormwater management infrastructure, lighting, and security fencing as well as the upgrade of existing road access to accommodate heavy vehicles. An additional works area was added in late 2025 to facilitate the necessary expansion of an existing Transgrid substation.

The proposed BESS will directly impact both sites identified within the study area. Evans Plains AS1 (AHIMS 44-3-0282) will be directly impacted by the construction of the proposed access road and the BESS, and Evans Plains IF1 (AHIMS 44-3-0283) will be directly impacted by the construction of the BESS; these artefacts have been removed from their original locations and reburied on site. Evans Plains IF2 (AHIMS 44-3-0327) will be avoided by the works.

An evaluation of harm to the Aboriginal sites identified as part of the ACHA is summarised below:

Site name / AHIMS No.	Type of harm	Degree of harm	Consequence of harm
Evans Plains AS1 (AHIMS 44-3-0282)	Direct	Total	Total loss of value
Evans Plains IF1 (AHIMS 44-3-0283)	Direct	Total	Total loss of value
Evans Plains IF2 (AHIMS 44-3-0327)	None	None	No loss of value

AMENDMENT REPORT FOR BESS

NGH prepared an Amendment Report for the BESS detailing changes proposed to the project following submission of the Environmental Impact Statement. The following information regarding the amendments has been taken from the Amendment Report (NGH Consulting 2025).

1.1 DESCRIPTION OF AMENDMENTS

"The proposed amendments to the Project involve a change in technology of the battery energy storage from the Solbank 2.0 system to the Solbank 3.0 system, and an increase in the Development Footprint to address the following issues:

- Improvements in battery energy storage technology since the submission of the EIS mean that the Solbank 3.0 system offers an increased capacity and enhanced energy density per battery container while reducing the BESS layout footprint by approximately 20% or 0.35 ha.
- Increase in the Development Footprint to facilitate civil battering and realignment to improve safety and stability of the Project while reducing civil costs.

The amendments to the Development Footprint have been informed through discussions with the Applicant's civil consultant during the detailed design process.

Comparison of amendments to Project in terms of key parameters (NGH Consulting 2025)

Element	Approved EIS Project	Amended Project	Difference between EIS and Amended Project
Change in technology of the BESS	Solbank 2.0 system	Solbank 3.0 system	Change in technology from the Solbank 2.0 to Solbank 3.0 BESS. Reduction in BESS layout footprint by 0.35 ha.
Development footprint	3.47ha	5.18 ha	+1.71ha
Total change in Development Footprint			**+1.71ha**

1.1.1 CHANGE IN BATTERY ENERGY STORAGE TECHNOLOGY

The chosen BESS technology during the EIS process was the ***Solbank 2.0*** Energy Storage with Lithium Iron Phosphate (LFP) battery chemistry. The main components of the BESS are comprised of 20-foot-high containers with dimensions of 6058 millimetres (mm) x 2438mm x 2896mm each, with a system configuration of 8 racks with 69 battery cells. Other components include a BMS box, liquid cooled chiller with additional systems including thermal management, fire protection and explosion protection systems.

The rated capacity of the ***Solbank 2.0*** system is 2.75MWh with an energy density of 198kWh/m2

Since the submission of the EIS, the BESS technology has been changed. The ***Solbank 3.0*** is a Lithium Iron Phosphate (LFP) battery chemistry. The main components of the BESS are comprised of 20-foot-high containers with dimensions 6058mm x 2438mm x 2896mm each, consisting of a system configuration of 12 racks with 104 battery cells with a smart liquid cooling system with additional systems including thermal management, fire protection and explosion protection systems.

The rated capacity of the ***Solbank 3.0*** system is 4.7MWh with an energy density of 339kWh/m2.

1.1.2 INCREASE IN THE DEVELOPMENT FOOTPRINT

The Development Footprint includes all areas that may be disturbed by the Project during the construction, operation and decommissioning phases. The total area of the Development Footprint identified during the EIS process is **3.47ha**.

Since the submission of the EIS, the Applicant has engaged a civil consultant to undertake a more detailed design process to determine approximate civil requirements. The civil consultant informed the Applicant that shifting the location and orientation of the Development Footprint to the west by approximately 40m would best minimise civil costs. Further discussions informed that the benching of the BESS would require additional civil battering to improve the safety and landform stability of the Project. As a result, the amended Development Footprint would be approximately **5.18ha.**"

1.2 IMPACT ASSESSMENT UPDATE

For the BESS to be connected to the substation, Transgrid identified that the existing substation would need to be expanded by an additional switching bay (adjacent north of the current infrastructure). This additional footprint (whole of the Transgrid substation Lot as well as area westerly adjacent) was assessed by Austral in October 2025 and is included within this ACHA.

These changes were assessed against archaeological and context information gathered from previous work at the site, and no further work or assessment is deemed necessary. The footprint modification has not changed the post-testing recommendations.

RECOMMENDATIONS

The following recommendations are derived from the findings described in this ACHA. The recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, and the findings of the test excavation and the predicted impact of the planning proposal on archaeological resources.

It is recommended that:

1. No further assessment is required to be undertaken for the study area. A 2-metre buffer around the location of Evans Plains IF2 (AHIMS 44-3-0327). This buffer should be fenced with construction fencing during the works to avoid impacts and marked as a no-go zone on construction plans. If, during the project, unexpected finds or human remains are identified, please follow recommendation 2.
2. In the event that unexpected finds occur during any activity within the study area, all works in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed:
    a. If, while undertaking the activity, an Aboriginal object is identified, it is a legal requirement under Section 89A of the NPW Act to notify Heritage NSW as soon as possible.
    b. If human skeletal remains are encountered, all work must cease immediately, NSW Police must be contacted, and they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, Aboriginal stakeholders and Heritage NSW must be notified.
3. It is recommended that Panorama BESS SubCo Pty Ltd (Panorama) continues to inform Aboriginal stakeholders about management of Aboriginal cultural heritage within the study area throughout the duration of the project. The consultation outlined as part of this ACHA is valid for 6 months and must be maintained by the proponent for it to remain continuous, this can be done through a project update sent to Registered Aboriginal Parties. If a gap of more than 6 months occurs, then the consultation process will need to be re-started.
4. A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project.

Further recommendations taken from the Heritage NSW draft conditions are included below:

5. All reasonable steps must be taken to avoid harm, modification of, or impact to Aboriginal objects except as authorised by issued Heritage NSW approval.
6. The Registered Aboriginal Parties must be kept informed about the SSD. The Registered Aboriginal Parties must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the SSD.
7. A procedure for the management of unexpected Aboriginal objects and human remains must be developed in consultation with the Registered Aboriginal Parties and Heritage NSW. The procedure must be prepared in accordance with Heritage NSW guidelines and codes of practice and must be implemented for the duration of the project.

CONTENTS

FIGURES

TABLES

1 INTRODUCTION

Austral Archaeology Pty Ltd (Austral) has been commissioned by Panorama BESS Subco Pty Ltd (the Client) on behalf of Recurrent Energy (the Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed development at 800 Mid-Western Highway, Evans Plains, New South Wales (NSW) (the study area).

1.1 THE STUDY AREA

The study area is located within the eastern extent of the property at 800 Mid-Western Highway, NSW (Lot 2 DP 864272), located approximately 5.8 kilometres from the township of Bathurst within the Bathurst Local Government Area (LGA) and the parish of Mount Pleasant in the county of Bathurst. It is also within the boundaries of the Bathurst Local Aboriginal Land Council (BLALC). It is bounded to the north by the TransGrid substation site, to the east by Robin Hill, to the south by Mid-Western Highway and to the west by Evans Plains.

The location of the study area is shown in Figure 1.1 and Figure 1.2.

1.2 PURPOSE OF THE ACHA

The ACHA was undertaken to assess the potential harm that may occur to Aboriginal cultural heritage values as part of a State Significant Development (SSD) under Part 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), for the Battery Energy Storage System (BESS) of the study area.

The project involves the development, construction, operation and eventual decommissioning of a Battery Energy Storage System (BESS). The BESS will consist of SolBank Bess containers (or enclosures) in a “back-to-back” formation in two north-south aligned rows. The project will involve ground-breaking works to install a 132kV underground cable connecting a 132kV switch building to the substation, stormwater management infrastructure, lighting and security fencing as well as the upgrade of existing road access to accommodate heavy vehicles.

The proposed Panorama BESS footprint was updated in March 2025 to reflect a slight rotation of the components and addition of civil battering for safety and landform stability. These changes are addressed in the Impact Assessment section.

The study area was increased in late 2025 to facilitate necessary construction activities to enable the expansion of the existing substation. The expansion of the substation to the north and west with an additional bay will allow for capacity for the connection of the Panorama BESS. Transgrid has provided the following key aspects of these works:

- Construction of new access roads within the Transgrid perimeter fence (all sides), as well as from the existing access road to the north west corner of the substation, to assist with construction access
- Upgrade of existing access roads on the eastern, southern and western sides
- Civil and earth works in preparation of the substation, including levelling of the area north and west of the current bays for the new bay and installation of a retaining wall
- Construction of underground cabling and associated earthworks from the Project to the Transgrid substation
- Installation and commissioning of electrical infrastructure and associated equipment for an additional substation bay
- Undertaking of structural works on the substation for ongoing functionality and security
- All secondary systems upgrade required to connect the Panorama BESS
- New security fencing
- Enabling works for the new access tracks as well as laydown areas for the substation expansion

- New water pipe and new boundary gutter for water drainage.

Austral undertook a survey of the additional work footprint in October 2025 to account for impacts to any additional archaeological values.

1.3 ASSESSMENT OBJECTIVES

The scope of this ACHA report is based on the legal requirements, guidelines and policies of Heritage NSW, formerly the Office of Environment and Heritage (OEH), formerly, the Department of Environment, Climate Change and Water (DECCW), Department of Environment and Climate Change (DECC) and Department of Environment and Climate (DEC).

The guiding document for this assessment is the *Code of Practice for the Investigation of Aboriginal objects in NSW* (Department of Environment, Climate Change and Water NSW 2010c) (Code of Practice).

Information provided in this assessment includes, but is not limited to:

- The results of archaeological test excavation and surveys.
- An assessment of archaeological significance and management recommendations.
- A literary review of available data, including previous studies/investigations from within and adjacent to the study area.
- Adequate documentation to accompany an Aboriginal Heritage Impact Permit (AHIP) application.
- An assessment of harm posed to Aboriginal objects, places or values as part of the project.
- A description of practical measures that have been used to protect, conserve, avoid or mitigate harm to Aboriginal objects, places and values.

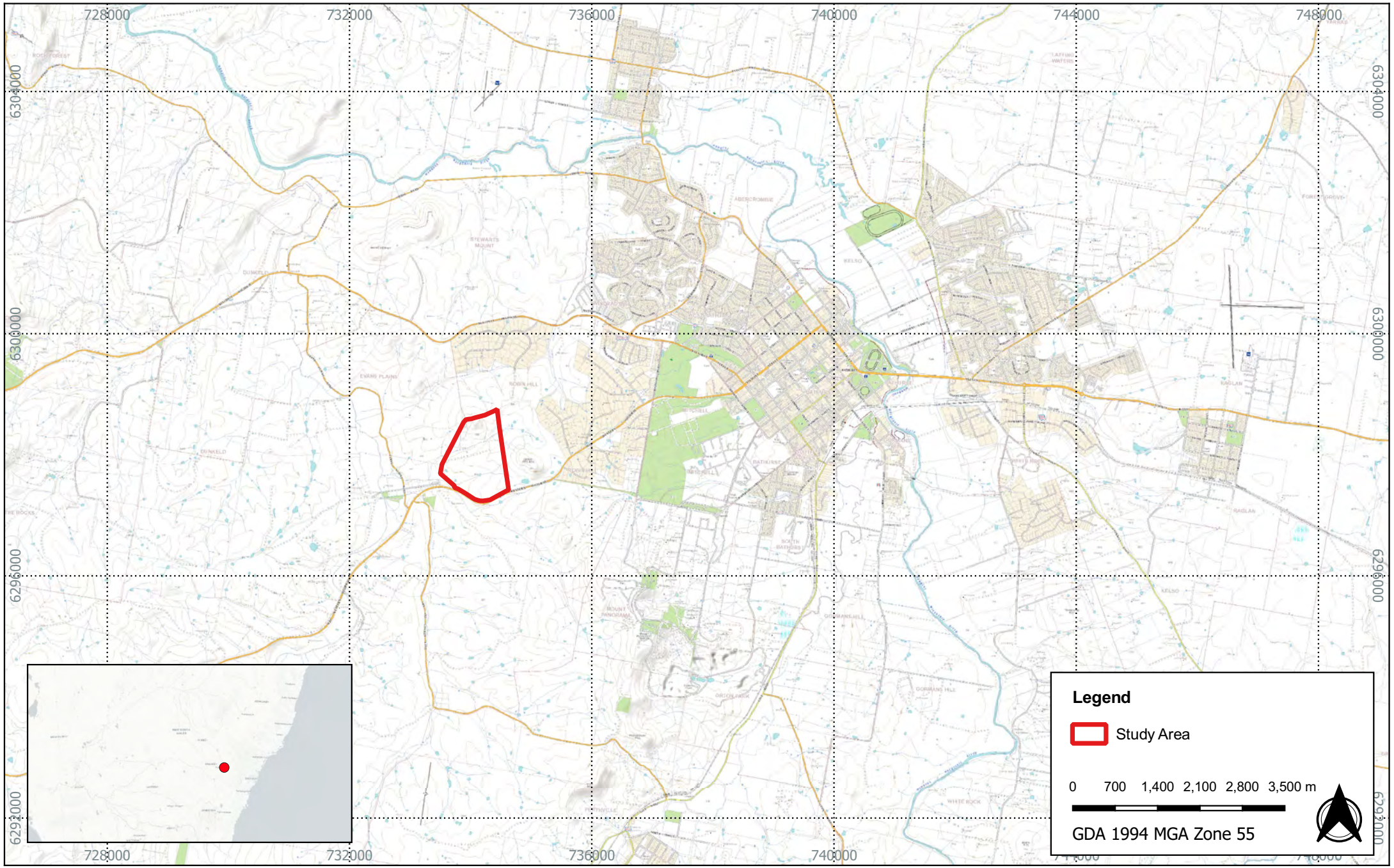

Figure 1.1 - Location of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Basemap,CartoDB Positron Drawn by: Adam Hansford Date: 2025-12-05

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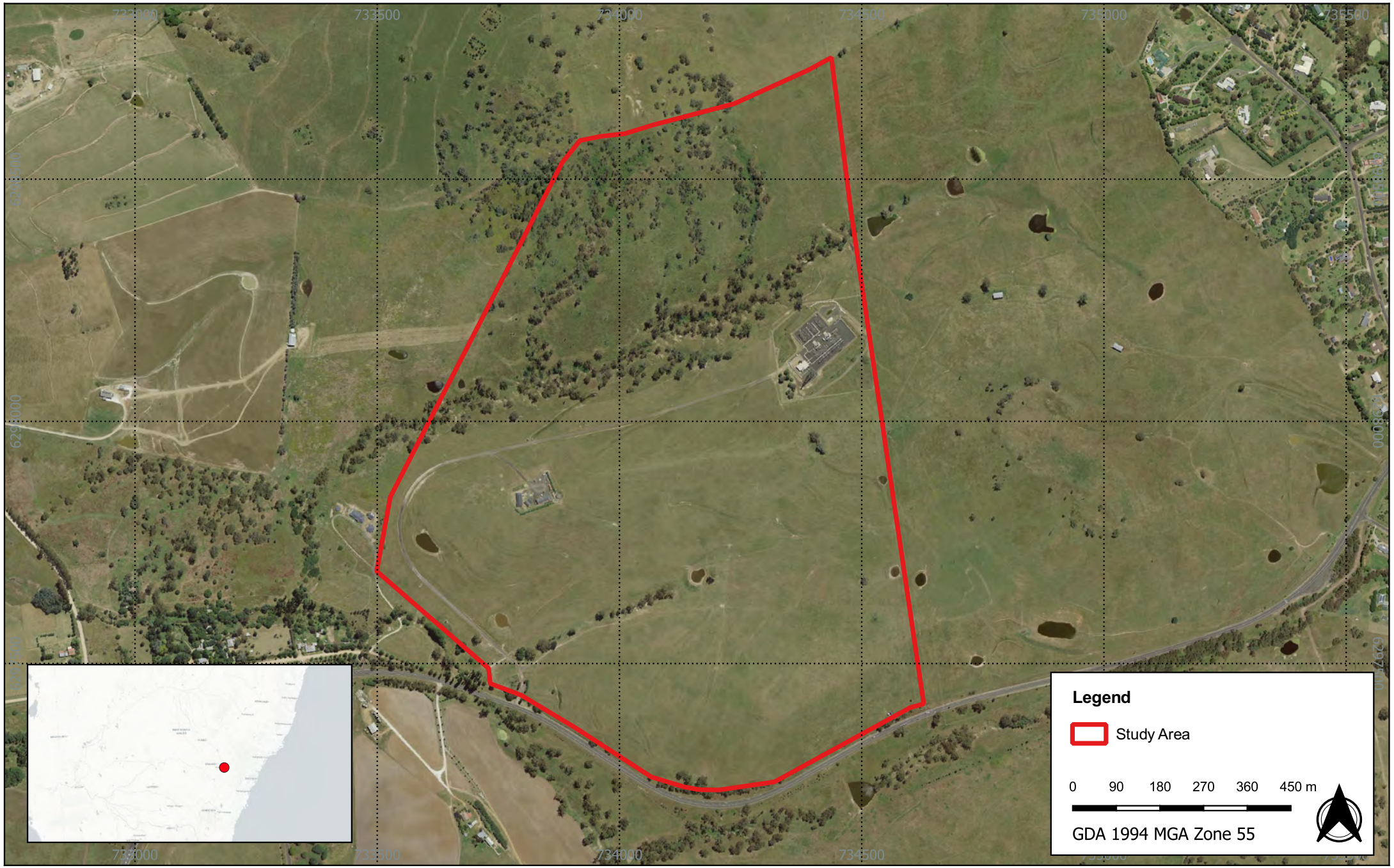

Figure 1.2 Detailed aerial of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial,CartoDB Positron

Drawn by: Adam Hansford Date: 2025-12-05

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1.4 SUMMARY OF LEGISLATIVE PROCESS

Aboriginal archaeological and cultural heritage assessments in NSW are carried out under the auspices of a range of State and Federal Acts, Regulations and Guidelines. The Acts and Regulations allow for the management and protection of Aboriginal places and objects, and the Guidelines set out best practice for community consultation in accordance with the requirements of the Acts.

This section outlines the Australian acts and guidelines that are applicable or have the potential to be triggered with regards to the proposed development are detailed in Table 1.1 to Table 1.5.

Table 1.1 Federal acts

Federal Acts:	Applicability and implications
Environment Protection and Biodiversity Conservation Act 1999	This act has not been triggered and so does not apply, as: • No sites listed on the National Heritage List (NHL) are present or in close proximity to the study area. • No sites listed on the Commonwealth Heritage List (CHL) are present or in close proximity to the study area.
Aboriginal and Torres Strait Islander Heritage Protection Amendment Act 1987	Applies, due to: This Act provides blanket protection for Aboriginal heritage in circumstances where such protection is not available at the state level. This Act may also override state and territory provisions.

Table 1.2 State acts

State Acts:	Applicability and implications
National Parks and Wildlife Act 1974 (NPW Act 1974)	Applies, due to: • Section 86 – Prohibits both knowingly and unknowingly, causing harm or desecration to any Aboriginal object or place without either an AHIP or other suitable defence from the Act. • Section 87 – Allows for activities carried out under an AHIP or following due diligence to be a defence against the harm of an Aboriginal object. • Section 89A – Requires that the Heritage NSW must be notified of any Aboriginal objects discovered within a reasonable time. • Section 90 – Requires an application for an AHIP in the case of destruction of a site through development or relocation.
NPW Regulation 2019	Applies, due to: • Section 80A – States minimum standards of due diligence to have been carried out. • Section 80C – Requires Aboriginal community consultation process to be undertaken before applying for an AHIP. • Section 80D – Requires production of a cultural heritage assessment report to accompany AHIP applications.
The Environmental Planning and Assessment Act 1979 (EP&A Act 1979)	Applies, due to: • This project is being assessed under Part 4 of the EP&A Act 1979. • Sections 86, 87, 89A and 90 of the NP&W Act 1974 will apply. • The Part 5 Guidelines will not apply.
NSW Heritage Act 1977	There are no sites listed on the State Heritage Register associated with the study area, and therefore Section 57 of this act does not apply.

Table 1.3 State and local planning instruments

Planning Instruments	Applicability and implications
Local Environmental Plans (LEP)	The following LEP is applicable: • Bathurst LEP 2014
Development Control Plans (DCP)	The following DCP is applicable: • Bathurst Regional DCP 2014

Table 1.4 Industry specific SEARs

Requirement	Applicability and implications
Aboriginal Cultural Heritage Assessment	Condition 12: • Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, including the results of any archaeological test excavations (if required) and identifying, describing and assessing any impacts (including from road upgrades) on any Aboriginal cultural heritage values on the land.

Table 1.5 Aboriginal community consultation guidelines

Guidelines	Applicability and implications
Consultation Requirements	The development is to be conducted in accordance with Part 4 of the EP&A Act. As the project is to be assessed under Part 6 of the NP&W Act, approvals under Section 90 of the NP&W Act 1974 as amended 2010 will be required, S89A of the Act will apply, and the Part 4 Guidelines will apply.

1.5 PROJECT TEAM AND QUALIFICATIONS

The personnel responsible for the preparation of this report are detailed in Table 1.6.

Table 1.6 Personnel involved in the preparation of this ACHA

Name	Qualifications	Title	Responsibilities
Amanda Hansford	B Arts. Arch/Paleo, Grad Dip in Archaeology	Director	Technical Lead
Peta Rice	B. Arts, History, Ancient History and Archaeology	Archaeologist	Project Manager, Fieldwork, Report Author
Jake Allen	B. CMS, B. Arts. M. Maritime Archaeology (in progress)	Graduate Archaeologist	Fieldwork, Report Writing
Teleeha Thomas	B. Arts, History. M. Archaeology (in progress)	Graduate Archaeologist	Report Writing
Madelaine Firth	B. Arts, History and Archaeology. M. Archaeology (in progress)	Graduate Archaeologist	Report Writing
Adam Hansford	Cert. 4 Spatial Information and Surveying	GIS Operator	GIS Mapping

1.6 ABBREVIATIONS

The following are common abbreviations that are used within this report:

Austral	Austral Archaeology Pty Ltd
ACHA	Aboriginal Cultural Heritage Assessment
AHIP	Aboriginal Heritage Impact Permit
BESS	Battery Energy Storage System
BLALC	Bathurst Local Aboriginal Land Council
Burra Charter	Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance 2013
CBD	Central Business District
CHL	Commonwealth Heritage List
DECCW	Department of Environment, Climate Change and Water
DCP	Development Control Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Act 1999
EPI	Environmental Planning Instrument
GSE	Ground Surface Exposure
GSV	Ground Surface Visibility
Heritage Act	NSW Heritage Act 1977
ICOMOS	International Council on Monuments and Sites
IHO	Interim Heritage Order
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
NPW Act	National Parks and Wildlife Act 1974
Panorama	Panorama BESS SubCo Pty Ltd
The Proponent	SLR Consulting Australia Pty Ltd
RAP	Registered Aboriginal Party
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
Study Area	800 Mid-Western Highway
Bathurst DCP	Bathurst Regional Development Control Plan 2014
Bathurst LEP	Bathurst Local Environmental Plan 2014

2 CONSULTATION PROCESS

This section outlines the consultation process that has been followed as part of the preparation of this ACHA.

2.1 INTRODUCTION

Stakeholder consultation for this project commenced in line with the Consultation Requirements (Department of Environment, Climate Change and Water NSW 2010a). Heritage NSW (2010a, p.iii) recognises that:

- Aboriginal people should have the right to maintain their culture.
- Aboriginal people should have the right to participate in matters that may affect their heritage directly.
- Aboriginal people are the primary determinants of the cultural significance of their heritage.

The Consultation Requirements outline a four-stage consultation process which includes:

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

Volume 2, Appendix A of this ACHA contains a consultation log and evidence of all correspondences that were sent and received as part of the consultation process.

2.2 STAGE 1: NOTIFICATION AND REGISTRATION OF INTEREST

The following section outlines the tasks that were undertaken as part of Stage 1 of the Consultation Requirements.

2.2.1 IDENTIFICATION OF RELEVANT ABORIGINAL STAKEHOLDERS

In accordance with the Consultation Requirements the following bodies were notified as part of the project proposal:

- A response was received from Heritage NSW with a list of stakeholders who may have an interest in the proposed development.
- The BLALC responded.
- The Central Tablelands Catchment Management Authority replied that they had no list of stakeholders who may have an interest in the proposed development.
- The Bathurst Regional Council replied with a list of stakeholders who may have an interest in the proposed development.
- The National Native Title Tribunal replied that they had no list of stakeholders who may have an interest in the proposed development.

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* listed no Aboriginal stakeholders for the land within the study area.

A copy of these letters and searches are included in Volume 2 of this ACHA.

2.2.2 PUBLIC NOTICE

An advert was placed in the Western Advocate to run on 25 August 2022, requesting the registration of cultural knowledge holders relevant to the project area. A copy of this advert is included in Volume 2 of this ACHA.

2.2.3 INVITATION TO REGISTER

Letters were also written to the relevant agencies suggested in Section 4.1.2 of the Consultation Requirements (Department of Environment, Climate Change and Water NSW 2010a) on 22 August 2022 and a search was made of the Native Title Tribunal on the same day.

Groups identified in Table 2.1 registered as Aboriginal stakeholders with an interest in this project.

As a result of the consultation procedure, the following groups shown in Table 2.1 registered as Aboriginal stakeholders with an interest in this project:

Table 2.1 Registered Aboriginal stakeholders

Organisation	Contact person
BLALC	Tonilee Scott
Didge Ngunawal Clan	Lilly Carroll
TMS Consulting	Timothy Stubbs
Yurwang Gundana Cultural Heritage Services	Merekai Bell
Wiradjuri Council of Elders	Robert Clegg

2.3 STAGE 2: PRESENTATION OF INFORMATION

All registered Aboriginal stakeholders were provided with information outlining the proposed works, including information relating to proposed impacts as well as the project's methodology on 12 October 2022.

Copies of all correspondence relating to the provision of project information to registered Aboriginal stakeholders are included in Volume 2 of this report.

2.4 STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

2.4.1 REVIEW OF DRAFT METHODOLOGY

On 12 October 2022, Austral provided each Aboriginal stakeholder with a copy of the project methodology. The methodology outlined the proposed assessment process that would be used in the completion of the project. Aboriginal stakeholders were provided with 28 days to review and provide feedback on the methodology.

Out of the 5 registered stakeholders, 2 replied in support of the methodology, and one replied acknowledging the email. Copies of all correspondence relating to the draft methodology from Aboriginal stakeholders are included in Volume 2, Appendix C of this ACHA.

2.5 STAGE 4: REVIEW OF DRAFT ACHA REPORT

The draft ACHA was provided to RAPs on 26 June 2023. A response from Lilly Carroll of the Didge Ngunawal Clan indicated support for the draft report. No other responses were received.

2.6 CONSULTATION UPDATES

Consultation has been maintained, and updates were sent to registered stakeholders on the following dates.

2.6.1 19 JANUARY 2024

An update was sent to all registered stakeholders. No responses were received.

2.6.2 2 JULY 2024

An update was sent to all registered stakeholders. One response was received from Wiradjuri Elders thanking Austral for the update.

2.6.3 24 MARCH 2025

An update was sent to all registered stakeholders notifying of updates to the ACHA, which would be distributed upon finalisation. Responses from Didge Ngunawal Clan and Wiradjuri Council of Elders thanked Austral for the update.

Distribution of this v8 ACHA will serve as the next update.

3 LANDSCAPE CONTEXT

The following section defines the study area and its environmental and cultural context.

3.1 ENVIRONMENTAL CONTEXT

The study area's environmental context forms the basis for local ecosystems which, in turn, influence the range and diversity of the resource base available to past inhabitants of the area. Mobility and subsistence strategies employed by past humans would have responded to factors such as the availability and distribution of plant, animal and riverine resources and the accessibility of raw materials suitable for the manufacture of stone tools.

Additionally, environmental characteristics such as local landforms, soil types and depths and the underlying geology influence the potential for finding subsurface archaeological deposits. Soil characteristics, for instance, influence artefact preservation, the integrity of stratigraphic deposits and the degree of post-depositional movement of artefacts (e.g., greater artefact movement is likely within sandy deposits compared to compact, clayey ones) as well as the ability to identify archaeological sites and deposits in the first place (i.e., improved ground visibility due to high exposure relating to erosion).

The following section discusses the study area in relation to its landscape, environmental and Aboriginal landscape resources. This environmental context has been prepared in accordance with Requirement 2 of The Code (Department of Environment, Climate Change and Water NSW 2010b, pp.8–9).

3.1.1 GEOLOGY AND HYDROLOGY

Geological units are used to predict the presence and/or absence of certain Aboriginal site types including rock shelters, grinding grooves or quarries in addition to providing an insight into the range of raw material types that may have been available to past Aboriginal groups for stone tool production.

The study area is located entirely within the Bathurst Granite geological unit, which is comprised of coarse-grained, porphyritic biotite granite, porphyritic granite and granodiorite (Geoscience Australia 2023a). The Bathurst Granite unit overlies the Bathurst Batholith which is a middle- to late-Carboniferous geological intrusion comprised of rock types such as granite, quartz monzonite and/or diorite. This particular geological unit is present in the Bathurst, Orange and Oberon regions. While rock materials suitable for the manufacture of flaked stone objects are generally absent from the Bathurst area, localised outcropping of quartz produced as secondary intrusions within the batholith may have been utilised. Likewise, dolerite dykes occurring in the region may have provided stone suitable for the production of edge-ground implements (AECOM Australia Pty Ltd 2018, p. 5).

The character of the Bathurst Granite landscape, while variable in slope, relief, soil type and rock exposure, is often distinguished by attractive rounded hills. It has long, relatively low sloped swales and valleys. These latter features invariably comprise deep fills of Pleistocene (1.8 Ma) aged sands and gravels topped by Holocene aged (8,000 Bp) swampy meadows with dark-coloured clay loam soils (Marshall 2015, p. 8).

The study area is in proximity to two tributaries of Evans Plains Creek, ranging between 1st to 3rd order systems. These water courses run within and adjacent to the study area. The ability to exploit freshwater resources associated with these creeks would have encouraged Aboriginal occupation of the area. The close proximity of the study area to more permanent water sources such as those mentioned above suggests that the area would have provided past Aboriginal groups with a more permanent reliable source of fresh water and associated resources. Unsurprisingly, most registered AHIMS sites in proximity to the study area are located along creek lines and water courses which suggests that the study area would be an ideal location for seasonal occupation.

The geological and hydrological units identified within the study area are identified in Figure 3.1

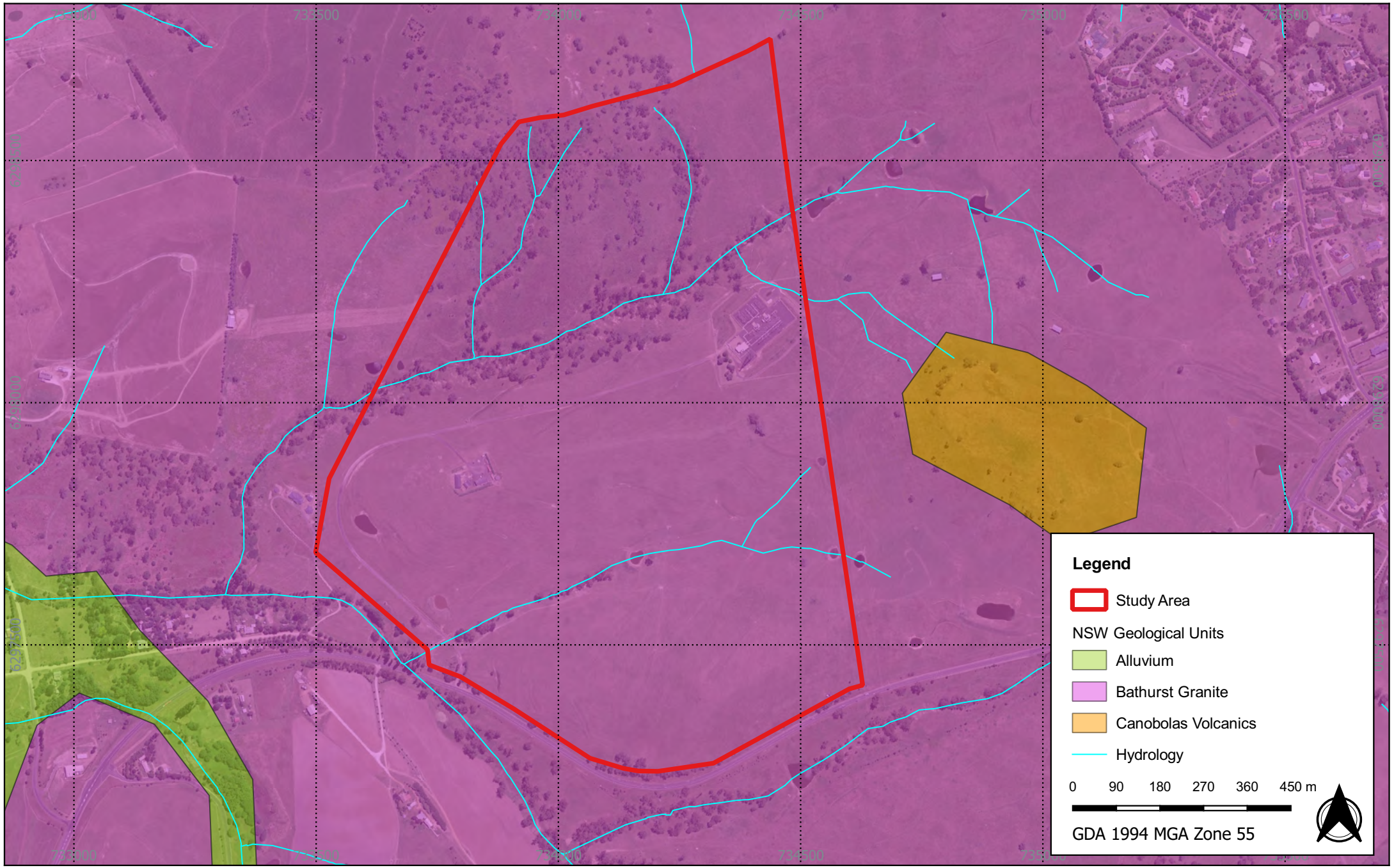

Figure 3.1 Geology and Hydrology of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

3.1.2 TOPOGRAPHY AND SOILS

The Bathurst landscape is typically characterised by undulating to rolling hills, with elevations of 650–850 m and most slopes from 6–10%. Slope lengths vary from 400–800 metres but can range up to 2,000 metres. Drainage depression slopes are typically 4–7% but range from 1–9%. Local relief is from 30–70 metres. Erosional channels drain north into the major streams. The drainage pattern is convergent, with drainage lines 500–1000 metres apart (Kovac et al. 2010). The landforms identified within the study area consist of a ridgeline encompassing a crest and saddle with adjacent gentle to moderately steep slopes with one drainage depression running down the northern slope toward the roadway. This ridgeline crosses the entire width of the study area and runs in an easterly direction to a nearby hillock. Previous work in the nearby area indicates the study area contains landforms on which Aboriginal cultural heritage is likely to exist. The crest of the ridgeline, for example, may preserve evidence of past Aboriginal occupation, and flat, elevated, well-drained locations above creeks are known to have been favoured as sites for occupation and camping. The ridge and adjoining slopes may also preserve evidence of Aboriginal material having potentially been used by past Aboriginal groups as transitory routes through the landscape.

The landform units identified within the study area are identified in Figure 3.2

The study area is situated entirely within the Bathurst soil landscape (ba), which is characterised by non-calcic brown soils with yellow solodic soils on the lower slopes and drainage lines. This soil landscape has a very dry, friable soil composition with a high quantity of gravelly crystal quartz inclusions throughout. The depth of the soil profile varies from shallow (100-250 millimetres) along ridgelines and crests to moderately deep (300-600 millimetres) within saddles, drainage depressions and slopes.

The soil landscapes identified within the study area are identified in Table 3.1 and Figure 3.3.

Table 3.1 Soil landscapes identified as being within study area

Soil landscape	Non-Calcic Brown Soils	Yellow Solodic Soils
Bathurst (ba)	**Topsoil:** Dark reddish to greyish yellow sandy loam with weak structure, pH 6.0 – 6.5. **A2 Horizon:** Bleached (dry) dull reddish brown or orangey loamy sand to sandy loam; massive; brittle; pH 6.5 – 7.5. **B Horizon:** Reddish brown to brown sandy clay loam, or sandy to heavy clay with moderate to strong structure; pH 6.5 – 7.0. This soil type is dominant throughout the ba soil landscape, mostly existing within sloped landforms. The general depth is typically 1.7m to bedrock with moderate potential for sheet and rill erosion. The existing land use for this soil type includes grazing, orcharding and vegetable farming.	**Topsoil:** Brown to brownish black loamy sand to sandy loam with weak structure or single-grained; pH 5.0 – 6.5. **A2 horizon:** Dry, dull yellowish brown to light grey, sandy loam with massive or weak structure; pH 6.5 – 7.5. **B Horizon:** Dull yellowish brown to greyish brown mottled sandy clay loam to heavy clay; moderate to strong structure; pH 8.0 – 8.5. This soil type is common throughout the ba soil landscape, typically appearing within lower slopes and drainage lines. The general depth is +300mm to bedrock with moderate potential for gullying to occur in drainage depressions.

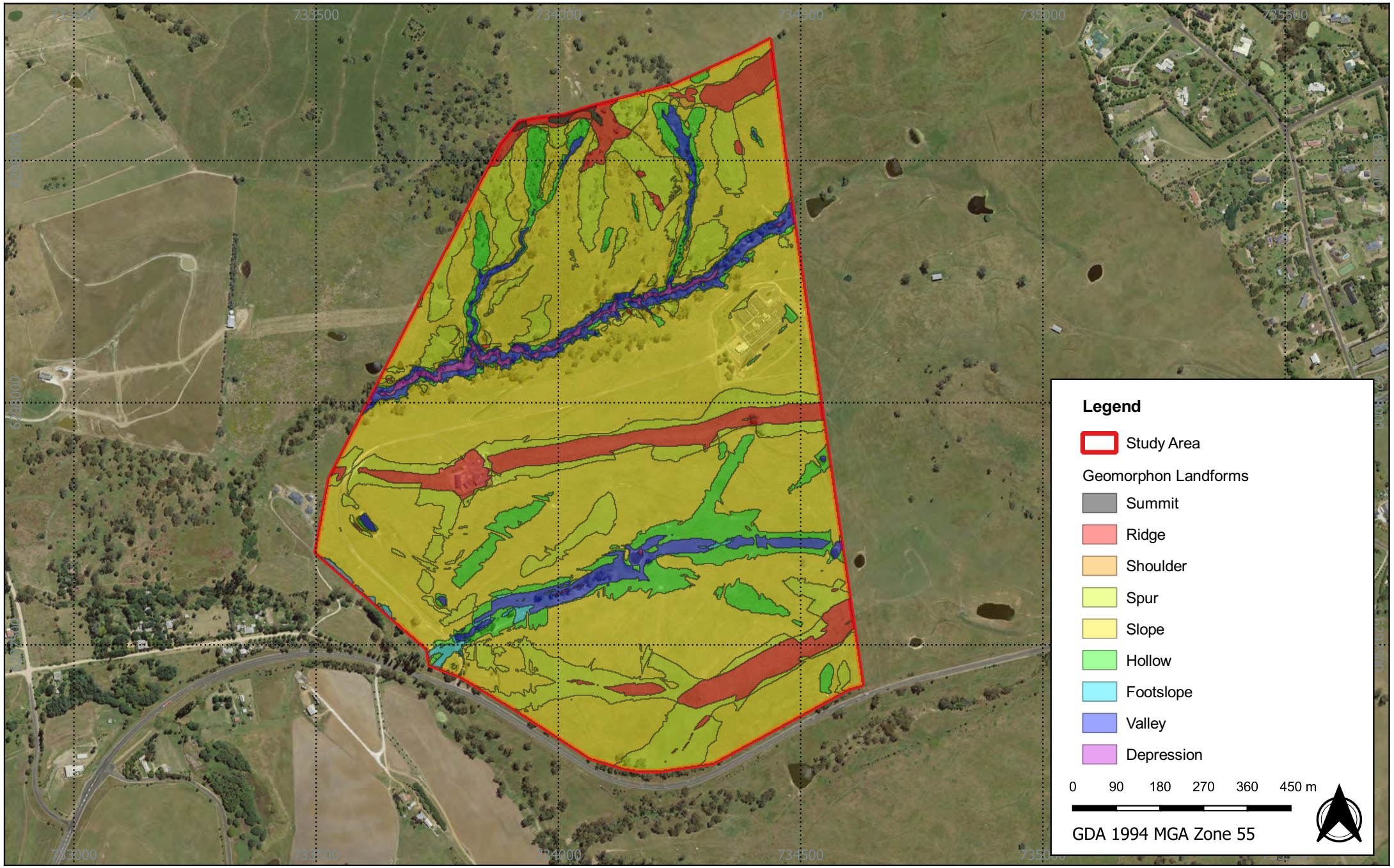

Figure 3.2 Geomorphic Landforms of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

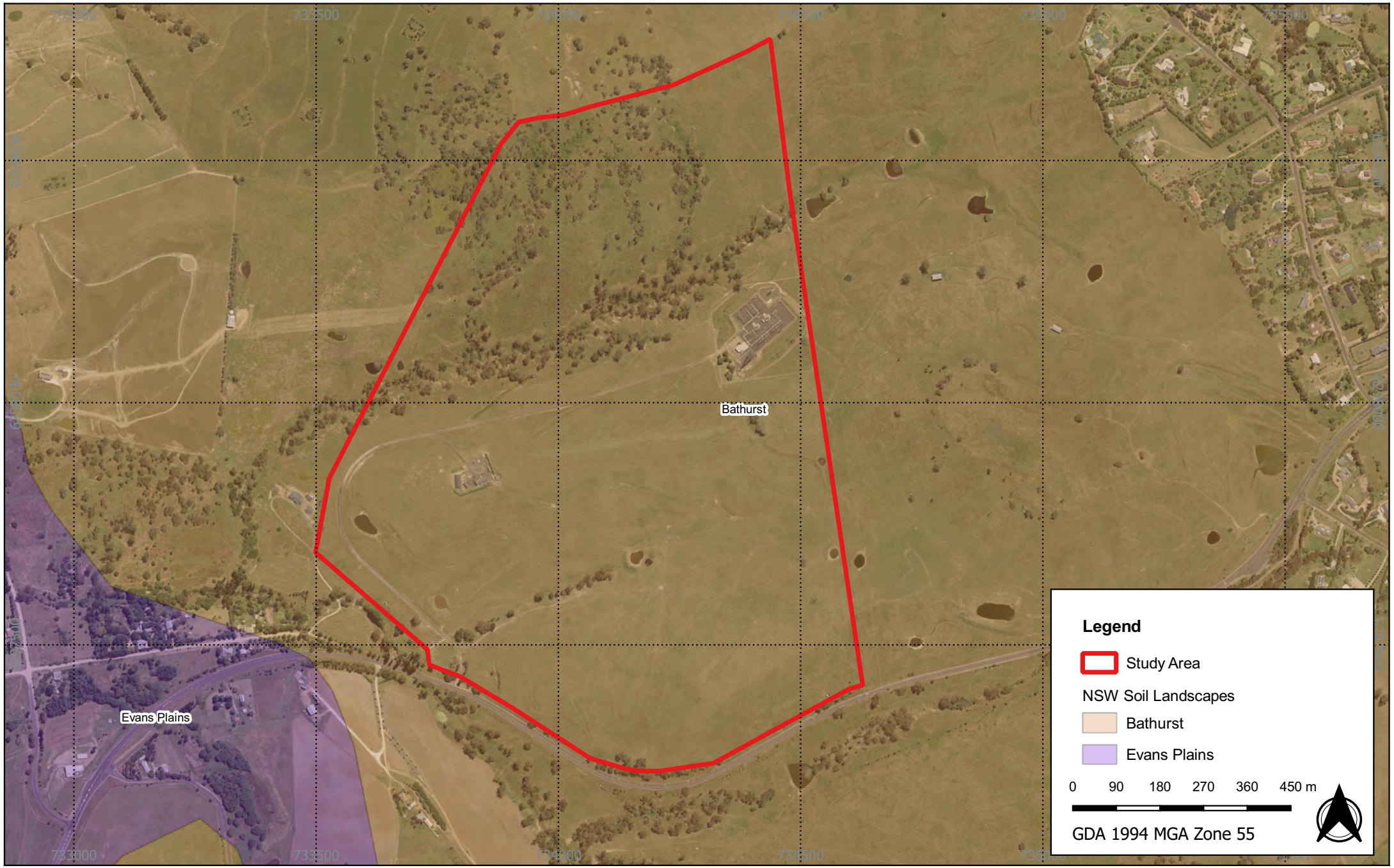

Figure 3.3 NSW Soils Landscapes of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

3.1.3 CLIMATE AND VEGETATION

The Bathurst LGA is located within the South-Eastern Highlands Bioregion (Extent Heritage Pty Ltd 2017, p.10). Based on climate data from the Bathurst Agricultural Weather Station (Station Number 063005), approximately 3.3 kilometres east south-east of the study area, the local region is characterised by generally warm, dry summers and cold, dry winters. The summer mean average temperatures reach highs of 28.2ºC and lows of 13.5ºC (Bureau of Meteorology 2023). During winter, mean average temperatures reach highs of 11.4ºC and lows of 0.6ºC (Bureau of Meteorology 2023). The highest mean rainfall is recorded during January at 68.4mm, and the lowest mean rainfall is recorded in May at 41.3mm (Bureau of Meteorology 2023).

The study area has undergone extensive stages of land clearance. The only evidence of remnant vegetation exists on the eastern side of the study area along the ridgeline. This includes 5 moderately young gum trees. Typical vegetation in the local area includes woodland to open forest of yellow box *(Eucalyptus melliodora*), broad-leaved peppermint *(Eucalyptus dives*), red stringybark *(Eucalyptus macrorhyncha*) and white box *(Eucalyptus albens*) on ridges and slopes as well as manna gum *(Eucalyptus viminalis*) and river oak (*Casuarina cunninghamiana*) in valleys. Patches of black cypress pine (*Callitris endlicheri*) are present in rocky outcrops and grasslands with patchy snow gum *(Eucalyptus pauciflora*) woodlands in cold-air drainage hollows (Mitchell 2002, p. 142).

3.1.4 LANDSCAPE RESOURCES

The study area lies in a landscape that would have been rich in biological and ecological diversity prior to European clearing practices. The landscape likely supported a wide variety of flora and fauna which, coupled with proximity to watercourses, would have provided abundant natural resources for past Aboriginal people utilising the area. The elevated position of the study area lends itself to likely having been a suitable travel route, as it is reasonably well-drained and would have provided a useful vantage point from which to identify areas of richer resources in closer proximity to more reliable water sources such as Evans Plains Creek situated 1.7 kilometres west of the study area.

Evans Plains Creek is a perennial watercourse that would have provided traditional Aboriginal communities with water and a large range of exploitable resources for food and tool-making. The ridgeline and drainages within the study area would have provided traditional Aboriginal communities in the area with a means for getting from the top of the ridgeline to the plains below quickly and with minimal effort. As such, the study area was likely used as an access way to areas that were used more frequently rather than a place of settlement.

3.2 PAST LAND USE PRACTICES

The study area has been previously cleared of vegetation, likely during the days of early European settlement when logging and clearance for agricultural activities were undertaken. Past agricultural practices, extensive land clearance, animal grazing, the construction of buildings, fences and vehicle tracks, tree harvesting, installation of overhead power lines and ongoing encroachment of residential development surrounding the study area have contributed to the removal of original native vegetation. The study area is now covered in dense native and introduced grasses with invasive natural and introduced weeds dominating the landscape. Land clearance would have resulted in soil disturbance and topsoil movement and loss that, coupled with erosion across the majority of the study area, may account for widespread artefact displacement but not the complete destruction of Aboriginal sites.

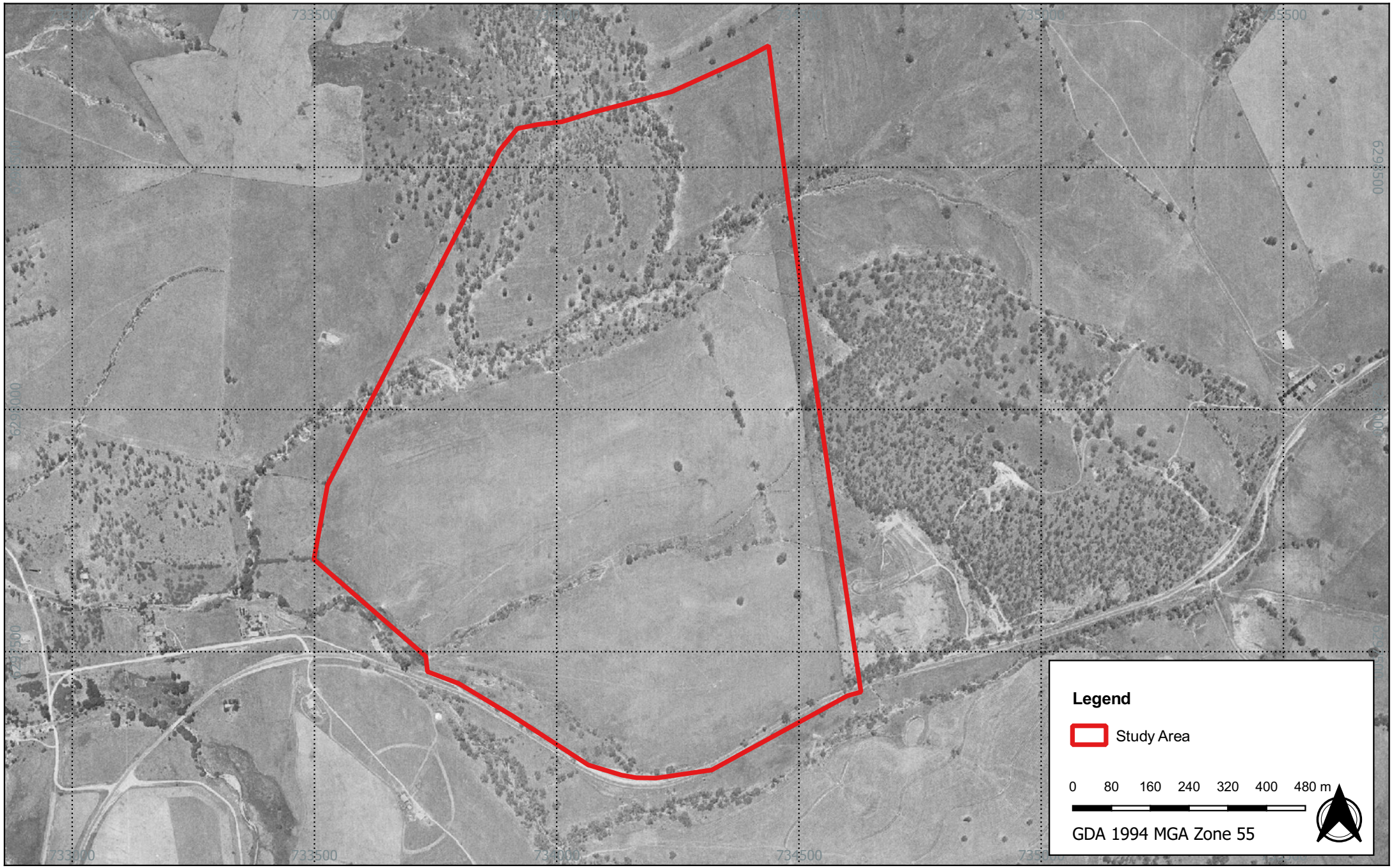

Figure 3.4 1964 Aerial of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW Spatial Services

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

Figure 3.5 1984 Aerial of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW Spatial Services

Drawn by: ARH Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

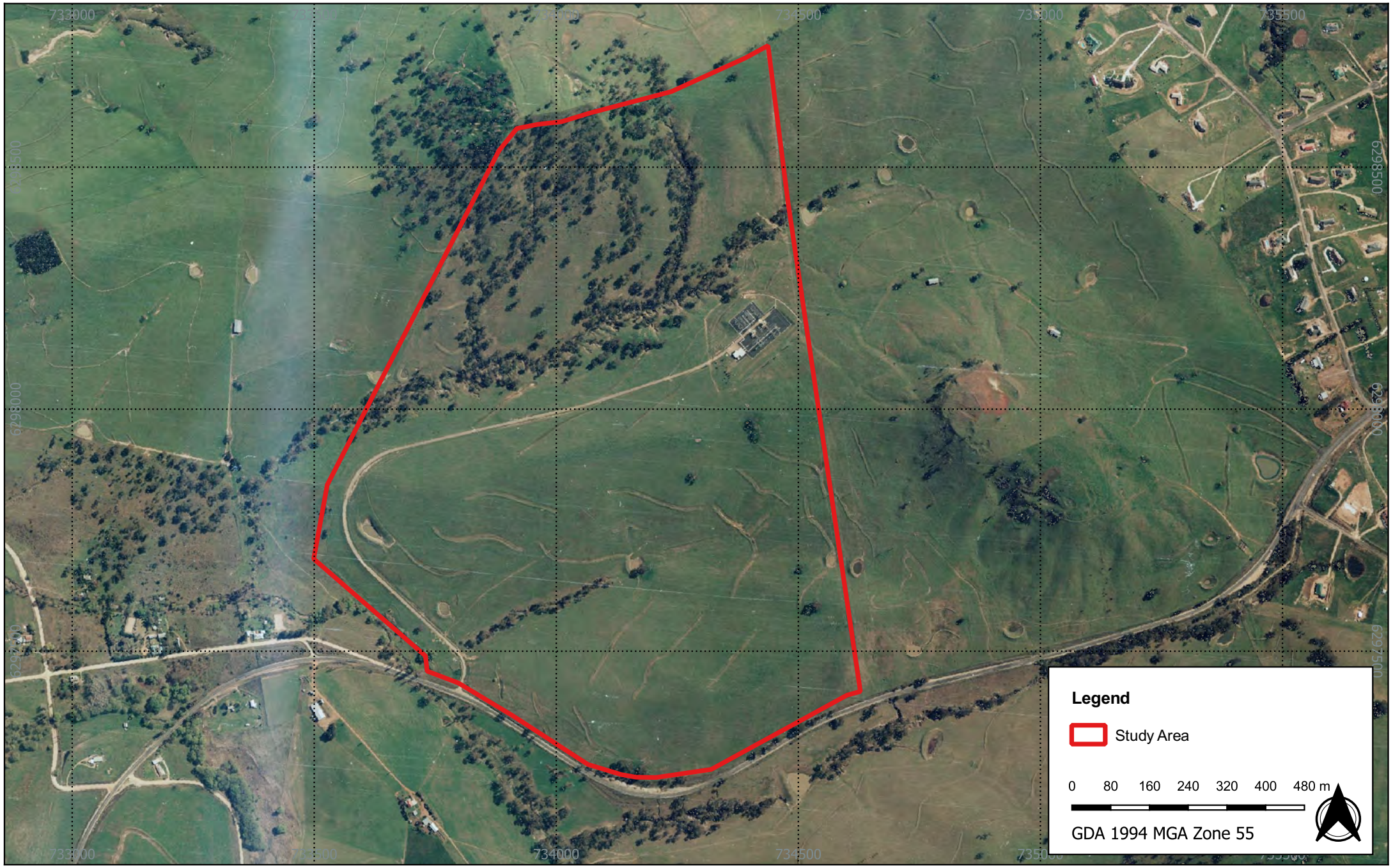

Figure 3.6 2002 Aerial of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW Spatial Services

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

4 ARCHAEOLOGICAL CONTEXT

The range of environments and landscapes within the Bathurst region had a profound influence on the lives of the Aboriginal people who lived there. As hunters and gatherers, Aboriginal people were reliant on their surroundings to provide food. Their transitory lifestyle affected population size, social interactions and degree of mobility, which can be confirmed in the archaeological record.

4.1 ETHNOHISTORY

Tindale identified the Wiradjuri people as the Aboriginal custodians of the Bathurst area (Tindale 1974). When Europeans, led by George Evans, first ventured over the Blue Mountains onto the Bathurst Plains in 1813, they were entering the Wiradjuri nation. The Wiradjuri nation, according to Tindale, is 97,100 kilometres square. The Wiradjuri people lived in extended family groups of approximately thirty men, women and children and moved between campsites across their traditional lands. They made periodic journeys to a well-watered country around the Wambool River (Morgan 2013). Differences in the dialects of the Wiradjuri people were recorded in relation to different clan territories. Pearson (1984) states “the existence of three clan territories in the upper Macquarie is supported by evidence that three distinct dialects of Wiradjuri occurred.” They occasionally converged with other clans to trade, hunt, fight, feast, arrange marriages to strengthen kinships, resolve disputes and share information. James Gunther, the C.M.S missionary at Wellington Valley from 1837 to 1843, observed that the Wiradjuri people were a highly mobile population and flexible group size (Pearson 1984). The Wiradjuri people gathered in groups of up to 150 men, women and children to feast and have ceremonies. Documented evidence from Barron Field and George Suttor, writing in 1822 and 1826, estimated each clan’s territory to be about “thirty to forty miles” (Fields 1825, p. 432).

The route that Blaxland, Wentworth and Lawson took to cross the Blue Mountains and explore the new country in 1813 most likely followed existing Aboriginal paths. Blaxland observed the ‘native people’ several times during their voyage: “this day they saw the fires of some natives below; the number they computed at about thirty – men, women and children’ and ‘The second camp of natives moved before them about three miles” (1913, p. 69 & p.74). The group noticed differences between the Eastern seaboard Indigenous people and the Indigenous people across the mountains. They stated that there were no huts like their eastern counterparts and that they used different methods of food preparation. Originally the expedition moved slowly through the mountains; however, their pace increased when they began to follow a trail lead by the local Aboriginal people. This evidence suggests that although the journey across the Blue Mountains was foreign to the early Europeans, the Indigenous people travelled across the territory frequently. Some paths formed part of an intricate network of exchange of both material goods and Dreamings, with archaeological evidence supporting this network. Gemmell-Smith (2004, pp. 14-15) states that the Oberon area was one of three major axe quarries from Upper Macquarie Valley and that these stone axe heads are found across the wider Bathurst region.

Most ceremonial and cultural practices have been recorded from a Eurocentric view, resulting in considerable handicaps in interpretations of traditional cultural practices. Europeans recorded some Aboriginal customs such as hunting and gathering techniques, women's activities, “scarification” of initiated men, ceremonial songs and dances. Most ceremonial events are shrouded in secrecy, and there are many limitations and much speculation about these ceremonies even in the detailed descriptions. Ceremonial practices declined throughout the 1860s and became endangered by 1900, although some ceremonies were continued in secret in missions (Go Green Services & The Community of Wagga Wagga 2002). They also marked their lands with modified trees that marked burial grounds and important junctions at water sources. Bora Rings were used in important ceremonies such as initiations and corroborees and can still be found throughout the Wiradjuri land today. Many of these rituals and ceremonies continue to exist in the contemporary culture of the Wiradjuri people.

The Wiradjuri people had sophisticated horticultural, aquacultural and agricultural techniques which included crop-growing, fish trapping and controlled burning (fire-stick burning) (State Library of New South Wales n.d.). The Wiradjuri people adapted the landscape to suit their needs, such as conducting cultural burnings to encourage new growth and animals into the cleared grasslands for better hunting. The Wiradjuri people hunted a wide variety of species including kangaroos, koalas, wallabies, goannas, snakes, birds and possums. Possums appear to be the most important source of both food and skins (used as clothing, drum skins and pouches) which were also traded. The Wiradjuri were skilled at hunting the possums, chasing them up trees, clubbing them and expertly skinning them; the skins provided material to make warm cloaks. A major source of staple foods included plant resources such as roots, yams, tubers, bushes and certain trees like wattle and saltbush. Collecting, grinding and cooking plant foods was predominately the role of women. Women also collected ant and bird eggs and freshwater mussels, harvested native honey, and trapped birds. Oxley observed that the Aboriginal people dug wells throughout the countryside that would often link rivers and waterholes (Oxley 1820).

In 1815, William Cox built a road across the Blue Mountains (Cox's Road) which allowed for the expansion of settlements throughout NSW. By 1816 the settlement of Bathurst was established, and the majority of land use was open-range grazing of sheep. Early relationships between the Europeans and Wiradjuri people were peaceful, Governor Macquarie's orders were to treat Aboriginal people kindly and 'there were no restraints to be put upon their movements, they could come and go to the camp as they wanted' (Handley 2015). Tensions and conflict began to arise during the 1820s as European grazing pastures extended far into resource-rich Aboriginal plains. The grazing flocks were continually disrupted by 'wandering' Aboriginals who would occasionally hunt domesticated animals (Pearson 1984). Traditional fire-stick burning was considered unwelcome by Europeans due to the damage done to the lands and their flocks. When Macquarie's term ended in 1821, Thomas Brisbane became the new governor and issued land grants and grazing permits that allowed the European population to grow swiftly. The Bathurst Plains were prime grazing land for cattle and sheep, and settlers erected fences and boundaries and created a new order for the bush and the Wiradjuri people.

Dispossession of the Wiradjuri people was fast and brutal, and the Wiradjuri were pushed off their traditional lands and their access to sacred sites was denied. They resisted the invasion because their traditional lifestyle was now under attack by the European presence. Europeans felt there was nothing that the Aboriginals could contribute to the European economy that would give their society a place in the new regime. Aboriginal culture was given no value on the frontier (Pearson 1984, p. 70). One of the leaders of the Wiradjuri clan, Windradyne, also known to the settlers as 'Saturday', began a campaign of violence after a farmer fired upon a group of Wiradjuri people who misunderstood the nature of land ownership. Windradyne attacked settlers at Millah Murrah, Warren Gunyah and the Mill Post. The settlers responded to these attacks with violence and random killings of the Wiradjuri people. Deaths were recorded on both sides, and Governor Brisbane proclaimed martial law on August 14, 1824, in retaliation for several murders of European settlers at the hands of the Wiradjuri people. With the proclamation, violence against the Aboriginal people was sanctioned and the death toll of the Wiradjuri people rose quickly, resulting in a bloody war known as the Bathurst War.

Under martial law, 75 British soldiers were sent to Bathurst to protect the Bathurst region and to incite alarm in the Wiradjuri people. The soldiers were garrisoned at remote properties, and landowners issued guns to their station hands. Aboriginal women and children were often targeted as well as warriors whilst burying their fallen. Threlkeld recalls one incident;

> *"A large number [of Wiradjuri people] were driven into a swamp, and mounted police rode round and round and shot them indiscriminately until they were all destroyed!"* (Gunson 1974, p. 49).

Many Wiradjuri people lost their lives under martial law with no official death count, whereas estimates of European lives lost were between 19 – 22. The Bathurst clan was never able to recover from this population loss. Pearson attributes this to the "loss of land, kin and the traditional lifestyle, and the ravages of European diseases and the poor conditions attending their acquired position at the very bottom of the new social order" (1984, p. 77). Martial law was repealed on 11 December 1824. On 28 December 1824, Windradyne lead a group of Wiradjuri to attend the governor's annual conference in Parramatta. Windradyne wore a straw hat that had the word 'PEACE' beside a small branch representing an olive branch, making an entreaty for peace. (1984, p. 77)

After the war, the Wiradjuri people dispersed, some staying in the settlement of Bathurst and others moving between camps along the rivers and outskirts of stations. The “permanent” fringe camps promoted disease due to a lack of clean water and inadequate waste disposal. Alcoholism within Aboriginal communities rose sharply due to the loss of traditional lifestyle and subsequent poor quality of life. During the 1830 and 1840s many Wiradjuri people lived in or around the Wellington Mission, supported by the Colonial Government. The mission helped facilitate the settlement process “largely by attempting to make the Wiradjuri a part of the expansion of the agricultural industry as workers and servants” (Ireland 2010, p. 146). The mission was established to improve race relations as well as provide a means of intervention. Missions in Australia were unsuccessful in converting traditional customs and beliefs for the Indigenous people, “indicating that while Aboriginal people had the choice, they continued to control and shape the nature of their interaction” (Ireland 2010, p. 146).

The Wiradjuri people made important contributions to the settlers’ economy. Many skilled Wiradjuri men became Aboriginal trackers that helped detain convicts and bushrangers. The Wiradjuri people formed a large and valuable part of the labour force throughout the settlements and stations. Many Wiradjuri women and boys were employed as domestic staff, and men were used primarily as station hands. Most Aboriginal staff were utilised as cheap labour for settlers, as payment was made only in rations and woollen clothing in colder months.The Wiradjuri people were the first entrepreneurs in the Ophir gold fields, profiting by selling resources like bark for huts, looking after horses and guiding Europeans to and from the gold fields.

From the 1880s onwards, “protection” policies were implemented across New South Wales. In 1883 the Aborigines Protection Board was established from the perception of the damage done to Aboriginal people by occupation (Thinnee & Bradford 1998). The new Aboriginal Protection Board had the power to forcibly remove Aboriginal people from their traditional lands and place them onto reserves. Bathurst LGA had no such reserves, and Wiradjuri people were likely to be sent to reserves in nearby Eugowra (AR 9386, 1889), Forbes (AR 43462/3, 1909-1915), Wellington (AR 45426/7 1910 and AR 87975) or Spring Flats (AR 80144, 1957-1964) (Thinnee & Bradford 1998, pp. 353-362). The *Aborigines Protection Act 1909* was established and granted legal power to the Aboriginal Protection Board “to assume full control and custody of the child of any aborigine” if the child is found to be neglected (Australian Human Rights Commission 2010, p. 79). This forcible removal of children from their families ensured that connections to culture and traditions were severed and Aboriginal children could assimilate into the new society. Until 1972, these government policies continued the dissolution of Wiradjuri family groups, creating the Stolen Generation, with many children being raised in orphanages like Cootamundra Girls’ Home and Kinchela at Kemspey.

The revival of the Wiradjuri is a continuing process. In 1937, two Aboriginal Elders from Dubbo, William Ferguson and Jack Patten, challenged the poor living conditions of the Aboriginal people in NSW. Together, with William Cooper, they organised and held the first Day of Mourning in Sydney on the 26 January 1938 (Morgan 2013). During the 1950s formation of the Federal Council for the Advancement of Aborigines and Torres Strait Islanders (FCAATSI), the Federal Council was the first voice for the Wiradjuri and Aboriginal people across the nation. In 1965 an Aboriginal university student, Charles Perkins, led the Freedom Ride to Bathurst on 12 February 1965 to protest against discrimination against Indigenous people. Ann Curthoy, who was on the Freedom Bus, wrote of her experience in her diary on 13 February:

> “*Houses of tin, mud floors, very overcrowded, kids had eye diseases, had to cart water (very unhealthy) from river. People fairly easy to talk to, kids quite friendly. General picture of extreme poverty but not a great deal of social discrimination. General picture of scarcity, of jobs. Mainly garden work, which is very seasonal. Average of three months for year out of work. Some working on a dam nearby. Some did shearing jobs. Did not encounter or hear of any women with jobs at all. Did not seem to know much about social services etc (1965)*.”

Political and social awakenings, stemming from the Freedom Bus and the efforts of Ferguson, Patten and Cooper saw a change within the Australian Constitution. The 1967 referendum, which was held to determine whether two references in the Australian Constitution discriminating against Aboriginal people should be removed, received the highest ‘yes’ vote ever recorded in Australian history (90.77%).The Aboriginal population has grown significantly since the 1970s, and a resurgence in the practice of Aboriginal culture and traditions has also taken place since that time.

4.2 PREVIOUS ARCHAEOLOGICAL WORK

Material evidence of Aboriginal land use has been compiled based upon a review of previous archaeological studies at a regional and local level, heritage database searches, and field investigations.

4.2.1 REGIONAL ARCHAEOLOGICAL CONTEXT

BATHURST REGIONAL LOCAL GOVERNMENT AREA ABORIGINAL HERITAGE STUDY (EXTENT HERITAGE PTY LTD 2017)

Notably, Extent Heritage prepared an Aboriginal Heritage Study in 2017 that aimed to "identify objects, places and archaeological sites of Aboriginal cultural significance, record those places (if appropriate) and develop recommendations for their management and conservation" within the Bathurst LGA and on behalf of the Bathurst Regional Council (Extent Heritage Pty Ltd 2017). This work resulted in the identification of 262 previously identified Aboriginal objects and/or sites within the LGA, most of which were open artefact scatters. A sensitivity map was also developed to guide Bathurst Regional Council in future planning and decision-making efforts; this map identifies the study area within the 'low' and 'moderate' sensitivity classifications.

BRIDGE AND CREEK WORKS, PERTHVILLE (OZARK ENVIRONMENT & HERITAGE MANAGEMENT PTY LTD 2013)

OzArk Environmental & Heritage Management Pty Ltd (OzArk) was commissioned to complete an ACHA for proposed bridge and creek works at Perthville 12 kilometres south of Bathurst, NSW. This assessment sought to determine the impact of proposed works to improve the flood water capacity of Queen Charlotte Vale Creek. Their assessment area spanned 1.3-kilometres along either side of the bridge, with an area of at least 20-50 metres on either side of the creek.

This assessment was of key cultural significance to the local Aboriginal community. In 2011, the remains of an Aboriginal person were discovered on the adjoining property to Oz Ark's study area. Following reburial, the proposed impact area was amended to avoid the site (AHIMS 44-3-155).

An archaeological pedestrian survey was undertaken within the subject area. This assessment identified no tangible, intangible sites, or potential archaeological deposits.

OzArk was commissioned to complete an ACHA for proposed bridge and creek works at Perthville. The land within the study area to be impacted is owned by Bathurst Council or privately held. The assessment area encompasses a floodplain and is in close proximity to a waterway.

> *"Ground surface visibility in the subject area was very low (0%) as the creek and banks were dominated by tall grasses, blackberry, weeds, and reeds and the adjacent private properties located on the flat flood plain consisted of dense agricultural grasses" (OzArk Environment & Heritage 2013, p. 28).*

WOODEN POLE REPLACEMENT PROJECT: TRANSMISSION LINES 94X AND 948 (OZARK ENVIRONMENT & HERITAGE MANAGEMENT PTY LTD 2019A)

OzArk was commissioned to complete Aboriginal and Historic Due Diligence archaeological assessments for proposed works across the Orange, Cabonne, Bathurst, and Lithgow local government areas (LGA). The study area included two transmission lines, Line 94x and Line 948. Line 94x is approximately 57 kilometres long, spanning the distance between the Wallerawang and Mount Panorama substations. Line 948 is approximately 44 kilometres, situated between the Mount Panorama and North Orange substations. The proposed impact area included watercourses, flat elevated terraces, ridges, and elevated flats along hilltops, intersecting several rivers and creeks. These landforms can be of high cultural sensitivity.

OzArk identified 130 previously recorded Aboriginal sites through an AHIMS search. The majority of AHIMS sites identified were artefact scatters (47%), followed by isolated artefacts, isolated artefact sites and one associated potential archaeological deposit (PAD). The desktop assessment identified 9 Aboriginal sites within 500 metres of Line 94x and Line 948.

A later visual inspection was conducted, resulting in the registration of four new Aboriginal sites: Salt Water Creek IF-1 (AHIMS 44-3-0232), Salt Water Creek IF-2 (AHIMS 44-3-0231), Salt Water Creek OS (AHIMS 44-3-0233) and Hourigans Creek OS-1 (AHIMS 44-2-030).

The majority of the identified artefacts were manufactured from quartz and volcanic material, including 13 quartz flakes and 2 quartz cores.

The results of this visual inspection are identified in Table 4.1.

Table 4.1 Results from survey taken from Wooden Pole Replacement Project

Site Name	Site Number	GPS Coordinates	Feature(s)	Landform
Salt Water Creek IF-1	44-3-0232	754055 E / 6294493 N	Isolated Artefact	Southern bank of Salt Water Creek
Salt Water Creek IF-2	44-3-0231	754321 E / 6294530 N	Isolated Artefact	Southern bank of Salt Water Creek
Salt Water Creek OS -1	44-3-0233	754073 E / 6294530 N	Artefact Scatter (10 Artefacts)	Southern bank of Salt Water Creek
Hourigans Creek OS-1	44-3-0301	728944 E / 6302852 N	Artefact Scatter (3 Artefacts)	Moderate slope on Northern bank of Hourigans Creek tributary

MCPHILLAMYS GOLD PROJECT: PIPELINE DEVELOPMENT (OZARK ENVIRONMENT & HERITAGE MANAGEMENT PTY LTD 2019B)

OzArk was commissioned to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the McPhillamys Gold Project water supply pipeline (pipeline development). This assessment sought to determine the impacts of earthworks and installation of a water supply pipeline. The proposed works included:

- Installation of a water supply pipe, approximately 90 kilometres in length.
- Installation of an additional pipeline, approximately 800 metres in length; diameter between 300-millimetres to 650-millimetres.
- 4 pumping station facilities consisting of water storage tanks, a pressure-reducing system, and a telemetry system.

The landscape of the study area consisted of “several landscapes, including the Mullion Slopes, Rockley Plains, Bathurst granites, Upper Macquarie Channels and Floodplains, Mount Horrible plateau, Capertee Plateau and the Macquarie Valley Basalts” (OzArk 2019a, p. 14)). It generally consisted of gentle to moderate slopes or moderate to steep slopes levelling out onto flat areas and watercourses. Multiple watercourses were identified within the study area, including 6 permanent systems: Piper Flat Creek, Salt Water Creek, Macquarie River, Queen Charlottes Creek, Evans Plains Creek, and McLeans Creek.

OzArk successfully reidentified previously recorded Aboriginal sites during survey: AHIMS 45-1-2723, AHIMS 45-1-2548, and AHIMS 45-1-2551. The pedestrian survey also located 7 unregistered Aboriginal sites (Table 4.2).

Table 4.2 Results from McPhillamys Gold Project: Pipeline Development Survey

Site Name	AHIMS Number	GPS Coordinates	Feature(s)	Survey Unit	Landform
Bathurst Bike Park IF-1	44-3-0221	738495 E/ 6293770 N (GDA94 Zone 55)	Isolated artefact	1a	Gentle/moderate slope: not a road or track
Sunny Corner IF-1	44-3-0222	769007 E / 6299750 N (GDA94 Zone 55)	Isolated artefact	2c	Moderate/steep slope: unsealed road/track
Sunny Corner IF-2	44-3-0223	764957 E / 6298103 N (GDA94 Zone 55)	Isolated artefact	3c	Creek flats: unsealed road/track
Sunny Corner IF-3	44-3-0224	765147 E / 6298127 N (GDA94 Zone 55)	Isolated artefact	3c	Creek flats: unsealed road/track

Site Name	AHIMS Number	GPS Coordinates	Feature(s)	Survey Unit	Landform
Sunny Corner OS-1	44-3-0225	765147 E/ 6292696 N (GDA94 Zone 55)	Artefact Scatter (2 artefacts)	1c	Gentle/moderate slope: not a road or track
Bald Hill IF-1	44-3-0228	735361 E / 6292969 N (GDA94 Zone 55)	Isolated artefact	1a	Gentle/moderate slope: not a road or track
Bald Hill IF-2	44-3-0228	735600 E / 6293057 N (GDA94 Zone 55)	Isolated artefact	1a	Gentle/moderate slope: not a road or track

The artefact types identified in association with these sites comprised 6 flakes and 2 cores made of silcrete, chert, crystal quartz, or milky quartz. One artefact (AHIMS 44-3-0224) was a multidirectional, crystal quartz core with 6 flake scars.

ABORIGINAL CULTURAL HERITAGE VALUES IN THE CENTRAL WEST CATCHMENT (PECKHAM 2012)

Peckham and Mjadwesch were commissioned to complete a study on the Aboriginal Cultural Heritage Values of Mount Panorama Aboriginal Land. This assessment was conducted to determine the impacts of restoration activities on 35.39 hectares of woodland and forest. Peckham's study focused on the plant and animal species present and history of modifications to the environment.

To facilitate this assessment, Peckham and Mjadwesch completed a combined vehicle and pedestrian survey. From this, they concluded that the landscape had been utilised for a series of purposes including sustenance, tools and medicine. The authors identified 132 species of flora and 23 faunal species known to have cultural links. The report concluded that the study area is of high sensitivity:

> *"the site's potential for traditional owners to gather bush food, to make bush bread, to engage in traditional activities such as weaving or tool making is a rare opportunity for an Aboriginal group to conduct bushland restoration work, whilst engaging with the local and wider community, in a program of meaningful cultural exchange" (Peckham and Mjawesch 2012, p. 26)*

No AHIMS sites were previously recorded within the survey area, nor were new sites identified. The authors provided 5 recommendations for the study area:

- Erosion works be undertaken.
- Weed treatment.
- Ecological burning programs be established.
- Nest-box programs.
- Habitat restoration works.

REPORT ON ABORIGINAL HERITAGE DUE DILIGENCE ASSESSMENT – BATHURST CORRECTIONAL CENTRE (AECOM AUSTRALIA PTY LTD 2018)

AECOM Australia Pty Ltd undertook an Aboriginal Heritage Due Diligence Assessment for the Bathurst Correctional Centre in 2018. The study area covered approximately 14.5 hectares within the Bathurst Regional LGA. AECOM's pedestrian survey identified no new Aboriginal sites, artefactual remains or scarred trees. However, they noted the presence of stone suitable for flaked or tool manufacture within their study area.

4.2.2 HERITAGE DATABASE SEARCH

An updated search of the Heritage NSW AHIMS database was undertaken on 11 March 2025 (Client Service ID 983733). The results from the AHIMS search identified 97 previously recorded sites within a 7.5-kilometre radius of the study area. The search indicated that artefact-only sites are the most common type within the vicinity of the study area (n=51, 53%). Most sites identified within the AHIMS search occur on elevated flat areas such as ridges, crests and hillocks or along creek lines (Figure 4.1). Table 4.3 and Table 4.4 detail the number of sites identified in the 7.5-kilometre AHIMS search. Refer to Section 5 for further details on site occurrences.

Table 4.3 Summary of sites recorded within 7.5 kilometres of the study area

Feature Type	Total	%
Artefact	51	53%
Modified Tree (Carved or Scarred)	10	10%
Stone Arrangement	7	7%
Aboriginal Ceremony and Dreaming	5	5%
Aboriginal Ceremony and Dreaming, Ceremonial Ring (Stone or Earth), Stone Arrangement	2	2%
Aboriginal Resource and Gathering	2	2%
Artefact, Potential Archaeological Deposit (PAD)	2	2%
Potential Archaeological Deposit (PAD)	2	2%
Restricted	2	2%
Aboriginal Ceremony and Dreaming, Burial, Ceremonial Ring (Stone or Earth), Modified Tree (Carved or Scarred)	1	1%
Aboriginal Ceremony and Dreaming, Ceremonial Ring (Stone or Earth), Potential Archaeological Deposit (PAD), Stone Arrangement	1	1%
Aboriginal Ceremony and Dreaming, Earth Mound	1	1%
Aboriginal Ceremony and Dreaming, Potential Archaeological Deposit (PAD)	1	1%
Aboriginal Ceremony and Dreaming, Stone Arrangement	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Conflict, Fish Trap	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Stone Arrangement	1	1%
Aboriginal Resource and Gathering, Water Hole	1	1%
Artefact, Grinding Groove	1	1%
Burial	1	1%
Ceremonial Ring (Stone or Earth)	1	1%
Conflict	1	1%
Stone Quarry, Artefact, Stone Arrangement	1	1%
TOTAL	**97**	

Three sites have been added to AHIMS since the original extensive search conducted in 2022, which include the following:

- AHIMS 44-3-0282 (Evans Plains AS1): artefact site associated with the current project
- AHIMS 44-3-0283 (Evans Plains IF1): artefact site associated with the current project
- AHIMS 44-3-0281 (burial and ceremonial site): determined not a site

Notably, the study area falls within the boundaries of Mount Panorama/Wahluu as defined in the site card for AHIMS 44-3-0280 ('Outline of the fallen warrior Wahluu'). Aboriginal Dreaming and Creation stories indicate this boundary is the outline of Wahluu and, as such, is sacred to local Wiradjuri people. The site extends outward from the top of Mount Panorama/Wahluu with an approximate 3.8-kilometre radius. It is noted that a smaller, separate area named 'Bubay Wahluu' is present to the north-west, encompassing Mount Stewart.

It should also be noted that the stone arrangement (AHIMS 44-3-0043) located on the hillock adjacent to the study area was further investigated in 2019 by Extent Heritage, and as a result has been listed as destroyed with no remnants of the arrangement remaining.

For the purpose of Figure 4.1, Figure 4.2 and Table 4.4 it is assumed that the correct coordinate system has been registered for each site.

Table 4.4 Summary of sites recorded within 500 metres of study area

Name	AHIMS No.	Type	Location Landform	Cadastral Boundary
Mount Aspley	44-3-0043	Stone Arrangement	Hillock	On eastern boundary of the study area
MPW-GS1	44-3-0238	Open Site	Slope	On south-eastern boundary
GH3	44-3-0103	Open Camp Site	Ridge	On north-eastern boundary of the study area
SP-4	44-3-0093	Isolated Artefact	Ridge	On eastern boundary of the study area

As noted above, the study area does fall within the boundaries of Mount Panorama/Wahluu as defined in the site card for AHIMS 44-3-0280. As AHIMS provides mapped site points rather than site with large boundaries such as this, it is not included in the table above or the mapping hereafter.

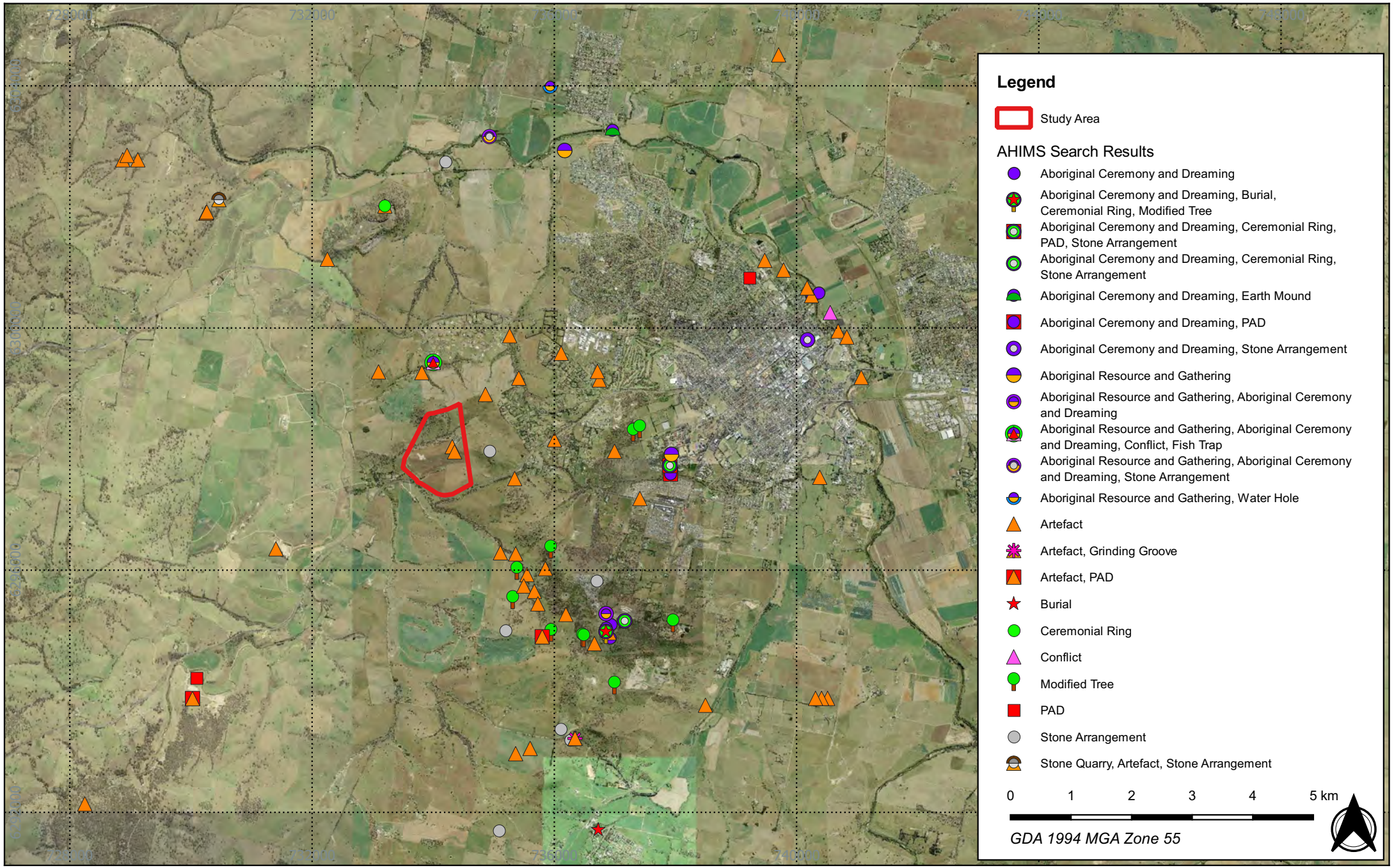

Figure 4.1 - AHIMS sites within 7.5 km of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

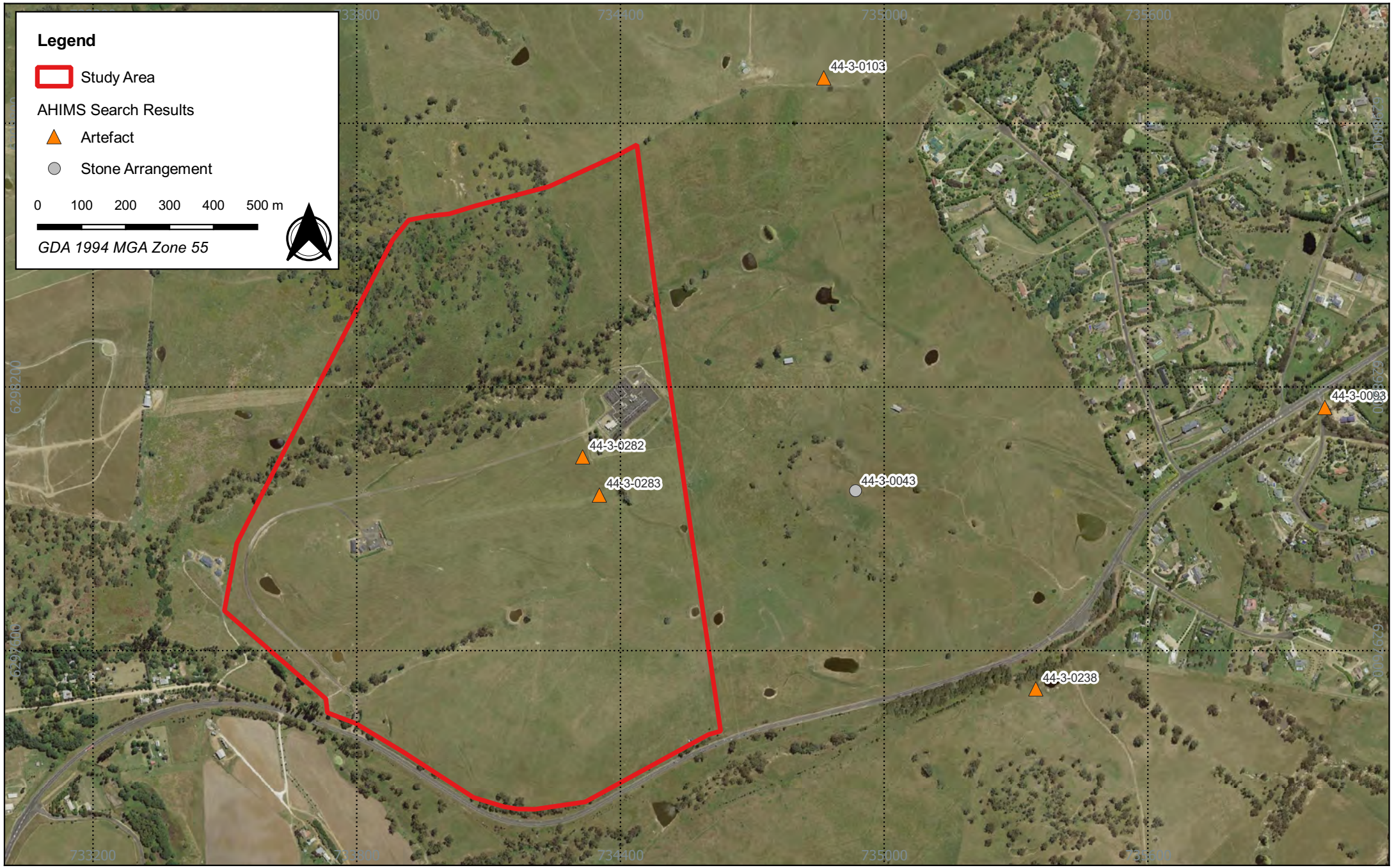

Figure 4.2 - AHIMS sites within close proximity to the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

4.2.3 LOCAL ARCHAEOLOGICAL CONTEXT

Archaeological investigations of the Bathurst, and in particular the suburb of Evans Plains, have been conducted in response to the spread of renewable energy farms, transmission lines and extensive highway upgrades within the local area. Limited ethnographic accounts of early settlers and explorers were once considered the primary source for archaeological enquiry. however, with the spread of development throughout Central NSW, archaeological investigations have increased accordingly.

An ample volume of archaeological studies have been completed in the region, and this section presents a synopsis of selected archaeological investigations of direct relevance to the study area. These reports have been selected based on their landform context and proximity and relationship to the study area. The reports that have been reviewed are detailed in Table 4.5, and their locations in relation to the study area are provided in Figure 4.3.

Table 4.5 Reports selected for review as part of local archaeological context.

Author	Date	Relevance to Study Area	Type of assessment
Pickering	1980	An archaeological investigation of the proposed Bathurst-Raglan – Mount Panorama Transmission Line – less than 1 kilometre south of the study area	Survey
Doug Williams	1992	An archaeological investigation of the Proposed 66kv Transmission Line from the Stewart Substation to the Panorama Substation, Bathurst, NSW – transects the study area	Survey
Matthew J. Barber & Doug Williams	1993	An archaeological investigation of 'Green Hills', Bathurst, NSW – located along the northern border of lot and DP boundary in which the study area is located	Survey
Doug Williams	1993	An archaeological investigation of Meadow Flat, Bathurst NSW – located on the southern border of the study area.	Survey
Doug Williams	1996	An archaeological survey of the area of proposed road works on the Mid-Western Highway, between Bathurst and Evans Plains – located immediately south of the study area.	Survey

AN ARCHAEOLOGICAL INVESTIGATION OF THE PROPOSED BATHURST – RAGLAN – MOUNT PANORAMA TRANSMISSION LINE (PICKERING 1980)

Pickering undertook an archaeological assessment on the Bathurst – Raglan – Mount Panorama transmission line. The pedestrian survey identified 7 Aboriginal sites including isolated finds, an open artefact scatter and a deflated stone arrangement. These sites spanned multiple landforms including crest, spur, and lower slope contexts. In total, 6 of the 7 recorded sites were in proximity to waters: either Queen Charlotte's Creek or above unnamed drainage lines.

Artefact materials identified in this assessment included 5 cores and 6 flakes comprising quartz, quartzite, chert, and basalt. Pickering concluded that water-worn pebbles were the primary raw source material for these sites.

AN ARCHAEOLOGICAL INVESTIGATION OF THE PROPOSED 66KV TRANSMISSION LINE FROM THE STEWART SUBSTATION TO THE PANORAMA SUBSTATION (WILLIAMS 1992)

In 1992, Williams completed a pedestrian survey along a 2-kilometre stretch of the Mid-Western Highway. The survey route undertaken transects the study area (Figure 4.2). This assessment identified 15 artefact materials across 3 open artefact scatters and an isolated find. The recorded sites spanned multiple landforms including mid-slope, ridge, and spur contexts. In total, the assemblage included 9 pieces of quartz, 3 fine-grained volcanics, one chert, one silcrete, and a granite hammerstone.

Similarly to Pickering's results, Williams concluded that water-worn pebbles were the primary source of raw materials for prior knapping activities.

AN ARCHAEOLOGICAL INVESTIGATION OF 'GREEN HILLS' (BARBER & WILLIAMS 1993)

Barber and Williams undertook a pedestrian survey on 218 hectares within the 'Greenhills' property to the north of the study area. They identified 4 open artefact scatters and one isolated artefact, comprising a total of 34 artefacts. The largest scatter within the assemblage consisted of 22 artefacts located outside their assessment area. An exact location relative to their site is not provided; however, this site was situated 40–50 metres from a creek. The raw materials consisted of quartz, chert, volcanics, silcrete, and quartzite. The study concluded that 2 of the 4 scatters were located on terminations of gentle spurs, with the 3rd identified on a lower slope. The isolated artefact was identified along a ridgeline.

From this, Barber and Williams determined that the sites that found closer to the creek line were likely to yield subsurface deposits. They similarly concluded that the identified site distributions were indicative of those observed across the region.

AN ARCHAEOLOGICAL INVESTIGATION OF MEADOW FLAT, BATHURST NSW

Williams was engaged in completion of an archaeological assessment on a 150-hectare area at Meadow Flat, near Bathurst. A pedestrian survey identified 2 sites along Eusdale Creek. The first MF-1 (AHIMS UNKNOWN) comprised 3 artefacts (13.6% of the total assemblage). Comparatively, MF-2 (AHIMS UNKNOWN) contained 19 artefacts, consisting of 8 quartz, 4 fine-grained siliceous, 4 volcanics, 3 mudstone, 2 indurated mudstone, and one silcrete.

Williams concluded that the artefacts were likely from the most recent phase of stone technology (the bipolar phase). As above, the report found that water-worn pebbles were the main source of raw material for flaked artefacts.

AN ARCHAEOLOGICAL SURVEY OF THE AREA OF PROPOSED ROAD WORKS ON THE MID -WESTERN HIGHWAY, BETWEEN BATHURST AND EVANS PLAINS (WILLAMS BARBER ARCHAEOLOGICAL SERVICES 1996)

Williams Barber Archaeological Services undertook a pedestrian survey along 11.8 hectares of the Mid-Western Highway road corridor. The survey did not identify any Aboriginal sites, artefactual remains or scarred trees. This was attributed to poor site visibility. Williams concluded that there was moderate potential for artefactual materials to be present, particularly on spurs.

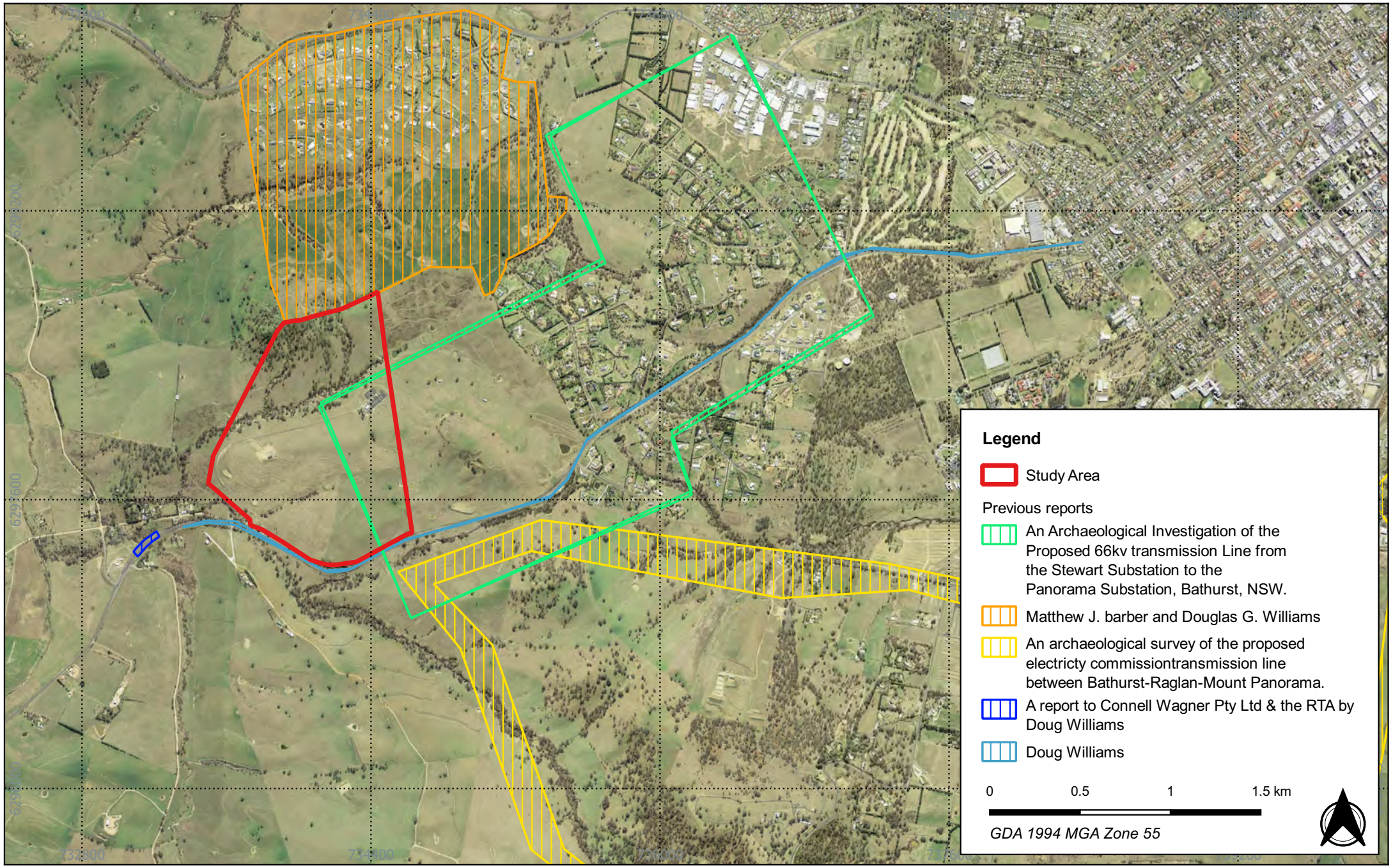

Figure 4.3 - Location of studies undertaken in the vicinity of the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

5 PREDICTIVE MODEL

Austral has used the information produced as part of the archaeological and environmental context sections to formulate a broad predictive model that identifies the type and character of Aboriginal cultural heritage sites that may be present within the study area.

The predictive model is based upon the analysis of the following key variables:

- Relationship between site types and their spatial distribution within the landscape.
- Raw site types, raw material types and site densities and their relationship to salient environmental features.
- Information in ethnohistorical sources that may indicate important natural resources or landscape features that may have been exploited.
- Potential chronological and spatial relationships between sites

A predictive model has been developed based on the consideration of the variables outlined above that indicates the lively site types that will be encountered during the archaeological survey and archaeological testing.

5.1 ANALYSIS OF KEY VARIABLES

The AHIMS search completed for this project has identified similar trends in Aboriginal site types within the region. Commonly recorded sites types in the wider region are artefact sites (n=55, 58.6%), with isolated artefacts comprising 34.04% of the sample, followed by open camp sites at 18.09%. The data outlined in Table 5.1 shows that 92.4% (n=49) of artefact sites were identified independently of other site features rather than as composite sites, i.e. artefact and grinding grooves. The second most common registered site feature in the vicinity of the study area is stone arrangements at 12.8%.

It should be noted that any analysis using AHIMS data will be prone to biases, as it relates to sites that have been recorded over the past 40 years. During this time, varying methodologies have been used to identify sites, and a large portion of the surrounding landscape may have been subject to limited or no assessment. Therefore, site distribution is likely to be reflective of survey methods and patterns and should not be considered a comprehensive list of all Aboriginal sites within a given region. A summary of Aboriginal heritage sites within 7.5 kilometres of the study area is included in Table 5.1.

Table 5.1 AHIMS registered sites within 7.5 kilometres of the study area

Feature Type	Total	%
Artefact	51	53%
Modified Tree (Carved or Scarred)	10	10%
Stone Arrangement	7	7%
Aboriginal Ceremony and Dreaming	5	5%
Aboriginal Ceremony and Dreaming, Ceremonial Ring (Stone or Earth), Stone Arrangement	2	2%
Aboriginal Resource and Gathering	2	2%
Artefact, Potential Archaeological Deposit (PAD)	2	2%
Potential Archaeological Deposit (PAD)	2	2%
Restricted	2	2%
Aboriginal Ceremony and Dreaming, Burial, Ceremonial Ring (Stone or Earth), Modified Tree (Carved or Scarred)	1	1%
Aboriginal Ceremony and Dreaming, Ceremonial Ring (Stone or Earth), Potential Archaeological Deposit (PAD), Stone Arrangement	1	1%

Feature Type	Total	%
Aboriginal Ceremony and Dreaming, Earth Mound	1	1%
Aboriginal Ceremony and Dreaming, Potential Archaeological Deposit (PAD)	1	1%
Aboriginal Ceremony and Dreaming, Stone Arrangement	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Conflict, Fish Trap	1	1%
Aboriginal Resource and Gathering, Aboriginal Ceremony and Dreaming, Stone Arrangement	1	1%
Aboriginal Resource and Gathering, Water Hole	1	1%
Artefact, Grinding Groove	1	1%
Burial	1	1%
Ceremonial Ring (Stone or Earth)	1	1%
Conflict	1	1%
Stone Quarry, Artefact, Stone Arrangement	1	1%
TOTAL	97	

5.1.1 SOIL LANDSCAPE

The study area is within the Bathurst soil landscape, a residual landscape defined by the presence of non-calcic brown soils and yellow solodic soils throughout lower slope and drainage line contexts (Department of Planning & Industry 2025). The Bathurst landscape is known to host the greatest variety and number of Aboriginal sites. The identification of numerous sites within this soil landscape is likely due to its prevalence in the local context. A total of 58.24% (n=53) of all sites recorded within the local area are found in the Bathurst soil landscape. This includes 60.38% (n=32) of all previously recorded artefact site types, both isolated and in scatter. Figure 5.1 and Figure 5.2 outline the distribution of different site types recorded in the local area.

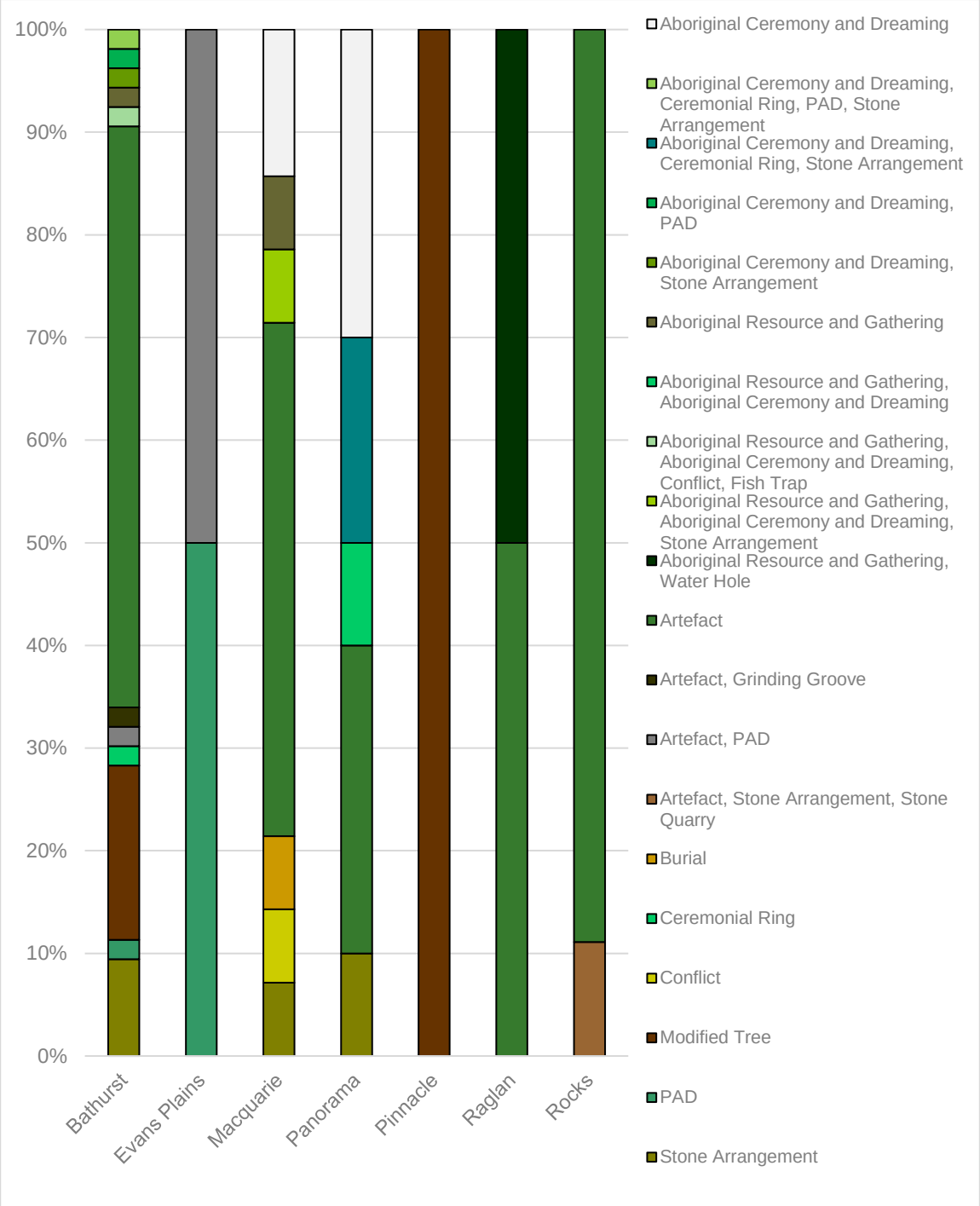

Figure 5.1 Site frequency distributions by soil landscape

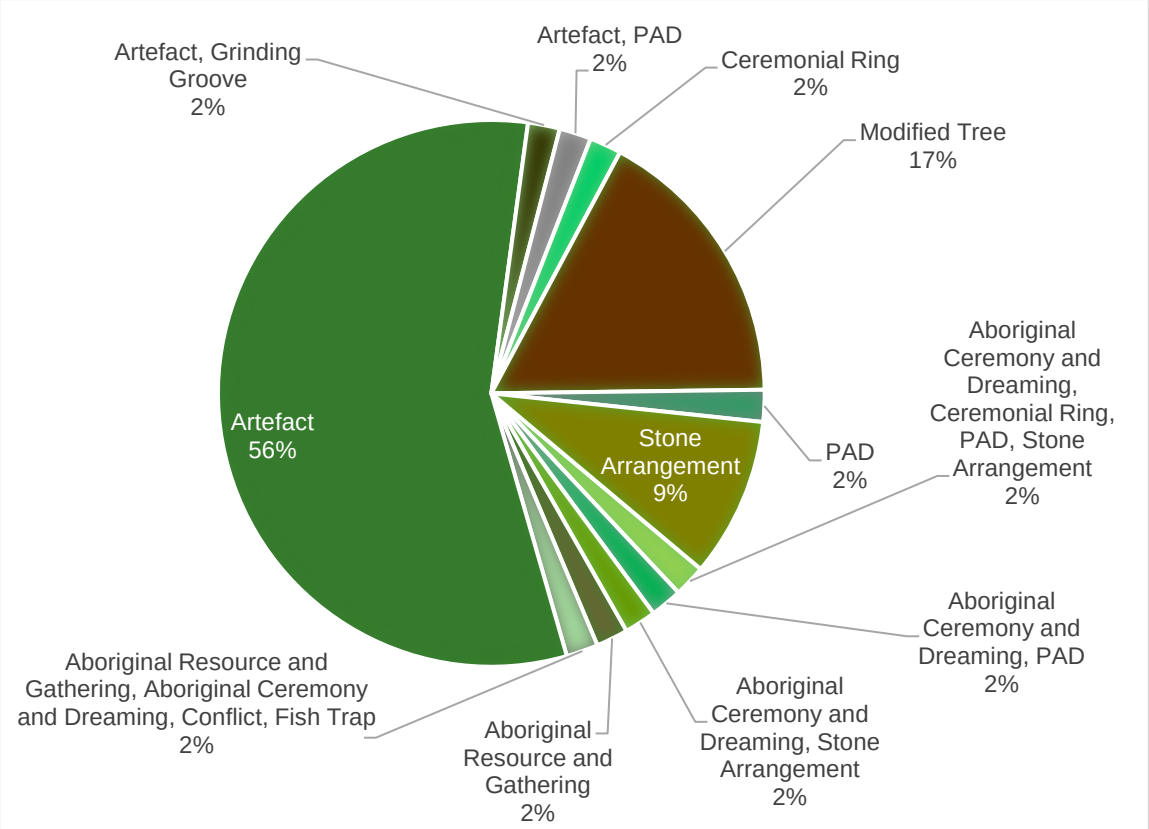

Figure 5.2 Site type frequencies in the Bathurst soil profile

5.1.2 GEOLOGY

Geological units determine the availability of raw lithic materials suitable for artefact manufacture. Therefore, these contexts dictate the presence and composition of tangible sites. In the vicinity of the study area, most AHIMS registered sites were identified within a Bathurst Granite geological unit (n=55, 55.8%). Comparatively, the second-highest artefact bearing unit recorded was a Canobolas Volcanics unit (n=16, 17.4%). Bathurst Granite units are defined by the presence of igneous rock materials, namely granite, granodiorite, and aplite (Geoscience Australia 2023b). As such, there is a heightened probability of granite and quartz artefact compositions, which explains the relative prevalence of stone arrangement sites in the local area (n=12, 12.8%).

The underlying geology of the study area and surrounding region would have provided a range of stone material types suitable to produce flaked stone artefacts. From the data provided in Table 4.4, quartz is the most common raw material type within 500 metres of the study area most commonly associated with stone tool manufacture as evidenced by artefacts recovered at archaeological sites across the region. No known stone sources are located within the study area.

An outline of site features by geological formation is provided in Figure 5.3.

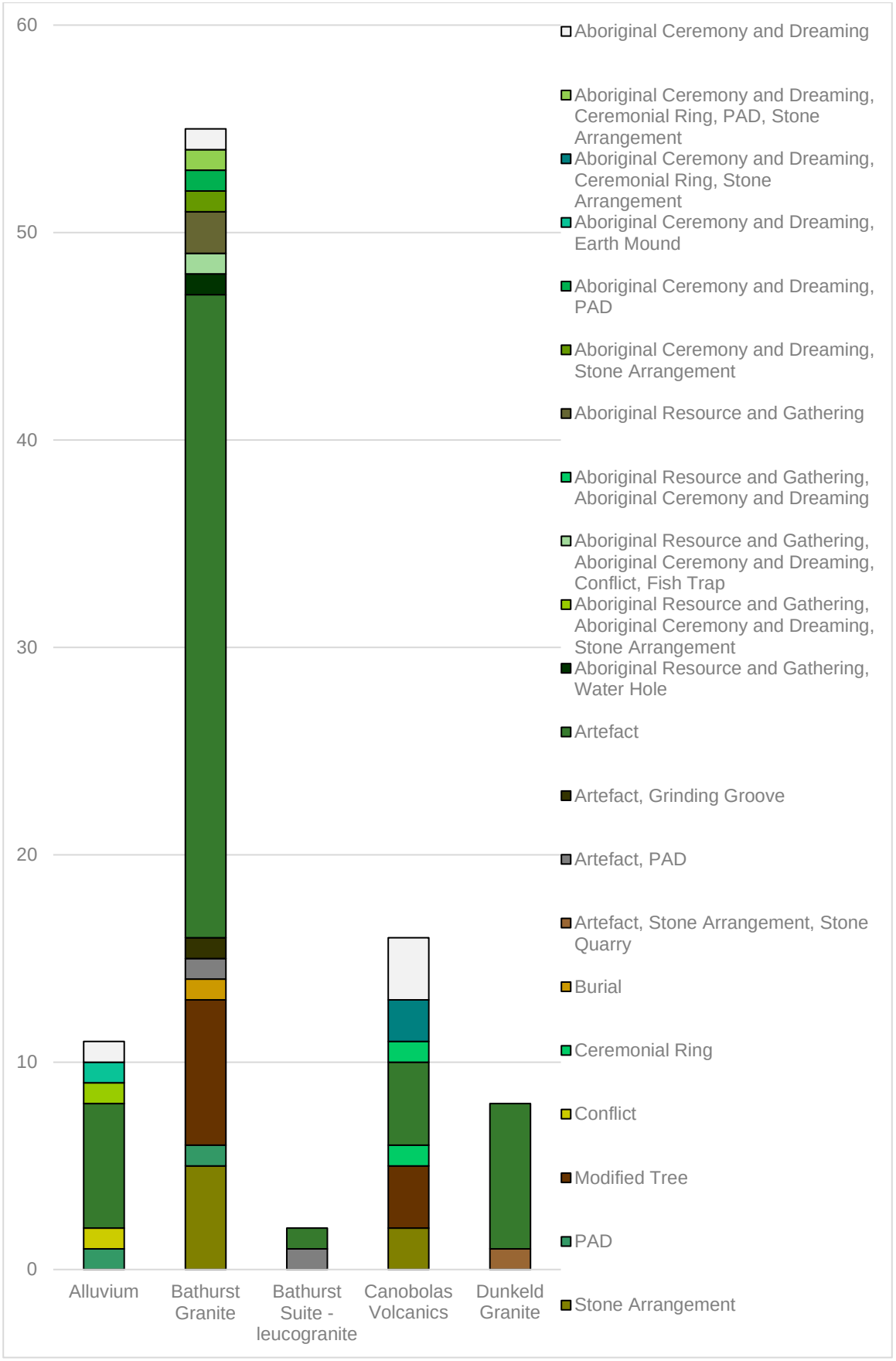

Figure 5.3 Site types in relation to geological units

5.1.3 HYDROLOGY

There is a strong correlation between proximity to water and distribution of known archaeological sites; simply, as proximity to water increases, so does site frequency. *The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* states that the given archaeological sensitivity of a site increases within 200 metres of a watercourse (Department of Environment, Climate Change and Water NSW 2010c). In the vicinity of the study area, most sites (n=80, 82.96%) are located within 200 metres of waters, with the majority located between 0 and 50 metres.

The study area is in proximity to two tributaries of Evans Plains Creek, ranging between 1st and 3rd order systems. These water courses run within and adjacent to the study area. Data from AHIMS registered sites within 7.5 kilometres of the study area shows that 67.1% of registered sites (n=49) are associated with 1st order streams, of which artefact sites comprise 51% (n=25). Comparatively, 16.4% were registered in association with 2nd order streams (n=12), and 8.2% with 5th order streams (n=6).

A summary of site feature distributions by stream order is provided in Figure 5.4.

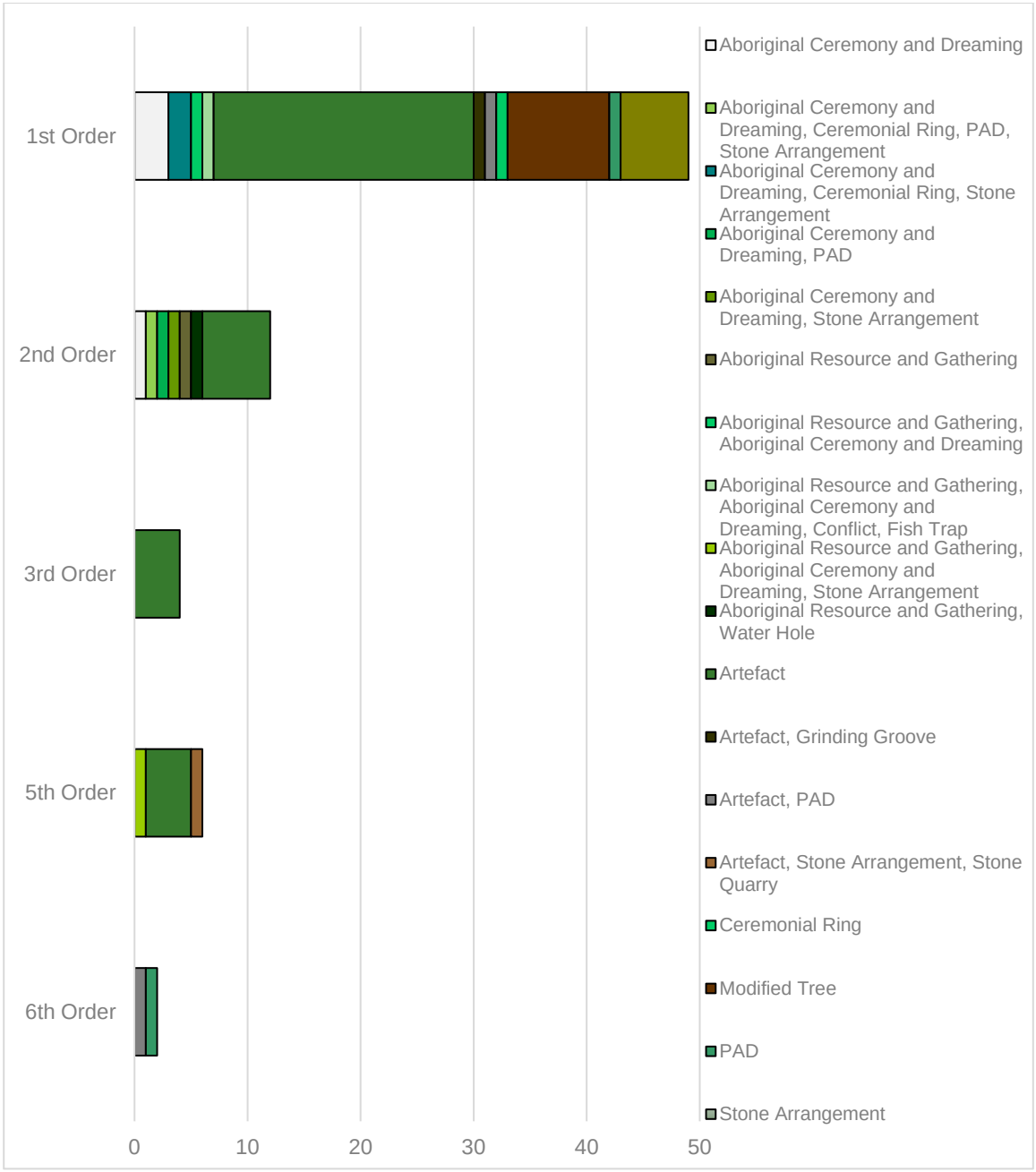

Figure 5.4 AHIMS site distributions by stream order

The likelihood of a body of water to be perennial increases with stream order. Analysis of AHIMS registered sites by their distance to perennial or non-perennial waters indicates that most identified sites (n=70, 76.1%) are in closer proximity to non-perennial than perennial water sources, which informs analysis of cultural movement and occupation patterns. Most registered sites are within 50 metres of their associated waters. Landforms in proximity to perennial water sources are more prone to inundation and flood events; therefore, occupation along non-perennial systems would have limited the potential for inundation while still allowing effective use of these water sources. Alternatively, this may indicate improved preservation potential of sites along non-perennial systems as they would be less prone to post-depositional flood events.

An outline of the distance from and distribution of sites along perennial and non-perennial systems is provided in Figure 5.5.

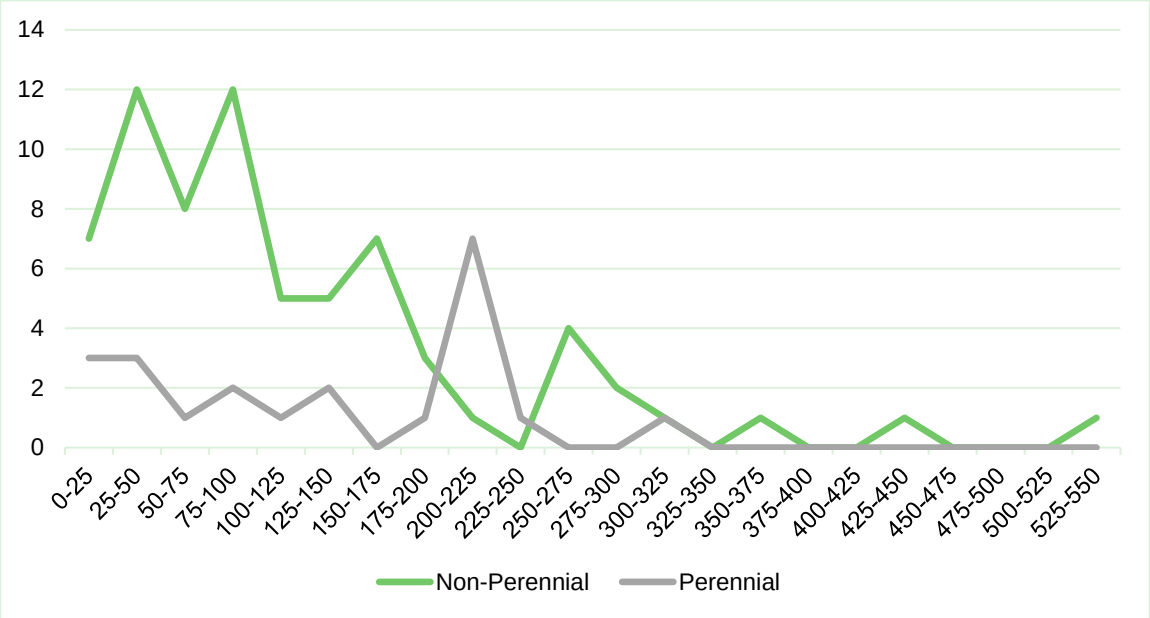

Figure 5.5 Site distributions by distance to perennial and non-perennial waters

5.1.4 TOPOGRAPHY

An analysis of the distribution of local sites in comparison to terrain has been undertaken using a spatial tool that classifies landforms using a range of parameters including slope, elevation and form (Stepinski & Jasiewicz 2011, Jasiewicz & Stepinski 2013). An overview of the landform classifications used by the algorithm is detailed in Figure 5.1.

Based on these definitions, the study area is located within 'ridge' and 'slope' landforms. A total of 47.2% (n=24) of artefact sites were registered on slopes, comprising 61.5% of the total sites on slope landforms. Comparatively, artefact sites make up 55.6% (n=5) of sites on ridges. As outlined in Section 5.1 above, artefact sites are the most common site type in the region. Therefore, these are likely indicative of the higher individual frequencies of their respective contexts.

Most known sites in the vicinity of the study area were registered on "slope" landforms (n=39, 42.4%). The algorithm outlined in Figure 5.3 above categorises slopes as landforms with a gradient between 3–60 degrees. There is a significant disparity between slopes, the most common artefact-bearing topographic unit, when compared against "flats" (n=14, 15.2%) and spurs (n=11, 11.96%); these constitute the 2nd and 3rd most common units, respectively.

An analysis of site feature distributions by topographic unit is provided in Figure 5.6.

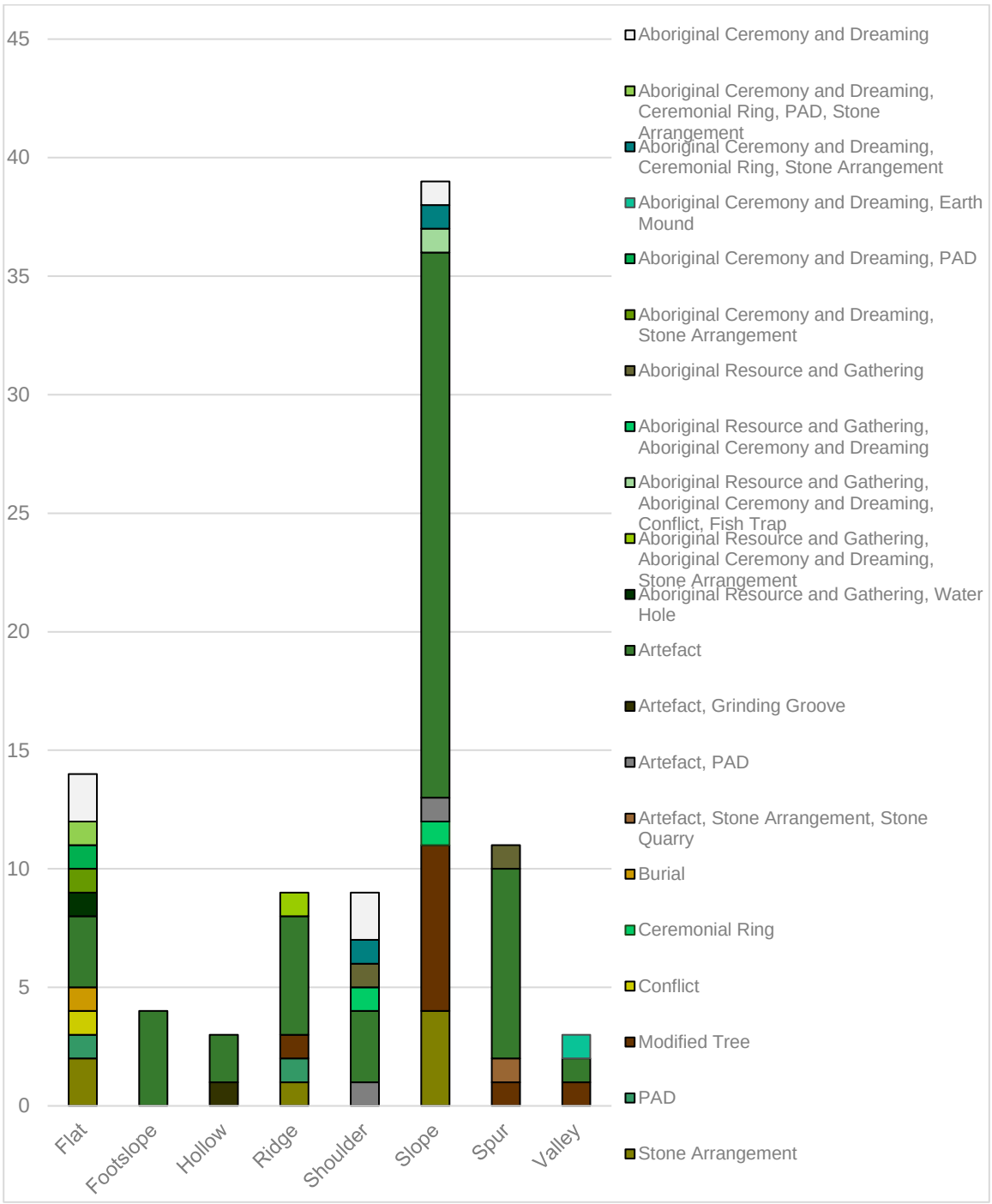

Figure 5.6 Site types in relation to topographic unit

5.1.5 ANALYSIS OF THE KNOWN SITES IN THE LOCALITY

The known sites in the vicinity of the study area consist entirely of low-density surface scatters, often deflated. Austral has undertaken an analysis of these sites due to the lack of test excavation data from the region. This analysis seeks to provide a detailed breakdown of the anticipated density and composition of lithic assemblages in the locality. Given this gap in test excavation data, the following section uses a representative sample of nearby AHIMS sites chosen for depth and availability of data. Details from these sites are summarized in Figure 5.8 to Figure 5.10.

The representative sample analysed spans 9 AHIMS sites in the vicinity of the study area, 5 of which were identified within 500 metres of the site (GH3, AHIMS 44-3-0103; Mount Aspley, AHIMS 44-3-0043; MPW-GS1, AHIMS 33-4-0238; SP-4, AHIMS 44-3-0093; and the Wambool and Bathurst waterways, AHIMS 44-3-0213).

With regard to the artefact types of the region, the data indicates that site types in the vicinity of the study area are highly varied. A total of 65.2% (n=15) artefacts are flakes (inclusive of broken, complete, partial, and retouched flakes). The remainder of sites within the sample were recorded as either tool materials (n=3, 13.04%), cultural or ceremonial sites (n=3, 13.04%) or cores (n=2, 8.7%). A representation of artefact types is provided in Figure 5.7.

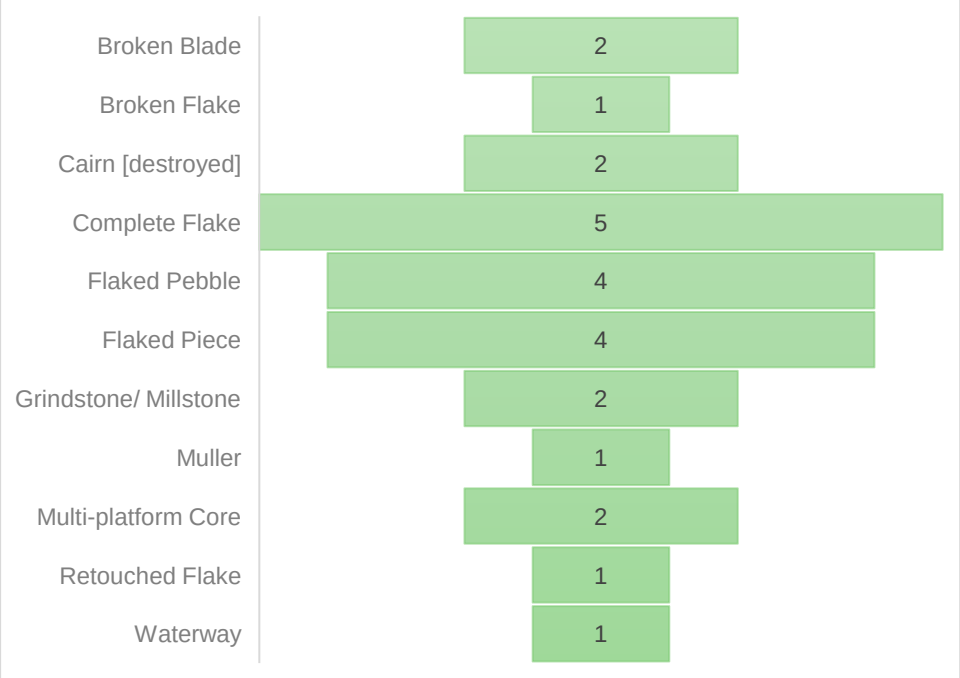

Figure 5.7 Artefact types from local assemblages

Generally, quartz dominates these local assemblages. From the lithic data within this representative sample, 76.5% (n=13) of sites contain quartz or microcrystalline quartz; comparatively, 23.5% (n=4) are igneous rocks. As such, it can be assumed that quartz is the most likely potential material, with igneous materials forming the remainder of the assemblage.

It should be noted that one site, MPW-AS3 (AHIMS 44-3-0243), had limited data on artifact distributions. However, data from this site is consistent with the wider regional data, in that the lithics can be classified as quartz material (quartzite and quartz porphyry or chert) or igneous rocks (basalt, granite, and rhyolite). Due to the lack of data on densities within this scatter, it has not been included in the analysis.

A representation of raw material types is contained within Figure 5.8.

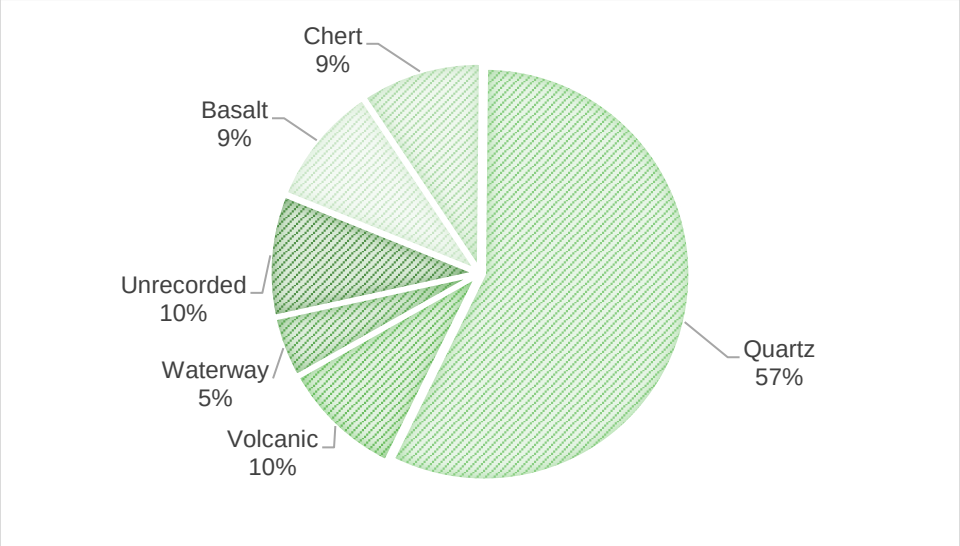

Figure 5.8 Raw material types from locally excavated assemblages

Isolated finds and low-density scatters are the most common site formations for identified artefact materials within the region. 87.5% of the sample sites (n=7) recorded 5 or fewer artefact materials. As such, it is likely that potential materials within the study area will exhibit a similar density. An outline of site density statistics is provided in Figure 5.9.

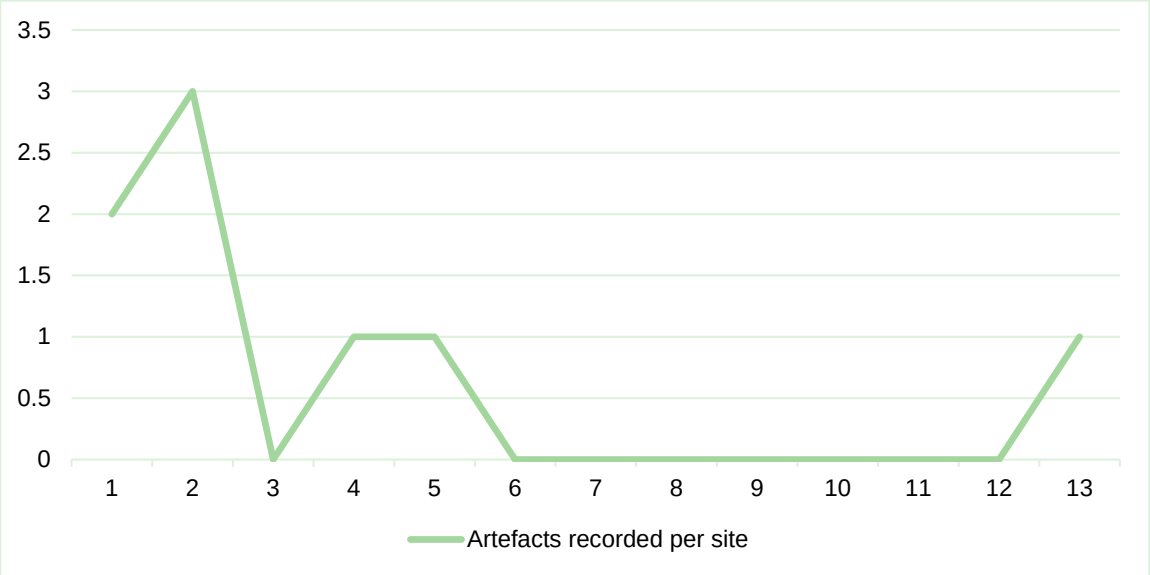

Figure 5.9 Number of artefacts recorded per site

5.2 PREDICTIVE STATEMENTS

Based on the analysis presented in Section 5.1, the following predictive statements can be made:

- The known sites within the region are dominated by artefact sites. Analysis of the site conditions against the contexts of the region suggests that artefact sites are similarly the most likely site type to be present within the study area. Where artefacts are identified, they are most likely to be isolated finds found independently of other site feature types.
- Quartz and granite are likely to be the most prominent raw materials in the study area, although there is the potential to encounter other igneous materials, such as basalt, granodiorite, or aplite.
- Most sites are located on 1st order streams, in association with non-perennial waters, such as the Evan Plains Creek tributaries that run within and adjacent to the study area.

- Whilst sites may be located in a variety of landform contexts, most sites are located within “slope” (42.4%) landform units. Artefact sites (61.5%), in particular, are common within these units.
- There are low frequencies of grinding groove sites, burials, and conflict sites within the local area. While these sites may occur, they are considered unlikely to be identified within the study area.

6 FIELD METHODS

A site specific investigation methodology has been developed for the project that complies with the Requirements of the Code of Practice (Department of Environment, Climate Change and Water NSW 2010b).

6.1 SURVEY METHODOLOGY

The survey was conducted on 20 December 2022 by Peter Griffin (Archaeologist, Austral) with assistance from representative from BLALC.

6.1.1 SURVEY OBJECTIVES

The objectives of the survey were to:

- Complete a systematic survey that targets areas that have been identified as having the potential to contain Aboriginal heritage values.
- Identify and record Aboriginal archaeological sites visible on the ground surface and areas of PAD.

6.1.2 SAMPLING STRATEGY

The survey methodology was designed to optimise the investigation of areas where archaeological materials may be present and visible, as well as investigation of the broader archaeological potential of all landform elements present within the study area, which included:

- Ridge
- Crest
- Saddle
- Slope
- Depression

The specific survey methodology developed for this assessment was guided by the survey requirements as set out in Requirements 5 to 10 of the Code of Practice (Department of Environment, Climate Change and Water NSW 2010b) and based upon consideration of the overall landform pattern within the study area, known landform elements (after Speight 2009) and the location of the previously identified sites. The survey targeted portions of the study area that would be impacted by the proposed development.

6.1.3 SURVEY METHODS

The archaeological survey consisted of pedestrian traverses completed by 1 team member. A key survey variable is ground visibility, which considers the amount of ground surface not covered by any vegetation; and exposure, which defines areas where dispersed surface soils and vegetative matter afford a clear assessment of the ground, were assessed across the study area and within each landform element. Overall survey coverage and calculated survey effectiveness was recorded. Note that the effectiveness of the field survey was largely dependent on the degree of ground surface visibility. Where surface visibility was restricted by dense vegetation cover, the potential for PADs was assessed, particularly in association with those landforms identified within the predictive model as more likely to contain Aboriginal archaeological sites. The potential for identification of cultural materials in these areas and all landform elements within the study area was considered against available evidence of land disturbance.

Photographs were taken of all landforms as well as representative surface visibility and, where present, surface exposures, soil profiles and disturbances relevant to the interpretation of the stratigraphic conditions and archaeological potential within the study area.

6.1.4 2025 ADDITIONAL SURVEY

The study area was amended in late 2025 to accommodate necessary upgrades to the Transgrid substation. As the additional area had not been surveyed or assessed previously, Brendan Fisher

(Senior Archaeologist, Austral) undertook a survey of the new area with Paul Boyd of Didge Ngunawal Clan in October 2025.

6.2 TEST EXCAVATION METHODOLOGY

The test excavation was conducted on 13 March 2023 to 17 March 2023 by Peta Rice (Archaeologist, Austral) with assistance from:

Name	Position / Organisation
Alexander Beben	Director, Austral
Jake Allen	Graduate Archaeologist, Austral
Dean Bell	Yurwang Gundana Cultural Heritage Services
Timothy Stubbs	TMS Consulting
Isaac Austin-Hall	TMS Consulting

The test excavation was completed in accordance with the notification and sampling strategy submitted to Heritage NSW on 10 February 2023. A copy of this notification is included in Appendix A.

6.2.1 TEST EXCAVATION OBJECTIVES

The objectives of the test excavation were to characterise the nature, extent and archaeological significance of Aboriginal objects associated with areas of high and moderate potential within the study area.

6.2.2 TEST EXCAVATION METHODOLOGY

The test excavation programme was undertaken according to the prescribed methodology of Requirements 14 to 20 and 23 to 26 of the Code of Practice (Department of Environment, Climate Change and Water NSW 2010b). Specifically, Requirement 15b of the Code of Practice stipulates that a sampling strategy must be developed for all test excavations prior to work commencing (Department of Environment, Climate Change and Water NSW 2010b, p.25). Test pits were to be placed on a systematic grid designed to target both areas likely to contain PADs and the locations of proposed impacts. Test pits must be located a minimum of 5 metres apart.

Each test pit was excavated following Requirement 16a of the Code of Practice using mattocks, shovels and trowels (Department of Environment, Climate Change and Water NSW 2010b, p.26). Sample units measured 500 millimetres^2, with the first test pit excavated in 50-millimetre spits to act as a geomorphologic example, and the remaining test pits excavated in 100-millimetre spits. Excavation was undertaken until the B-horizon was reached and then continued for another 100 millimetres to confirm that the following spit was culturally sterile. In general, excavation ceased when the top of the C horizon was encountered, a higher percentage of clay was evident, or coffee rock was encountered.

The objectives of the test excavation were to characterise the nature, extent and archaeological significance of Aboriginal objects associated with areas of high and moderate and low PADs within the study area. The survey identified one area of high potential (the ridgeline) and 2 areas of moderate to low potential (the slopes). Archaeological testing was completed in all areas of archaeological potential in order to accurately test the hypothesis of varying levels of archaeological potential within the project impact footprint. Test pit locations within the study area are shown in Table 7.1 and Figure 7.1.

Table 7.1 Location of test pits within the study area

Area	Description	No. test pits
Testing Area 1	Testing area 1 is located on the northern side of the study area and is situated within a sloped and depressed landform approximately 242 metres from an unnamed tributary of Evans Plains Creek. The testing will consist of 21 test pits placed at 10-m intervals along 3 transects: "Transect A" running east to west, "Transect E" running south to north and "Transect F" running northeast to southeast. All 3 of these transects were positioned to target areas that will be impacted by the project footprint.	12
Testing Area 2	Testing area 2 is located in the centre of the study area and is situated along either side of a ridge within an upper slope landform. The testing within this area will consist of 20 test pits placed at 10-m intervals along 2 transects, "Transect B" and "Transect C". Both transects will be spaced at 40m apart and run east to west. Both of these transects were positioned to target the area of high potential along the ridgeline.	20
Testing Area 3	Testing area 3 is located on the lower slope within the southern portion of the study area. The testing within this area will consist of 10 test pits spaced at 10-m intervals along 1 transect, "Transect D". This transect will be spaced 40m south of "Transect C" and will run east to west across the study area. "Transect D" has been positioned to target an area of low archaeological potential.	10

Test pits may be expanded to better understand the extent or characteristics of the archaeological resource present or if deep soil deposits necessitate excavation expansion to reach a basal layer. Triggers for expansion may comprise, but are not confined to:

- High relative artefact density
- Variation in raw material
- Unusual artefact types
- Evidence of a knapping event or other activities
- Presence of hearths or other features that could be dated to provide a chronology

Expansion as a result of higher relative artefact densities would be conducted by either expanding the initial test pit up to 1 square metre or by placing additional pits at up to 5-metre intervals from the target test pit. Should a feature be identified, and the extent or characteristic of the feature need to be determined, test pits would be placed directly adjacent the feature as required to identify the archaeological resource. Expansion of the test pits would total no more than 0.5% of the surface area of the study area as is specified in Requirement 16a of the Code of Practice (DECCW 2010, p.26). Expansion would cease upon determination by the archaeologists and RAP(s) present that the extent or characteristics of the site or feature have been satisfactorily defined.

6.2.3 SIEVING

On site processing of excavated soils and artefact retrieval was undertaken via dry sieving through a 5-millimetre nested sieve. Artefacts were collected from the sieves and placed in bags according to test pit provenance. Buckets containing material from the same spit were kept together and separate from other spits. All test pits were backfilled with the available material retrieved from the sieving location upon completion of the recording.

6.2.4 RECORDING

Detailed recording of all pits was undertaken, requiring the completion of an excavation recording form for each spit excavated. The form necessitated detailed descriptions of the soil profile, any evidence of disturbance and/or features, as well as depth of excavation and the number of artefacts and inclusions present. For each artefact a separate plastic bag was annotated with the project name, transect number, test pits number, spit number, date and recorder's initials.

Photographic recording occurred at the completion of each pit or when an archaeological feature was uncovered. A photographic record was taken of at least one wall section in each test pit. Together with a section drawing and stratigraphic photogrammetry from each pit, the photographs allowed for a detailed record of the strata present at the site.

6.2.5 ANALYSIS OF EXCAVATED MATERIAL

A lithic analysis was conducted by Peta Rice (Archaeologist, Austral). The lithic analysis was conducted to identify the presence of culturally modified lithic material within the archaeological record, with a secondary goal of identifying material, tool types and any indicators of *in situ* reduction that informs depositional integrity. All of the artefacts recovered were taken to temporary storage at the Austral Archaeology office in Albion Park (NSW) and are to be reburied within the study area. Aboriginal stakeholders are to be consulted as to an appropriate area to relocate these artefacts. A new AHIMS site card for the location where the artefacts are to be relocated is to be created and lodged with the AHIMS registrar.

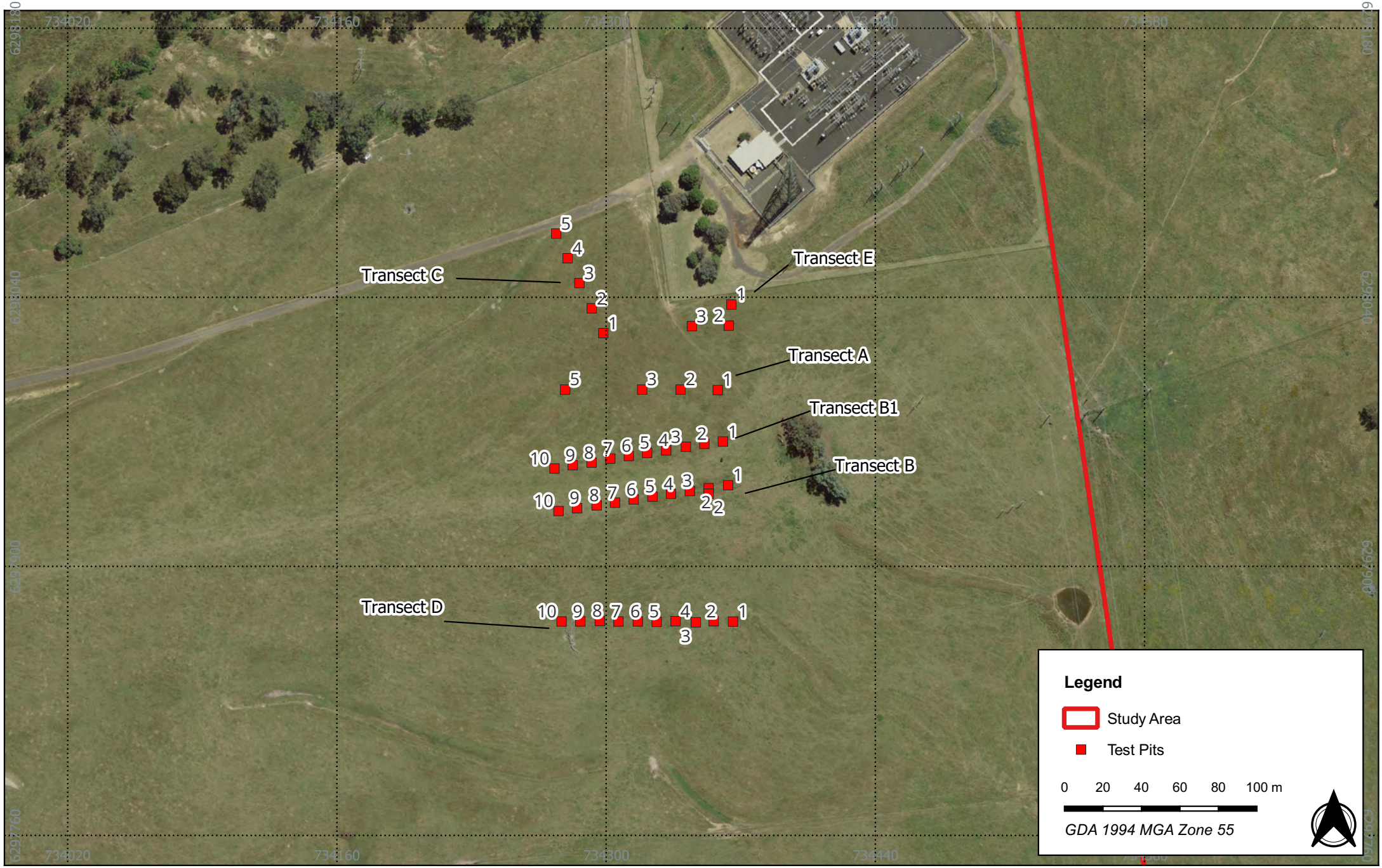

Figure 7.1 - Location of test pits within the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: Adam Hansford Date: 2025-12-05

AUSTRAL ARCHAEOLOGY

7 ARCHAEOLOGICAL RESULTS

The following section outlines the results of the archaeological investigations conducted within the study area.

7.1 ARCHAEOLOGICAL SURVEY RESULTS

7.1.1 VISIBILITY

In most archaeological reports and guidelines, visibility refers to GSV and is typically a percentage estimate of the visible ground surface allowing for the detection of (usually stone) artefacts present on the ground surface (Department of Environment, Climate Change and Water NSW 2010b). GSV across most of the study area was 5 percent because the study area was covered in long grass at the time of work. Only areas of erosion, such as along the road, where erosion was present was the ground surface visible.

EXPOSURE

Exposure refers to those parts of the surveyed landforms whose topsoil has visibly been removed due to naturally occurring erosion or man-made disturbances. Usually expressed as a percentage of the total land surface, it is a theory predicting the nature of geomorphological change (Department of Environment, Climate Change and Water NSW 2010b). Due the large amount of vegetation across the area surveyed, there was very little to no expose observed. The only location with any form of exposure was small area of erosion at one side of a fallen tree that amounted to less than one percent of the study area.

7.1.2 DISCUSSION OF RESULTS

The most significant existing disturbance in the study area is the access road (Figure 7.1 and Figure 7.2). The road follows the contours of the slope from the southern boundary of the study area around a spur to the eastern boundary. This road has been gravelled with road base. The rest of the study area has been cleared of trees except for some sentinel trees and riparian corridors (Figure 7.3). Trees located during the survey contained no evidence of having been modified. The study area contains evidence of animal grazing and construction of drainage lines to direct water downslope (Figure 7.3, Figure 7.4 and Figure 7.5).

The survey was conducted across 2 survey units, the Access Road and the substation footprint. The access road was only located on a slope landform. Two landforms are present within the substation survey unit, consisting of a gentle north facing slope rising up to a prominent ridgeline with crest and saddle with a steep south-facing slope that transitions into a gentle lower slope.

A description of these results as they relate to the survey units and observed landforms within the study area can be seen in Table 7.1, Table 7.2 and Figure 7.6.

Table 7.1 Survey coverage

Survey unit	Landform	Survey unit area (m²)	Visibility (%)	Exposure (%)	Effective coverage area (m²)	Effective coverage (%)
Road	Gentle Slope	19000	10%	1%	19	0.1
BESS Facility and Substation	Steep Slope	5848	5%	1%	3	0.5
	Gentle Slope	1,2854	5%	1%	64	0.5
	Ridge	5487	5%	1%	3	0.5

Table 7.2 Landform summary

Landform	Landform area (m²)	Area effectively surveyed (m²)	% of landform effectively surveyed	No. sites	No. artefacts / features
Gentle Slope	31,854	83	0.2	0	0
Steep Slope	5848	3	0.05	0	0
Ridge	5487	3	0.05	0	0

Based on these results and previously conducted landform analysis, the archaeological survey identified the ridgeline would have a high potential of containing archaeological deposits, and slopes to either side may have moderate potential. This assessment is based on the predictive model developed in Section 5. There was no cultural material identified during this survey, and no need for additional test excavations or assessment was identified.

Figure 7.1 East-facing view of disturbed existing access road.

Figure 7.2 South-facing view of disturbed access road adjacent to slope.

Figure 7.3 East-facing view of ridgeline landform in the centre of the study area.

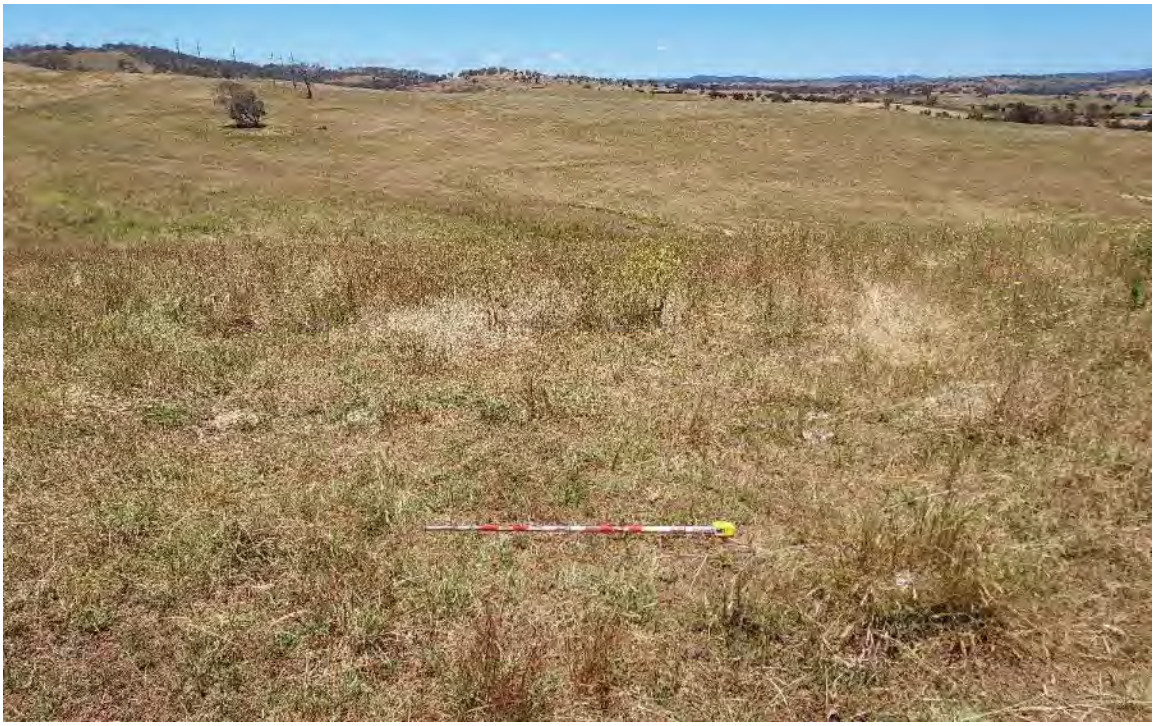

Figure 7.4 South-facing view showing GSV and GSE across majority of the study area.

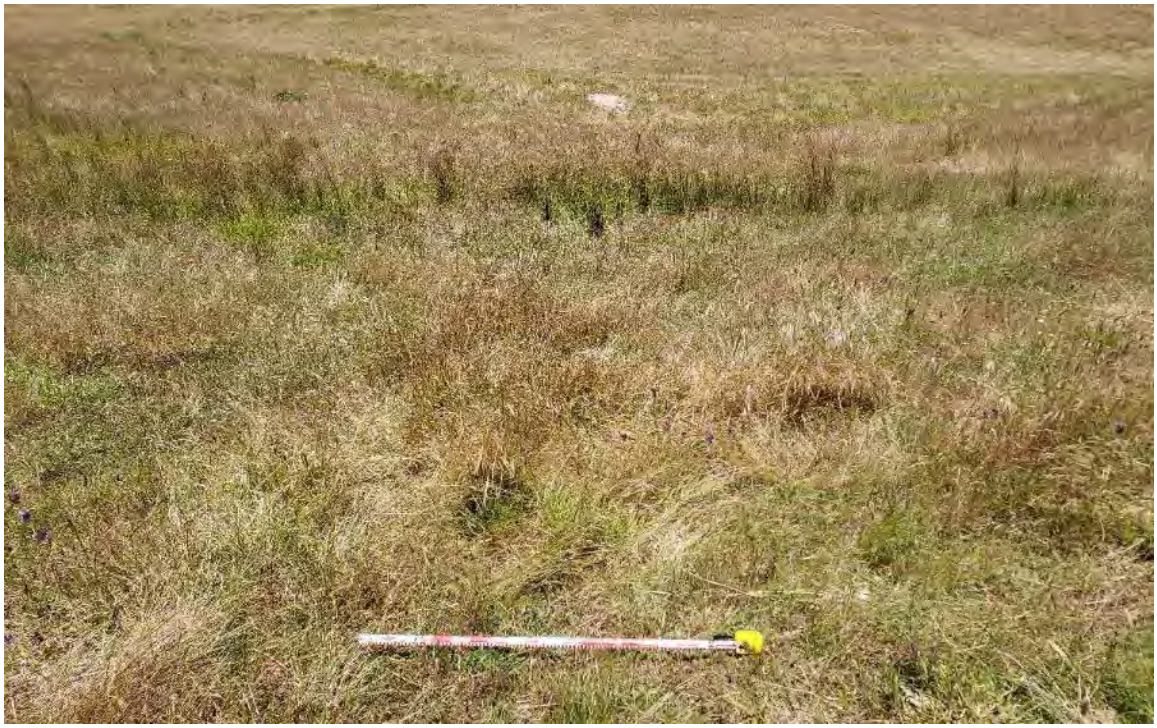

Figure 7.5 South-facing view of thick grass coverage within the study area.

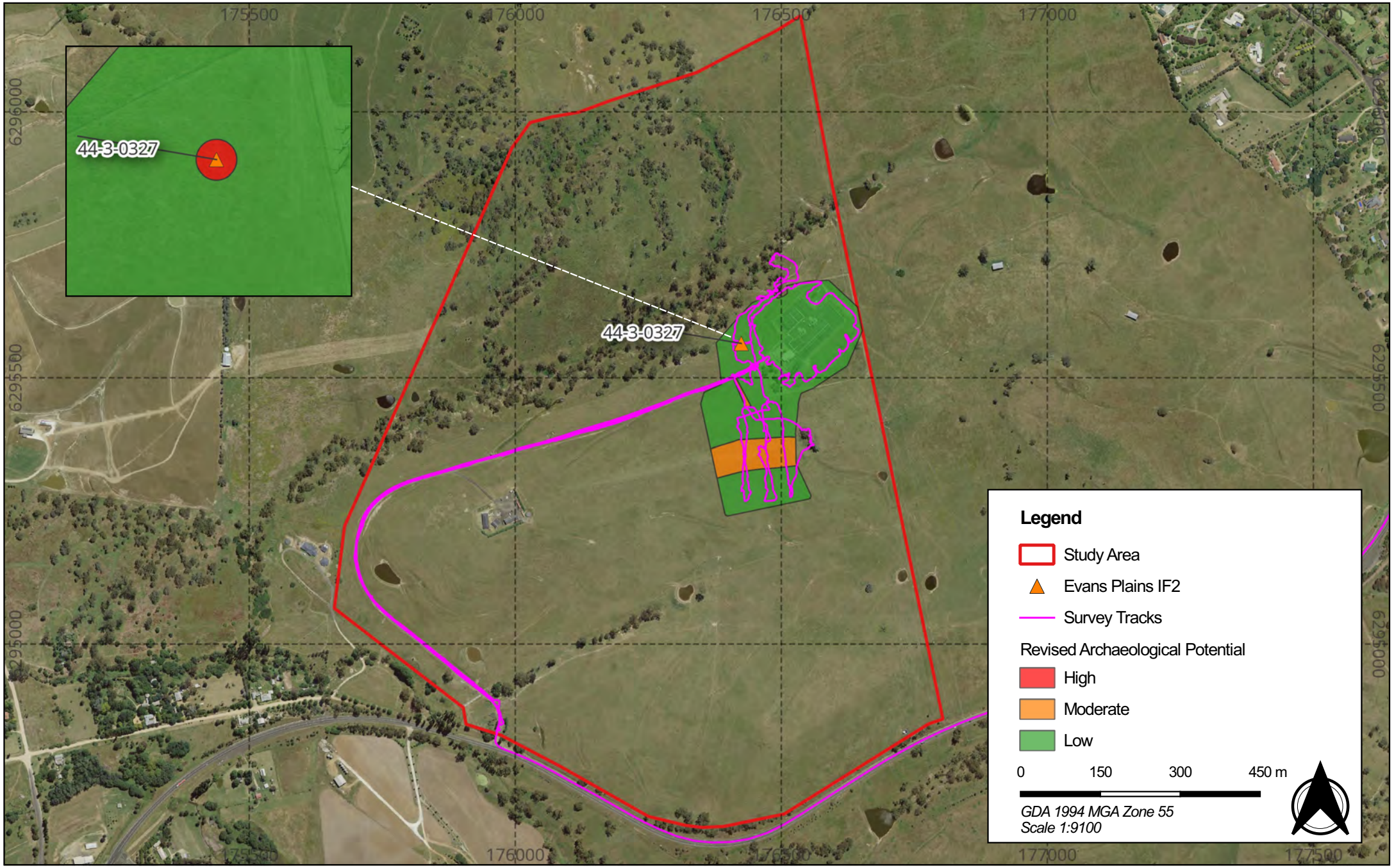

Figure 7.6 - Results from the archaeological survey

22091 - BESS Bathurst SSD - ACHA & HHA

Source: NSW LPI Aerial

Drawn by: PB Date: 2026-01-15

AUSTRAL ARCHAEOLOGY

7.1.3 2025 ADDITIONAL SURVEY

Survey of the additional Transgrid area was undertaken by Brendan Fisher (Senior Archaeologist, Austral) on 3 October 2025. Much of the study area was noted as being on a moderate slope in this area, with 10% GSV and an area of 90% exposure in an eroded area in the northern part of the Transgrid area. Railway ballast and gravel were identified in association with the substation access track, and disturbance included alluvial erosion, contour banking, and construction of the existing substation and associated infrastructure.

An isolated proximal quartz flake was identified within the Transgrid portion of the study area, due west of the existing substation. The artefact was found on a slope landform approximately 40 metres north of the substation access track and 15 metres west of a dirt track along the fence at the western substation boundary. During the survey, it was noted that the isolated artefact appeared to have been in a secondary context.

7.2 TEST EXCAVATION RESULTS

Based upon the results of the archaeological survey, Austral completed archaeological test excavations within the study area in areas of high, moderate and low archaeological potential. This consisted of 3 archaeological testing locations. Upon further assessment of the site, the original proposed test pit locations were readjusted to target areas more likely to have Aboriginal archaeological material present. The results from these areas are summarised within this section.

7.2.1 TESTING AREA 1

Testing within this area consisted of 12 test pits distributed 10 and 20 metres apart on 3 transects, labelled Transects A, C and E. Testing Area 1 is located on a gentle to mid-sloped landform on the northern side of the study area. Transect A ran east to west, Transect C ran south to north and Transect E ran northeast to southeast. The area was heavily covered with grass and weeds and as a result had low GSV. The landform context of Testing Area 1 is outlined in Figure 7.7.

Figure 7.7 Example of the landform context within Testing Area 1

SOILS, DISTURBANCE AND FEATURES

Soils across Testing Area 1 were generally comprised of a mid-brown sandy silt layer (A1 Horizon) transitioning to a mid-orangey brown sandy clay or coffee rock base layer (B Horizon). The terminal depths of these pits was between 100-440 millimetres.

A summary of soil characteristics across Testing Area 1 is provided in Table 7.3, Figure 7.8 and Figure 7.9.

Table 7.3 Summary of soil characters within Testing Area 1.

Soil Horizon	Soil Characteristics
A1 Horizon	Depth: 0-440 mm Munsell: 10YR 5/3 – 10YR 6/3 pH: 6 – 7 Description: Very compacted mid-brown to mid-grey, brown sandy silt to silty sand layer. Grass root inclusions from 0-100 mm at <2%, alongside sub-angular to sub-rounded crystal quartz inclusions at <10% and flecks of manganese towards bottom of horizon at <2%. A very diffuse transition into B Horizon.
B Horizon	Depth: 100 - 440 mm Munsell: 10YR 5/3 – 10YR 6/3 pH: 6 – 7 Description: Mid-brown compacted sandy clay or coffee rock base layer.

Figure 7.8 North section of test pit C4 showing soil profile.

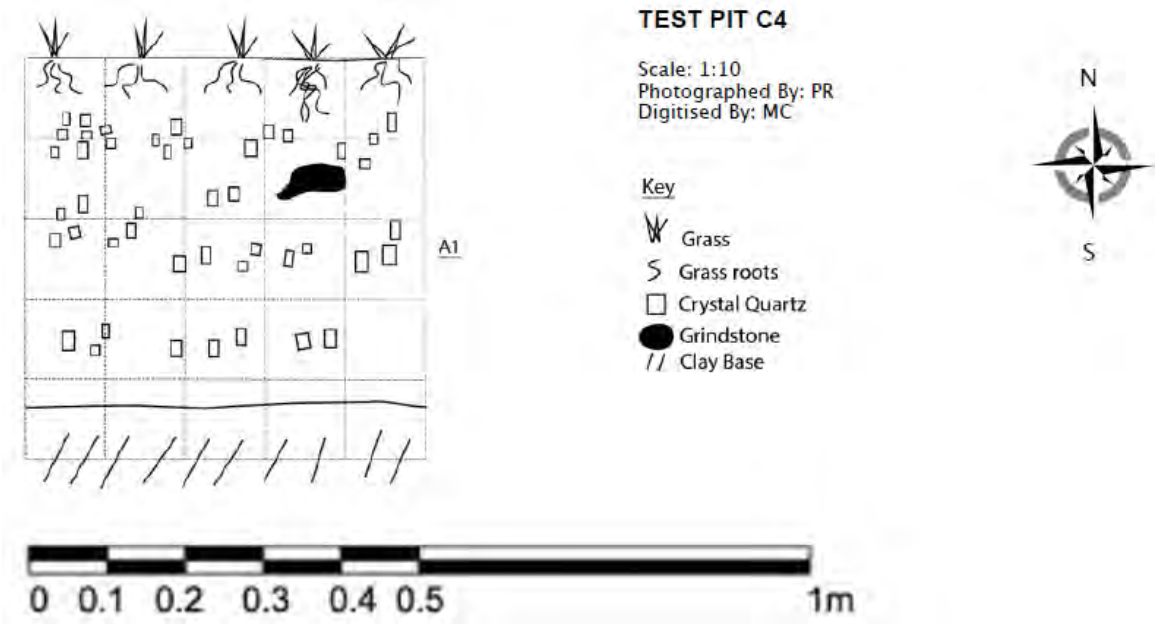

Figure 7.9 North section of Test Pit C4

7.2.2 TESTING AREA 2

Testing within this area consisted of 20 test pits and 1-metre by 1-metre expansion pit distributed 10 metres apart along 2 transects, labelled transects B and B1. Testing Area 2 is located on a crest landform situated in the centre of the study area. A saddle and ridgeline are apparent within the crest. Both transects ran east to west. Test pit B2 was extended into a 1-metre by 1-metre expansion pit due to the original test pit containing one crystal quartz retouched blade. The area was heavily covered with grass and weeds, which resulted in a low GSV. The landform context of Testing Area 2 is outlined in Figure 7.10.

Figure 7.10 Landform context of Testing Area 2

SOILS, DISTURBANCE AND FEATURES

Soils across Testing Area 2 were generally comprised of mid-brown to light greyish-brown sandy silt layer (A1 Horizon), transitioning into a mid-orangey brown sandy clay or coffee rock base layer (B Horizon). The overall depth was between 150-630 millimetres.

A summary of soil characteristics across Testing Area 2 is provided in Table 7.4, Figure 7.11 and Figure 7.12.

Table 7.4 Summary of soil characters within Testing Area 2

Soil Horizon	Soil Characteristics
A1 Horizon	Depth: 0-630mm Munsell: 7.5 YR 4/3 – 10YR 6/4 pH: 5.5 – 6.5 Description: Very compacted mid warm brown to mid grey-brown sandy silt layer. Grass root inclusions from 0-100 mm at <2% alongside sub-angular to sub-rounded crystal quartz inclusions at <10%. Small charcoal flecks within spit 2 <1%. A very diffuse transition into B Horizon.
B Horizon	Depth: 150-630mm Munsell: 10YR 5/2 – 10YR 6/3 pH: 5.5 – 6.5 Description: Mid-brown to light brown compacted sandy clay or coffee rock base layer.

Figure 7.11 North section of Test Pit B4 showing soil profile

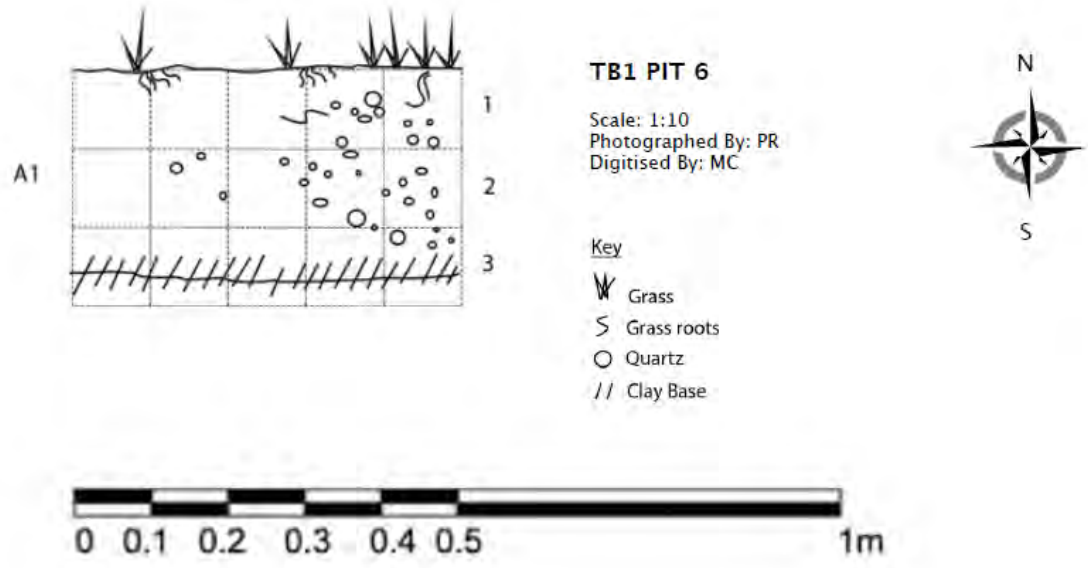

Figure 7.12 North section of Transect B1 Pit 6

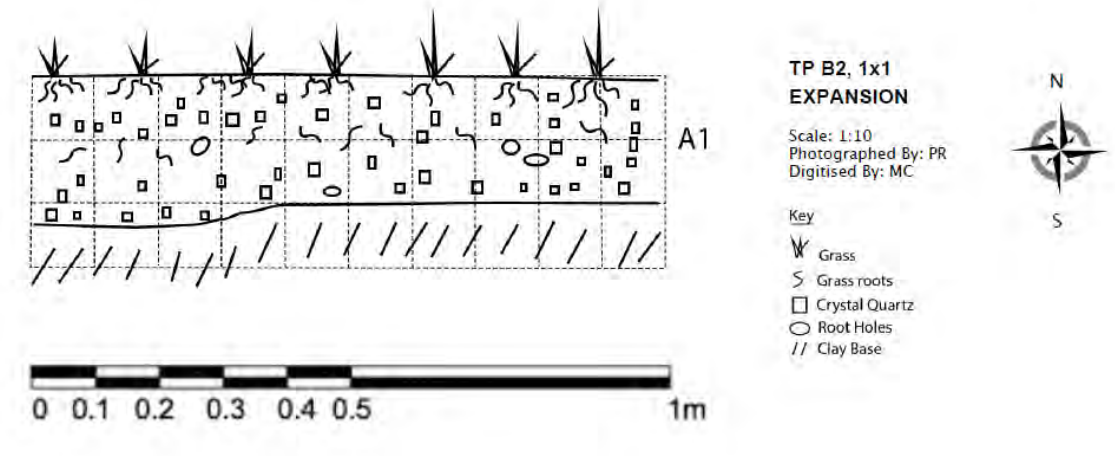

Figure 7.13 North section of Test Pit B2, 1x1 expansion

7.2.3 TESTING AREA 3

Testing within this area consisted of 10 test pits distributed 10 metres apart along one transect labelled Transect D running east to west. Testing Area 3 is located on a sloped landform situated on the southern side of the study area. The area was heavily covered with grass and weeds, which resulted in low GSV. The landform context of Testing Area 2 is outlined in Figure 7.14

Figure 7.14 Landform context of Testing Area 3

SOILS, DISTURBANCE AND FEATURES

Soils across Testing Area 3 were generally comprised of mid-brown to light greyish-brown sandy silt layer (A1 Horizon), followed by a warm mid-brown sandy silt layer (A2 Horizon), and finally transitioning into a mid-orangey brown sandy clay or coffee rock base layer (B Horizon). The terminal depths of these pits was between 200-500 millimetres.

A summary of soil characteristics across Testing Area 3 is provided in Table 7.5, Figure 7.15 and Figure 7.16.

Table 7.5 Summary of soil characters within Testing Area 3.

Soil Horizon	Soil Characteristics
A1 Horizon	Depth: 0-400mm Munsell: 10YR 5/3 pH: 5 Description: Very compacted mid-brown sandy silt layer. Grass root inclusions from 0-100 mm at <2% alongside sub-angular to sub-rounded crystal quartz inclusions at <10%. A very diffuse transition into A2 Horizon.
A2 Horizon	Depth: 250-500mm Munsell: 7.5YR 5/4 pH: 5.5 – 6.5 Description: Mid-brown to light brown compacted sandy clay or coffee rock base layer.
B Horizon	Depth: 200-500mm Munsell: 7.5YR 5/4 pH: 6 – 7 Description: Warm mid-brown compacted sandy clay base layer.

Figure 7.15 North section of Test Pit D2 showing soil profile

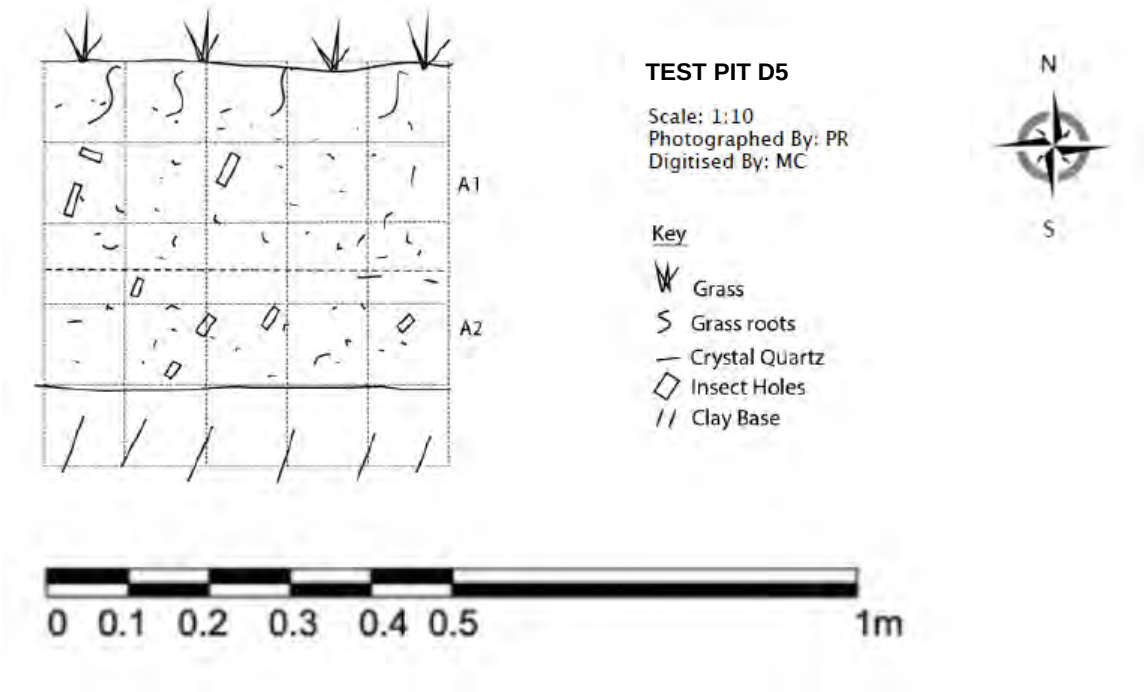

Figure 7.16 North section of Test Pit D5

ARTEFACT ASSEMBLAGE

Artefact density across the testing areas were generally sparse. In total, 5 artefacts were identified across the study area, with the greatest amount located in Transect C, which contained 3 artefacts comprising 60% of the total assemblage. Transects E and B also contained one artefact each. The higher volume of artefacts in Transect C is most likely due to drainage and erosion, which have caused artefacts to move down the slope over time. Of material types present, crystal quartz comprised 40% (n=2), quartzite comprised 40% (n=2) and greywacke comprised 20% (n=1).

The work identified a variety of stone tools, with presence of a grindstone (20%) (n=1), a grinding top stone (20%) (n=1), a multi-platform core (20%) (n=1), a complete flake (20%) (n=1) and a retouched blade (20%) (n=1).

The presence of some cortex (n=3) suggests this area was utilised for the early stages of reduction; however, with only one of these pieces having 5% cortex, this is likely to be stage two reduction. The existence of tools at 20% (n=1) suggests that stage three and four reduction also occurred at this site.

The artefact distribution throughout the study area is outlined in Figure 7.17.

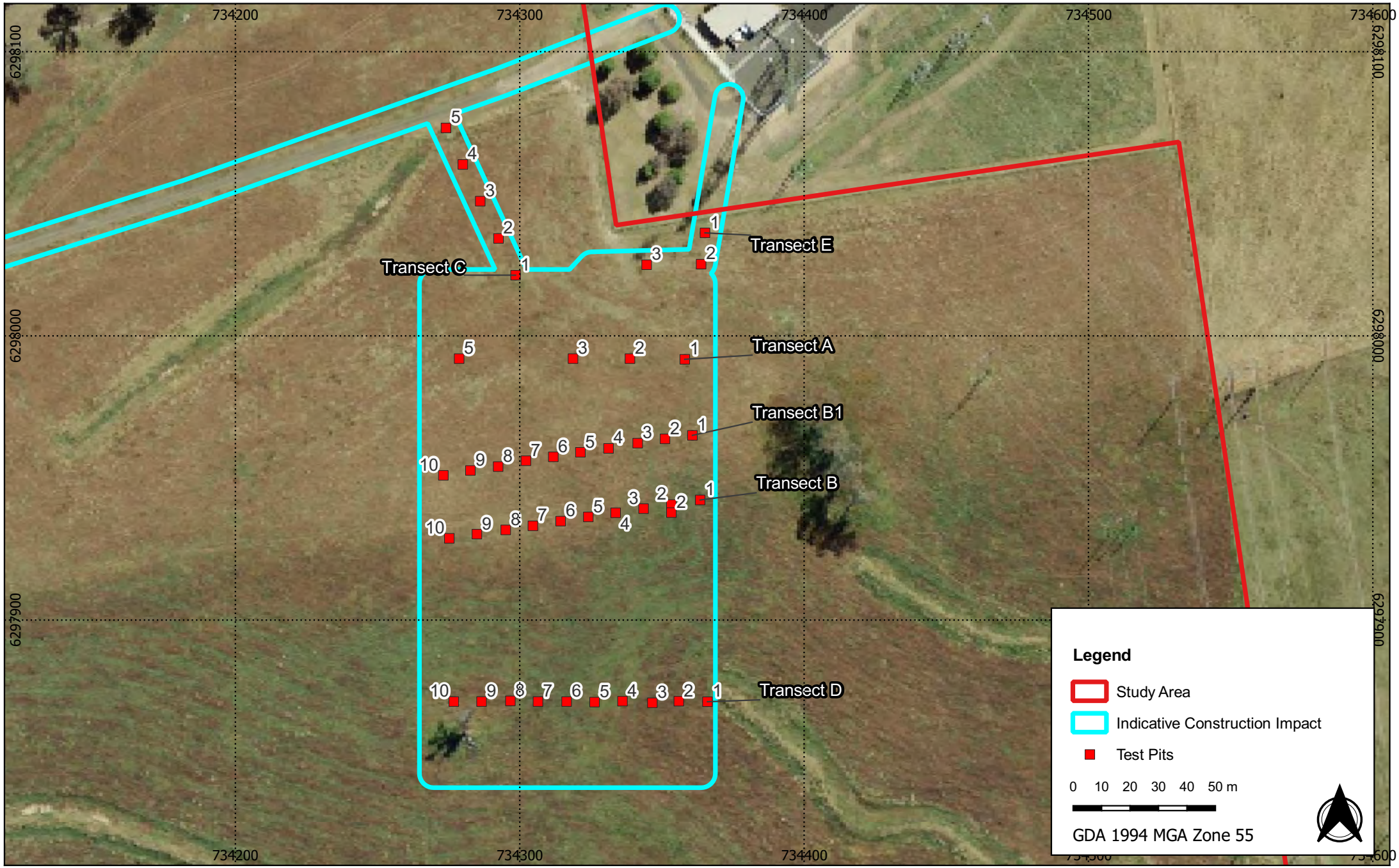

Figure 7.17 Location of test pits within the study area

22091 - 800 Mid Western Highway, Evans Plains, NSW - ACHA

Source: NSW LPI Aerial

Drawn by: ARH Date: 2023-03-30

AUSTRAL ARCHAEOLOGY

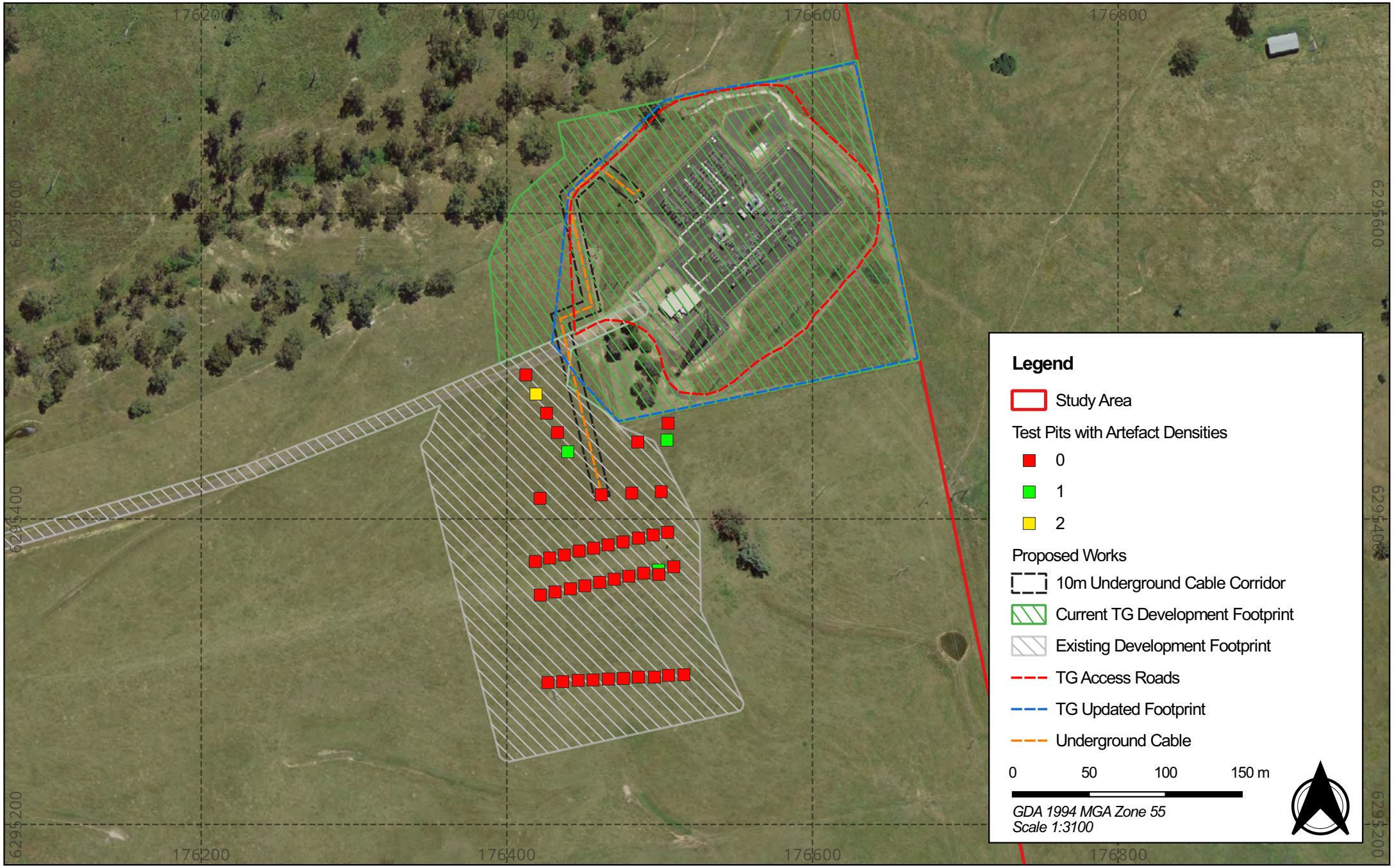

Figure 7.18 - Location of test pits with artefact densities within the study area

22091 - BESS Bathurst SSD - ACHA & HHA

Source: NSW LPI Aerial

Drawn by: PB Date: 2026-01-12

AUSTRAL ARCHAEOLOGY

7.3 LITHIC ANALYSIS

This lithic analysis aims to provide details of the stone material identified during the test excavation using standard terminology for artefact analysis taken from Holdaway & Stern (2013) and McCarthy (1976). Detailed artefact analysis entailed recording several characteristics for each artefact. Stone artefact raw materials were examined through a hand lens (x 10 magnification). Each artefact was recorded in a database form suitable for comparative analysis on a local and regional basis. The terminology used in the analysis is defined in Table 7.6.

Table 7.6 Terminology used in the identification of stone tools

Analytical Terms	Definition
Angular fragment / Debitage	A piece of debris exhibiting evidence of knapping but lacking key diagnostic traits (e.g. platform, termination, bulb of percussion)
Backing	Abrupt retouch normally found on one lateral margin of a tool and opposite the working edge.
Bladelet	A small (generally 8-12mm in width) example of a blade; a cutting or scraping tool that is prepared through retouch of an initial flake (blade blank) at least twice as long as it is wide.
Core	A nodule or block of siliceous rock from which sharp-edged slivers of stone are struck (generally with a hammerstone).
Cortex	The weathered outer layer of rock, differing in chemical and optical properties to the unweathered interior.
Distal flake	The termination end of a partial (broken) flake.
Dorsal surface	Outer surface of a flake (former surface of the core) characterised by cortex and/or negative concavities (flake scars) and ridges denoting prior removal of flakes.
Flake	A sliver of stone struck from a core exhibiting characteristic traits of force fracture.
Knapping	The process of fracturing flakes of stone from a core
Lateral margin	Left and right edges of a flake (platform oriented upward when viewing the ventral surface and distal end oriented upward for the dorsal surface).
Platform	Planar surface marking the location from which the flake was struck from the core.
Primary flake	Initial flake struck from a weathered cobble with a dorsal surface covered in cortex and lacking prior flake scars.
Proximal flake	The platform end of a partial (broken) flake.
Retouch	Alteration of the cutting edges of a flake or tool to refine sharpness, shape, angle or strength.
Termination	End of a flake opposite the platform denoting the place the force applied by the hammerstone exited the core.
Tertiary flake	Flake lacking dorsal or platform cortex indicating a high degree of prior reduction of the core from which it was knapped.
Ventral surface	Inner surface of a flake originally attached to a core exhibiting one or more traits of conchoidal fracture including a bulb of percussion, bulbar scar and ripple marks.

7.3.1 RESULTS OF THE ANALYSIS

The artefacts recovered during the test excavation program within the study area underwent a detailed lithic analysis by Peta Rice (Archaeologist, Austral). The distribution of artefacts within the test pits is presented in Table 7.7.

Table 7.7 Distribution of artefacts within test pits

Pit No.	Number of artefacts	Percentage of the total assemblage
C1	1	20%
C4	2	40%
B2	1	20%
E2	1	20%

The test excavations revealed a total of 5 artefacts across 3 transects within the study area. Between these 5 artefacts, 3 raw material types and 2 tool types were identified. The artefacts identified varied in size and purpose and, as a result, demonstrate evidence of a possible occupation site within the study area. Most artefacts were located within Transect C, which is located at the bottom of the northern slope within the study area. The higher volume of artefacts in Transect C is most likely due to drainage and erosion, which have caused artefacts to move down the slope over time. Most artefacts were located in spits 1 and 2, aside from the core, which was located in spit 4 (Figure 7.19).

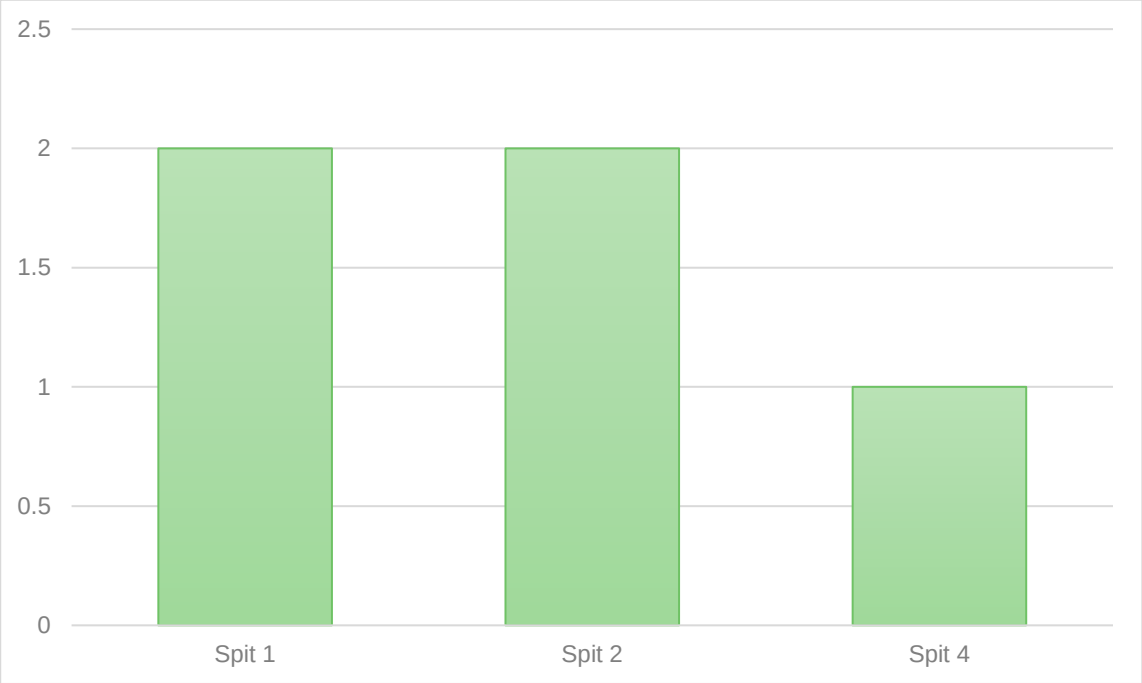

Figure 7.19 Number of artefacts identified per spit

7.3.2 RAW MATERIALS

The assemblage consisted of 3 stone materials, of which crystal quartz and quartzite comprised the majority. The artefacts that were associated with the crystal quartz and quartzite were consistent in their composition (colour, texture, etc.), so it is probable that these materials were obtained from the same source. In addition to the above named raw materials, one greywacke artefact was identified (Figure 7.20).

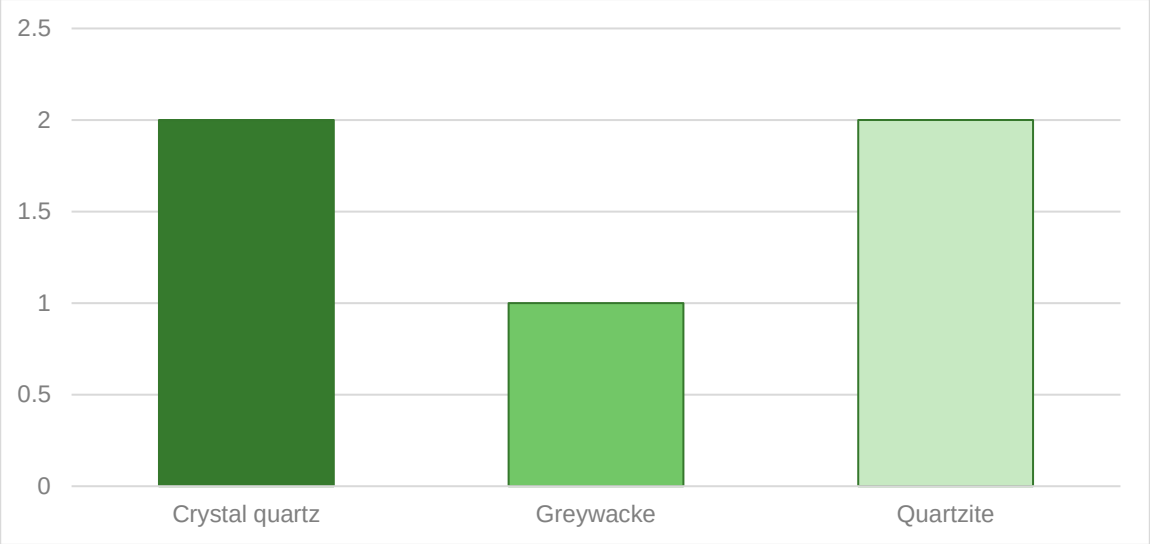

Figure 7.20 Total number of artefacts per raw material

7.3.3 ARTEFACT TYPES

The artefacts identified included one crystal quartz retouched blade, a quartzite grindstone, a quartzite grinding top stone, a crystal quartz multi-platform core and a greywacke complete flake. Two tool types were identified among the 5 artefacts, these being the retouched blade and the grinding top stone (Figure 7.21).

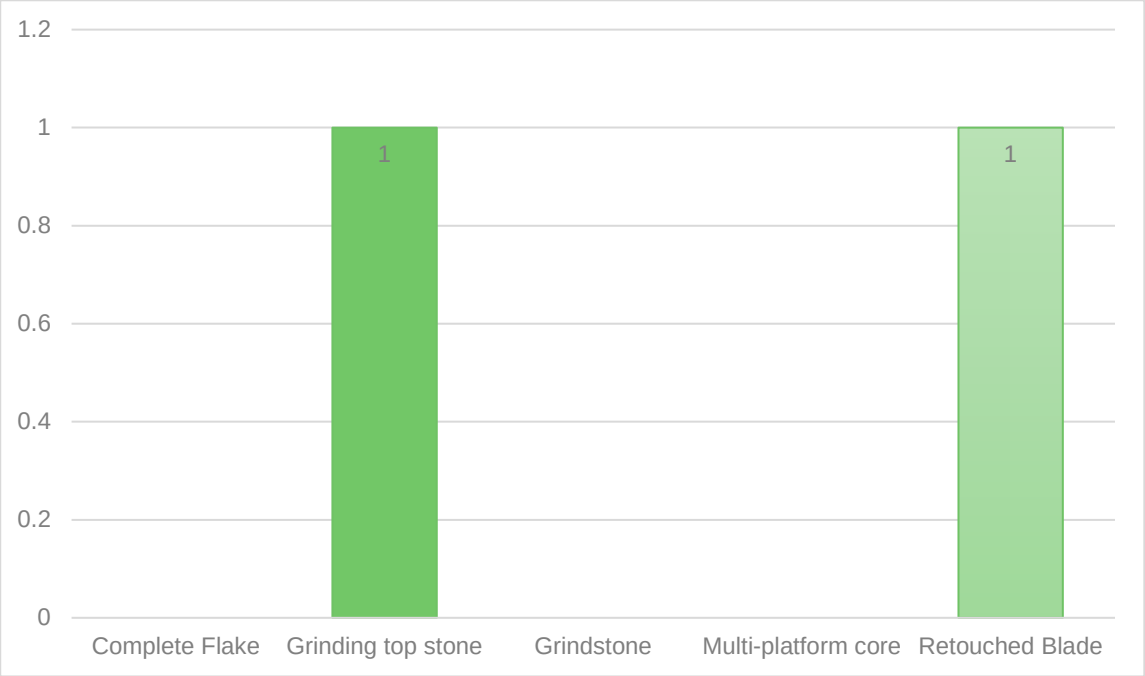

Figure 7.21 Sum of tools from artefact assemblage

The artefacts identified varied significantly in size due to artefact variety. The smallest artefact identified was the retouched blade measuring 30.47mm, and the largest being the grindstone at 1900mm. The total lengths of all artifacts identified are shown on Figure 7.22.

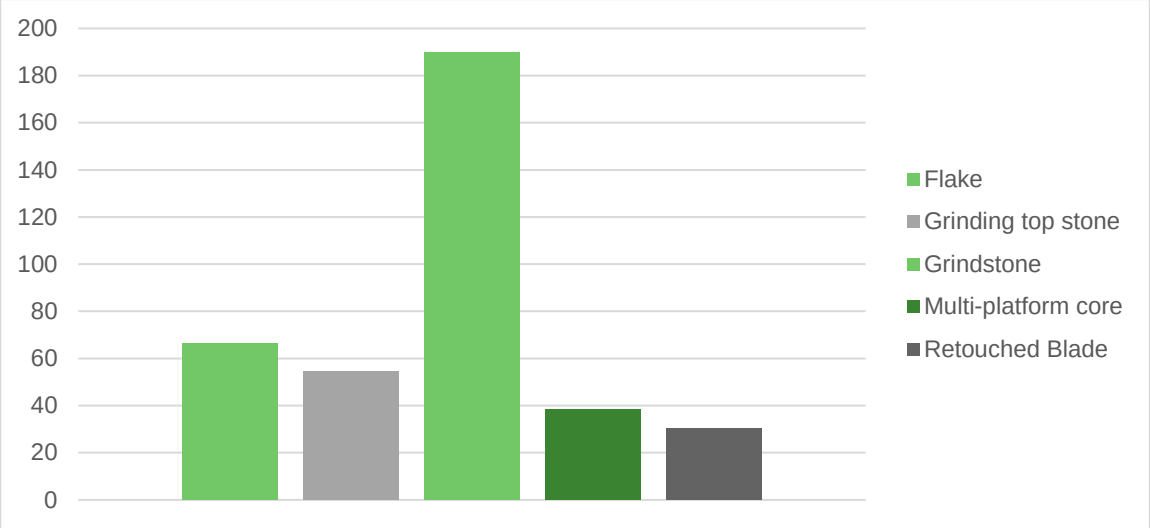

Figure 7.22 Length of identified artefacts

7.4 IDENTIFIED ABORIGINAL SITES

A total of 2 sites were identified as part of the archaeological testing program.

An archaeological survey of the study area was completed on 20 December 2022, and archaeological test excavations were completed between 13 March 2023 and 17 March 2023. The sites identified as part of this investigation are outlined in Table 7.8.

Table 7.8 Test areas and identified sites

AHIMS No.	Site name	Feature(s)	Testing area	Landform
44-3-0282	Evans Plains AS1	Low-density artefact scatter	Testing Area 1	Mid to lower slope
44-3-0283	Evans Plains IF1	Isolated find	Testing Area 2	Ridge

EVANS PLAINS AS1 (AHIMS 44-3-0282)

Site type	Artefact scatter
Centroid	GDA 94 Zone 55, 734314.15 m E and 6298041.22 m N
Site Extent	52 metres x 124 metres

Evans Plains AS1 (AHIMS 44-3-0282) is situated on a sloped landform on the northern side of the study area. The site consists of 4 artefacts, 3 of which appeared in spits 1 and 2 and one in spit 4. Evans Plains AS1 (AHIMS 44-3-0282) revealed one broken grindstone and one grinding top stone. It is unknown whether the 2 artefacts were used together, however it is evident that activities such as food preparation were being practised within the study area and its surrounds. The presence of one core and one flaked artefact suggest that knapping and the creation of stone tools was apparent in this location; however, it is probable that the artefacts that were identified within Evans Plains AS1 are not *in situ.*

Figure 7.23 and Figure 7.24 contain representative images indicating the landscape context and cultural material identified within Evans Plains AS1 (AHIMS 44-3-0282).

Figure 7.23 North facing view of Evans Plains AS1 (AHIMS 44-3-0282)

Figure 7.24 Selection of artefacts from Evans Plains AS1 (AHIMS 44-3-0282)

EVANS PLAINS IF1 (AHIMS 44-3-0283)

Site type	Isolated find
Centroid	GDA 94 Zone 55, 734352.00 m E and 6297954.00 m
Site Extent	2 metres x 2 metres

Evans Plains IF1 (AHIMS 44-3-0283) is situated in on a ridge landform within the middle of the study area. The site consists of 1 isolated artefact, which appeared in spit 2 of a 200mm test pit. Evans Plains IF1 (AHIMS 44-3-0283) revealed one broken crystal quartz blade. The blade has been retouched on both longitudinal margins. The presence of the blade within the study area suggests that creation of stone tools using local resources was apparent either within or in close proximity to the study area. Upon locating the blade, the 500mm x 500mm test pit was expanded into a 1-metre by 1-metre pit due to the rarity of the tool. Consequently, the expansion pit did not reveal additional artefacts.

Figure 7.25 and Figure 7.26 contain representative images indicating the landscape context and cultural material identified within Evans Plains IF1 (AHIMS 44-3-0283).

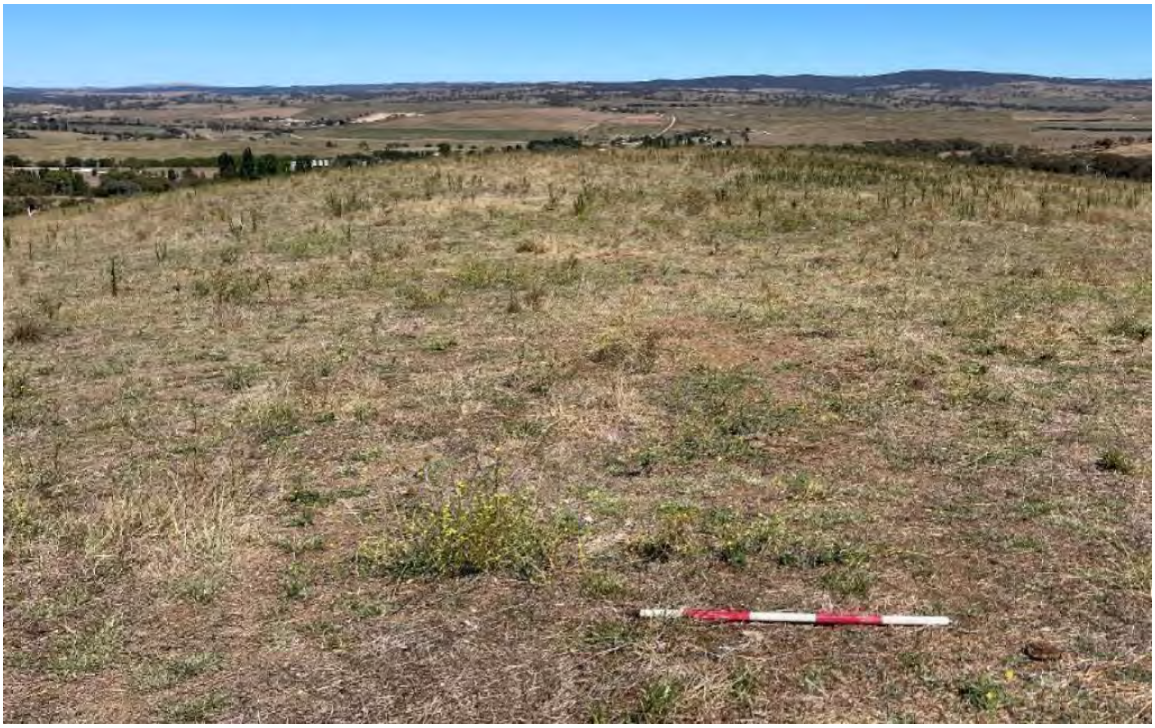

Figure 7.25 West-facing view of Evans Plains IF1 (AHIMS 44-3-0283)

Figure 7.26 Evans Plains IF1 (AHIMS 44-4-0283)

EVANS PLAINS IF2 (AHIMS 44-3-0327)

Site type	Isolated find
Centroid	GDA 94 Zone 55, 734297.00 m E and 6298140.00 m
Site Extent	2 metres x 2 metres

Evans Plains IF2 (AHIMS 44-3-0327) is situated on a slope landform in the additional Transgrid portion of the study area west of the existing substation. The site consists of 1 isolated artefact identified on the ground surface. The artefact is a proximal quartz flake noted as being produced during the tertiary phase of stone tool manufacture. The flake measured approximately 15 mm x 13 mm x 5 mm. Photos of the artefact and its location are shown on Figure 7.27 and Figure 7.28.

Figure 7.27 Location of AHIMS 44-3-0327

Figure 7.28 AHIMS 44-3-0327

7.4.1 LIMITATIONS

Due to the small size of the study area, the test excavations have provided limited data for the potential of archaeological material within the ridge and sloped landforms surrounding Bathurst.

8 ANALYSIS AND DISCUSSION

The following section presents an analysis and discussion of the results of the archaeological investigation, with an emphasis on the archaeological testing program.

8.1 SITE INTEGRITY AND EXTENT

The archaeological testing program identified 2 subsurface Aboriginal sites within the study area, and later survey identified an isolated surface find. In general, soil profiles were consistent, comprising a homogenous sandy silt (A1 Horizon) overlying a highly compact sandy clay basal layer (B Horizon). Notable exceptions to this consistency were Transect D, in which certain sample units contained a sandy clay transitional layer between the A1 and B Horizons (A2 Horizon), and testing pits excavated on the ridgeline crest to the centre of Transects B and B1 were significantly deeper. Sites were identified on two landforms, a ridge and slope.

An analysis of spit depths was undertaken to assess and confirm the stratigraphic integrity of the subsurface sites; most of the archaeological material from the study area was recovered from the upper 200 mm of the A1 Horizon (Table 8.1).

Note Evans Plains IF2 (AHIMS 44-3-0327) is not included in the analysis tables below, as it was identified in a secondary context and not in association with the subsurface artefacts. Additionally, this artefact was not collected for detailed analysis and would not meaningfully contribute to archaeological data for the area.

Table 8.1 Analysis of artefacts per site by spit

Site / AHIMS No.	Spit Number				Total
	1	2	3	4	
Evans Plains AS1 (AHIMS 44-3-0282)	1	2	-	1	4
Evans Plains IF1 (AHIMS 44-3-0283)	-	1	-	-	1

8.2 THE ARTEFACT ASSEMBLAGE

The variety of material types found within the assemblage shows a moderate level of diversity within the study area (Table 8.2). The overall density of the sites is very low, with a minimal amount of artefacts recovered from the entirety of the study area. This is outlined in Table 8.3 and Table 8.4 below.

Table 8.2 Analysis of raw material types per site

Site / AHIMS No.	Raw Materials			Total
	Crystal Quartz	Greywacke	Quartzite	
Evans Plains AS1 (AHIMS 44-3-0282)	1	1	2	4
Evans Plains IF1 (AHIMS 44-3-0283)	1	-	-	1

Table 8.3 Artefact density per site

Site / AHIMS No.	Total artefacts	Total area (m^2)	Highest No. artefacts per pit	Highest No. artefacts per m^2	Artefact density (per m^2)
Evans Plains AS1 (AHIMS 44-3-0282)	4	2.0	2	8	2.0
Evans Plains IF1 (AHIMS 44-3-0283)	1	5.75	1	1	0.2

Table 8.4 Analysis of artefact type by site

Artefact Type	Site		Total
	Evans Plains AS1 (AHIMS 44-3-0282)	Evans Plains IF1 (AHIMS 44-3-0283)	
Complete Flake	1	-	1
Grindstone	1	-	1
Grinding Top-stone	1	-	1
Multi-platform Core	1	-	1
Retouched Blade	-	1	1

8.3 ARCHAEOLOGICAL ANALYSIS

The archaeological test excavations identified very sparse evidence of Aboriginal occupation of the study area. In total, 60% (n=3) of recovered artefact materials are formed from sandstone, a sedimentary rock. Similarly, all of the identified materials were quartz-based or exhibit quartz grain inclusions. Furthermore, most of the study area has been subjected to large-scale erosion due to weathering and disturbance as a result of the long-term use of the site for grazing.

However, the rarity and cultural significance of the artefact materials identified during the test excavation suggest a heightened archaeological and cultural significance regardless of the history of disturbance. As such, the ridge landform is considered to be of moderate archaeological potential and significance. Comparatively, due to the alluvial and colluvial potential of the lower-mid slope contexts, rediscovered artefacts are unlikely to be *in situ*; therefore, the slopes of the study area are considered to be of low significance. However, this is excepting Transect C - due to the observed rarity and densities of artefacts in this sample, juxtaposed against the lowered stratigraphic integrity, this area is considered of moderate potential but low significance.

8.4 DISCUSSION

The archaeological investigations of the study area have identified concentrations of artefacts within ridge and hillslope contexts that are consistent with the predictive modelling within this report and from the local area more broadly. Test excavation data from the region is limited, which in turn limits any conclusions on the consistency of the site to the surrounding area. However, from the assemblage shown in Section 7.3, the occupation of the study area is likely to have been short-term or transient. Based on the results of the test excavation, the following statements can be made about the areas of archaeological sensitivity identified during the archaeological test excavations:

- The ridgeline landform can be considered to have heightened archaeological sensitivity.
- Slope landforms generally comprise the highest artefact densities.
- Quartz and quartz-based materials are the dominant raw material types.
- The area of potential has been reassessed and refined into two low-density, moderate significance sites in an area of high disturbance.

Evans Plains IF2 (AHIMS 44-3-0327), the isolated surface find in a secondary context, was identified as having little data to contribute to overall archaeological modelling in the area.

A reassessment of archaeological sensitivity is outlined in Figure 8.1.

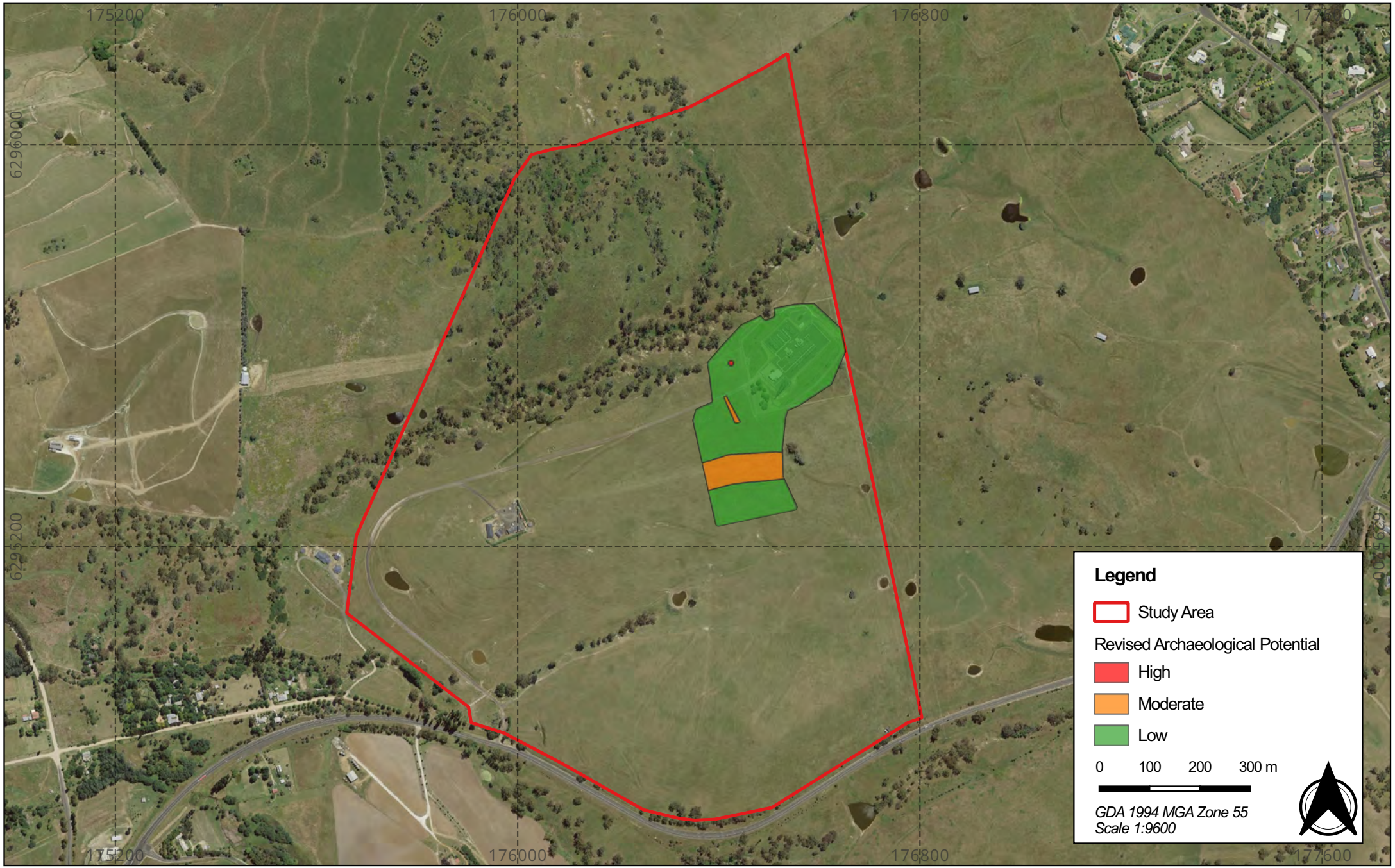

Figure 8.1 - Revised archaeological potential of the study area

22091 - BESS Bathurst SSD - ACHA & HHA

Source: NSW LPI Aerial

Drawn by: PB Date: 2026-01-07

AUSTRAL ARCHAEOLOGY

9 CULTURAL HERITAGE VALUES

An assessment of significance seeks to determine and establish the importance or value that a place, site or item may have to the community at large. The concept of cultural significance is intrinsically connected to the physical fabric of the item or place, its location, setting and relationship with other items in its surrounds. The assessment of cultural significance is ideally a holistic approach that draws upon the response these factors evoke from the community.

9.1 BASIS FOR THE ASSESSMENT

The significance values provided in the Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance* (the Burra Charter) are considered to be the best practice heritage management guidelines in Australia (Australia ICOMOS 2013a). The Burra Charter defines cultural significance as:

> *"…aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups." (Australia ICOMOS 2013a, p.2)*

The Burra Charter significance values outlined in Table 9.1; these are frequently adopted by cultural heritage managers and government agencies as a framework for a more holistic assessment of significance.

Table 9.1 Definitions of Burra Charter significance values (Australia ICOMOS 2013b)

Value	Definition
Aesthetic	Refers to the sensory and perceptual experience of a place. That is how a person responds to visual and non-visual aspects such as sounds, smells and other factors having a strong impact on human thoughts, feelings and attitudes. Aesthetic qualities may include the concept of beauty and formal aesthetic ideals. Expressions of aesthetics are culturally influenced.
Historic	Refers to all aspects of history. For example, the history of aesthetics, art and architecture, science, spirituality and society. It therefore often underlies other values. A place may have historic value because it has influenced, or has been influenced by, an historic event, phase, movement or activity, person or group of people. It may be the site of an important event. For any place the significance will be greater where the evidence of the association or event survives at the place, or where the setting is substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of such change or absence of evidence.
Scientific	Refers to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions.
Social	Refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them.

Value	Definition
Spiritual	Refers to the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations and be expressed through cultural practices and related places. The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm. The term spiritual value was recognised as a separate value in the Burra Charter, 1999. It is still included in the definition of social value in the Commonwealth and most state jurisdictions. Spiritual values may be interdependent on the social values and physical properties of a place.

In addition to the Burra Charter significance values, other criteria's and guidelines have been formulated by other government agencies and bodies in NSW to assess the significance of heritage places in NSW. Of particular relevance to this assessment are the guidelines prepared by the Australian Heritage Council and the Department of the Environment, Water, Heritage and the Arts (DEWHA), and Heritage NSW (Australian Heritage Council & DEWHA 2009, DECCW 2011, OEH 2011, NSW Heritage Office 2001).

The Guide (OEH 2011, p.10) states that the following criteria from the NSW Heritage Office (2001, p.9) should be considered:

- **Social value:** Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?
- **Historic value:** Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
- **Scientific value:** Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state?
- **Aesthetic value:** Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?

OEH (2011, p.10) states that when considering the Burra Charter criteria, a grading system must be employed. Austral will use the following grading system to assess the cultural values of the study area and its constituent features. These are outlined in Table 9.2.

Table 9.2 Gradings used to assess the cultural values of the study area

Grading	Definition
Exceptional	The study area is considered to have rare or outstanding significance values against this criterion. The significance values are likely to be relevant at a state or national level.
High	The study area is considered to possess considerable significant values against this criterion. The significance values are likely to be very important at a local or state level.
Moderate	The study area is considered to have significance values against this criterion; these are likely to have limited heritage value but may contribute to broader significance values at a local or State level.
Little	The study area is considered to have little or no significance values against this criterion.

9.2 ASSESSMENT OF SIGNIFICANCE

The following section addresses the Burra Charter significance values with reference to the overall study area.

9.2.1 AESTHETIC SIGNIFICANCE VALUES

Aesthetic values refer to the sensory, scenic, architectural and creative aspects of the place. These values may be related to the landscape and are often closely associated with social and cultural values.

The study area is located upon a ridgeline that runs west to east. This ridgeline provides oversight of the surrounding hills and overall landscape due to its high elevation, which would have been an ideal place for Aboriginal people to occupy. However, directly to the north and east of the study area lies large hillock landforms with higher elevations. Because of this, it is likely that the hillock landforms were a more ideal place for viewpoints of the surrounding landscape.

Additionally, as the study area has been extensively cleared of vegetation through historical land use and location of a power substation located adjacent to the study area, the study area does not provide any unique aesthetic values.

Based on this assessment, the study area is considered to have **moderate** aesthetic significance values.

9.2.2 HISTORIC SIGNIFICANCE VALUES

The assessment of historic values refers to associations with particular places associated with Aboriginal history. Historic values may not be limited to physical values but may relate to intangible elements that relate to memories, stories or experiences.

The study area has been historically used for farming and grazing and continues to be used for this purpose today. The 1964 historical aerial of the study area shows the land completely cleared of vegetation with evidence of ploughing. This is consistent throughout later historical aerials, with the only changes being the construction of the substation erosion control contour banks.

Based on this assessment, the study area is considered to have **no** historic significance values.

9.2.3 SCIENTIFIC SIGNIFICANCE VALUES

Scientific significance generally relates to the ability of archaeological objects or sites to answer research questions that are important to the understanding of the past life-ways of Aboriginal people. Australia ICOMOS (2013b, p.5) suggests that to appreciate scientific value, that the following question is asked: "*Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?*".

In addition to the above criteria, The Guide (OEH 2011, p.10) also suggests that consideration is given to the Australian Heritage Council and DEWHA (2009) criteria, which are particularly useful when considering scientific potential:

- **Research potential:** does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- **Representativeness:** how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- **Rarity:** is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- **Education potential:** does the subject area contain teaching sites or sites that might have teaching potential?

An assessment of the scientific significance of the Aboriginal sites located within the study area is outlined in Table 9.3.

Table 9.3 Scientific significance of Aboriginal sites in the study area

Site name	AHIMS No.	Assessment of significance	Grading
Evans Plains AS1	44-3-0282	Evans Plains AS1 (AHIMS 44-3-0282) is a low-density artefact scatter encompassing 4 different types: a core, a complete flake, a grindstone and a grinding top stone. However, due to their location at the bottom of a slope, it is probable that the artefacts are not *in situ* and therefore are not an accurate representation of how Aboriginal occupation occurred within the study area. However, due to the variety of artefacts identified within Evans Plains AS1, the site does provide information on what tools were being used and what was being produced.	Moderate
Evans Plains IF1	44-3-0283	Evans Plains IF1 (AHIMS 44-3-0283) identified one broken crystal quartz retouched blade. The blade is culturally significant due to the rarity of the tool type; however, the lack of additional blades or crystal quartz artefacts fails to provide information on whether Aboriginal people were performing innovative tool production within the study area.	High
Evans Plains IF2	44-3-0327	Evans Plains IF2 (AHIMS 44-3-0327) was identified as a proximal quartz flake found in isolation on a slope west of the existing substation. It was noted in a secondary context. As a common artefact and material type, this site has low scientific significance.	Low

9.2.4 SOCIAL AND SPIRITUAL SIGNIFICANCE VALUES

As social and spiritual significance are interdependent, Austral has undertaken a combined assessment of these values. The Consultation Requirements specify that the social or cultural values of a place can only be identified through consultation with Aboriginal people.

As part of the Stage 4 review of the ACHA, no submissions were received from RAPs during the completion of the project. Based on this assessment, the study area is considered to have **moderate** social and spiritual significance values.

9.3 STATEMENT OF SIGNIFICANCE

Statements of significance for identified Aboriginal sites within the study area are presented in Table 9.4. The statements of significance have been formulated using the Burra Charter significance values and relevant NSW guidelines (Department of Environment, Climate Change and Water NSW 2010b, OEH 2011, Australia ICOMOS 2013a).

Table 9.4 Statements of significance for Aboriginal sites in the study area

Site name	Statement of significance
Evans Plains AS1 (AHIMS 44-3-0282)	Evans Plains AS1 (AHIMS 44-3-282) is a subsurface low-density artefact scatter containing a grindstone, a multi-platform core, a complete flake and a grinding top stone. While the artefacts are likely not *in situ*, they do represent a variety of raw materials as well as varying tool types. It is likely that these artefacts were once used on top of the ridge within the study area and have migrated down the slope over time. Due to the surrounding landforms and the close proximity to the Mount Aspley stone arrangement (AHIMS 44-3-0043) ceremonial site, the cultural significance of Evans Plains AS1 is **high**.

Site name	Statement of significance
Evans Plains IF1 (AHIMS 44-3-0283)	Evans Plains IF1 (AHIMS 44-3-283) is an isolated find containing a crystal quartz retouched blade. While the blade was isolated, it represents evidence of technical manufacturing of stone tools being conducted either within the study area or adjacent. The blade contains scalar retouching on both longitudinal margins, which is evidence of past Aboriginal people occupying the study area and producing stone tools for active use. The location of Evans Plains IF1 within the ridgeline suggests that blade manufacturing may have been undertaken within this area; however, remnant evidence most likely has been displaced due to weathering. The cultural significance of Evans Plains IF1 is **high**.
Evans Plains IF2 (AHIMS 44-3-0327)	Evans Plains IF2 (AHIMS 44-3-0327) is an isolated proximal quartz flake identified in a secondary context west of the existing substation. This is a common artefact type and common material type for the area. The cultural significance of Evans Plains IF2 is **low**.

Heritage NSW specifies the importance of considering cultural landscapes when determining and assessing Aboriginal cultural values. The principle behind this is that '*For Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner"* (DECCW 2010).

The study area is situated within areas of low and moderate archaeological potential. While the aesthetic and historic significance of the site is considered low, the archaeological significance of the study area is moderate. However, the southern side of the study area revealed no artefactual deposits, likely due to its location on a moderate slope, and is believed to contain no archaeological material.

10 IMPACT ASSESSMENT

This section outlines, according to Heritage NSW guidelines, the potential harm that the proposed activity may have on identified Aboriginal objects and places within the study area (Department of Environment, Climate Change and Water NSW 2010b, OEH 2011).

10.1 LAND USE HISTORY

The study area has been previously cleared of vegetation, most likely during the period of early European settlement when logging and clearance for agricultural activities was undertaken. Past and present agricultural practices such as farming and grazing would have likely disturbed the subsurface archaeological material through ploughing, overturning the soil and livestock dispersing the ground. The study area is now covered in dense native and introduced grasses with invasive natural and introduced weeds dominating the landscape. Land clearance would have resulted in soil disturbance and topsoil movement and loss that, coupled with erosion across the majority of the study area, may account for widespread artefact displacement but not complete destruction of Aboriginal sites. The summary of past land use practices and potential impacts are outlined in Table 10.1.

Table 11.1 Summary of past land use within the study area and the potential impacts on archaeological resources

Past land uses	Potential impacts on archaeological resources
Land Clearance	Land clearance would have resulted in soil disturbance and topsoil movement and loss that, coupled with erosion on slopes across the majority of the study area, might account for widespread artefact displacement but not complete destruction of Aboriginal sites.
Farming and Grazing	Livestock inhabiting the study area would have likely resulted in the disbursement of surface artefacts.

10.2 PROPOSED ACTIVITY

The project involves the development, construction, operation and eventual decommissioning of a BESS. The BESS will consist of SolBank Bess containers (or enclosures) in a "back-to-back" formation in two north-south aligned rows. The project will involve ground-breaking works to install a 132kV underground cable connecting a 132kV switch building to the substation, stormwater management infrastructure, lighting, and security fencing as well as the upgrade of existing road access to accommodate heavy vehicles. See the full project description and amendments listed in the Executive Summary and Section 1.2 of this report.

10.3 ASSESSING HARM

This section outlines the assessment process for addressing potential harm to Aboriginal objects and/or places within the study area, as outlined by Heritage NSW (OEH 2011, p.12).

10.3.1 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

An objective of the NPW Act, under Section 2A(1)(b)(i) is to conserve "*places, objects and features of significance to Aboriginal people*" through applying the principles of ecologically sustainable development (ESD) (Section 2A(2)). ESD is defined in Section 6(2) of the *Protection of the Environment Administration Act 1991* (NSW) as "…*the effective integration of social, economic and environmental considerations in decision-making processes".* ESD can be achieved with regards to Aboriginal cultural heritage, by applying principle of inter-generational equity, and the precautionary principle to the nature of the proposed activity, with the aim of achieving beneficial outcomes for both the development, and Aboriginal cultural heritage.

INTERGENERATIONAL EQUITY

The principle of intergenerational equity is where the present generation ensure the health, diversity and productivity of the environment for the benefit of future generations. The Department of Environment and Climate Change (DECC), now Heritage NSW, states that in terms of Aboriginal cultural heritage "*intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous AHIPs), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places*." (DECC 2009, p.26).

The assessment of intergenerational equity and understanding of cumulative impacts should consider information about the integrity, rarity or representativeness of the Aboriginal objects and/or places that may be harmed and how they illustrate the occupation and use of the land by Aboriginal people across the locality (DECC 2009, p.26).

Where there is uncertainty over whether the principle of intergenerational equity can be followed, the precautionary principle should be applied.

PRECAUTIONARY PRINCIPLE

Heritage NSW defines the Precautionary Principle as "*if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation*" (DECC 2009, p.26).

The application of the precautionary principle should be guided through:

- A careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment.
- An assessment of the risk—weighted consequences of various options.

DECC (2009, p.26) states that the precautionary principle is relevant to the consideration of potential impacts to Aboriginal cultural heritage, where:

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

Where either of the above is likely, a precautionary approach should be taken and all effective measures implemented to prevent or reduce harm to Aboriginal cultural heritage values.

10.3.2 TYPES OF HARM

When considering the nature of harm to Aboriginal objects and/or places, it is necessary to quantify direct and indirect harm. The types of harm, as defined in the Guide (OEH 2011, p.12), and are summarised in Table 10.2. These definitions will be used to quantify the nature of harm to identified Aboriginal objects and/or places that have been identified as part of this assessment. The Code states that the degree of harm can be either total or partial (Department of Environment, Climate Change and Water NSW 2010c, p.21).

Table 11.2 Definition of types of harm

Type of harm	Definition
Direct harm	May occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavating detention ponds and other drainage or flood mitigation measures and changes in water flows affecting the value of a cultural site.
Indirect harm	May affect sites or features located immediately beyond, or within, the area of the proposed activity. Examples of indirect impacts include, but are not limited to, increased impact on art in a shelter site from increased visitation, destruction from increased erosion and changes in access to wild food resources.

10.4 IMPACT ASSESSMENT

This ACHA has included a programme of investigations that have characterised the nature, extent and significance of Aboriginal sites within the study area.

10.4.1 ARCHAEOLOGICAL SITES

The proposed BESS will directly impact 2 sites identified within the study area. Evans Plains AS1 (AHIMS 44-3-0282) will be directly impacted by the construction of the proposed access road and the BESS, and Evans Plains IF1 (AHIMS 44-3-0283) will be directly impacted by the construction of the BESS. Artefacts from these sites have been removed from their original locations and reburied on site. No impacts are anticipated to occur to Evans Plains IF2 (AHIMS 44-3-0327).

An evaluation of harm to the Aboriginal sites identified as part of the ACHA is summarised in Table 10.3. Details of the proposed activity and their relationship to identified Aboriginal sites is outlined in Figure 10.1.

Table 11.3 Assessment of harm to identified Aboriginal sites

Site name / AHIMS No.	Type of harm	Degree of harm	Consequence of harm
Evans Plains AS1 (AHIMS 44-3-0282)	Direct	Total	Total loss of value
Evans Plains IF1 (AHIMS 44-3-0283)	Direct	Total	Total loss of value
Evans Plains IF2 (AHIMS 44-3-0327)	None	None	No loss of value

10.4.2 MOUNT PANORAMA/WAHLUU (AHIMS 44-3-0280)

While the site boundary for Wahluu has been established based on oral tradition and topography of the region, the works for the proposed Panorama BESS project are not anticipated to impact the boundaries of the Wahluu site, alter the landscape significantly, nor impact the importance of the oral history of the Fallen Warrior. Additionally, the completed BESS works are not anticipated to have a visual impact on Wahluu nor the aesthetic values of the Wahluu site.

10.4.3 2025 FOOTPRINT MODIFICATION

During refinement of the project design in early 2025, the proposed Panorama BESS footprint was modified to include an updated battery energy storage system and additional civil battering to increase site safety and landform stability. These changes have resulted in an additional 1.5 hectares being added to the footprint, which has also been rotated slightly to reduce civil costs.

These changes were assessed against archaeological and context information gathered from previous work at the site. The 2022 site inspection provided coverage of much of the larger area, and archaeological potential based on landform analysis and the testing program remains as assessed prior to the footprint additions. As such, Austral is satisfied that no further fieldwork or assessment of the revised footprint is necessary at this time. The original and new footprints are shown in relation to the existing power infrastructure for reference below.

For the BESS to be connected to the substation, Transgrid identified that the existing substation would need to be expanded by an additional switching bay (adjacent north of the current infrastructure). This additional footprint (whole of the Transgrid substation Lot as well as area westerly adjacent) was assessed by Austral in October 2025 and is included within this ACHA.

Figure 11.1 2022 study area vs. 2025 footprint modification.

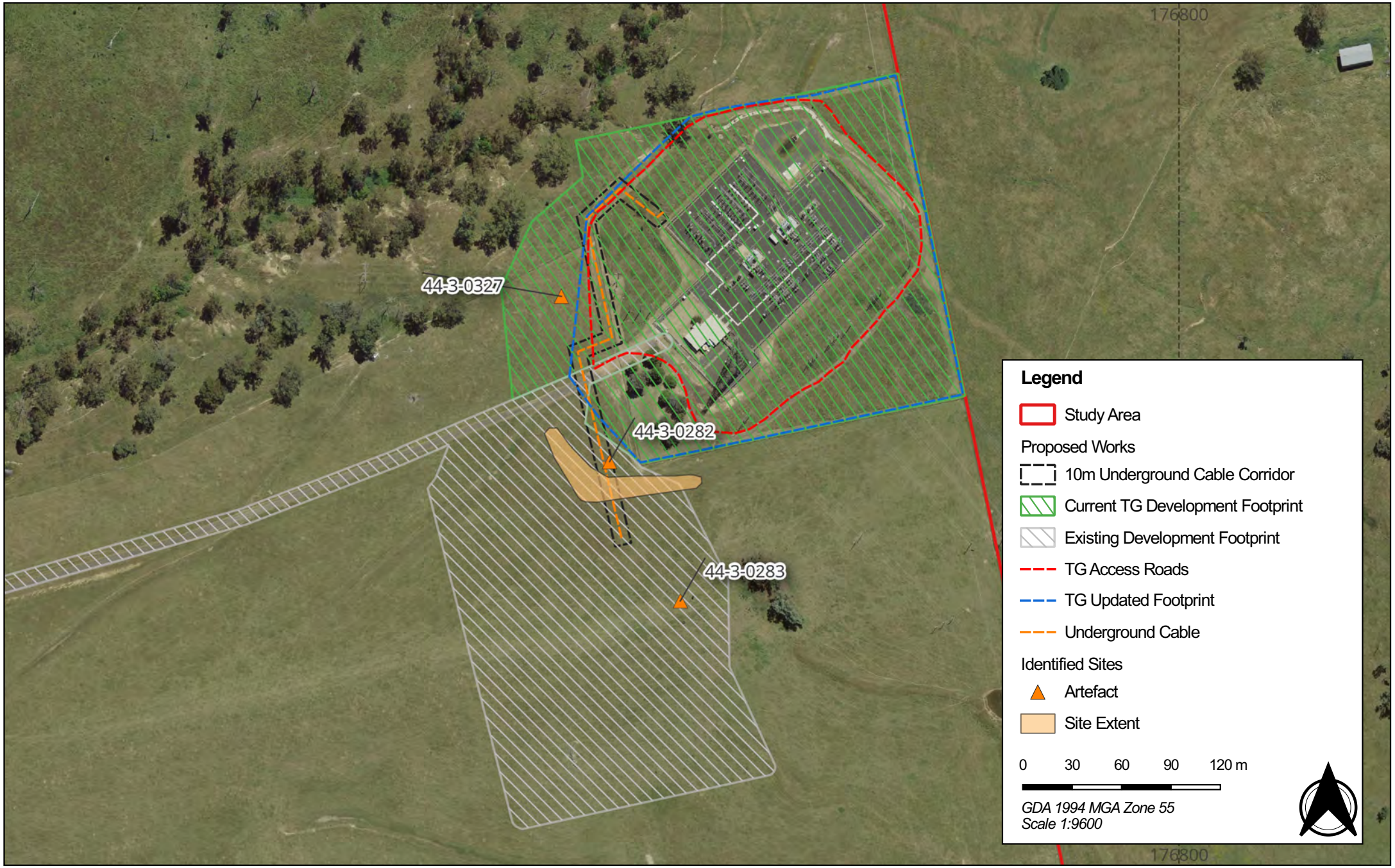

Figure 11.2 - Details of the proposed activity in relation to identified Aboriginal sites

22091 - BESS Bathurst SSD - ACHA & HHA

Source: NSW LPI Aerial

Drawn by: PB Date: 2026-01-12

AUSTRAL ARCHAEOLOGY

11 AVOIDING AND MINIMISING HARM

The Burra Charter, advocates a cautious approach to change: "*do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained*" (Australia ICOMOS 2013a, p.1). Based on this principle, this section identifies the measures that have been taken to avoid harm and what conservation outcomes have been achieved through the preparation of this ACHA.

11.1 DEVELOPMENT OF PRACTICAL MEASURES TO AVOID HARM

By undertaking an archaeological testing program, Austral has been able to identify the potential of Aboriginal heritage present within the study area and determine the extent of the heritage. Additionally, as the impact footprint of the development is relatively small in comparison to the scale of the property, the development will have minimal impact on the overall area.

11.2 APPLICATION OF PRINCIPLES OF ESD AND CUMULATIVE IMPACTS

The Guide to Reporting requires this ACHA to consider the effects of cumulative impacts under the principles of ESD. In essence, this requires the acknowledgement that while a single development might have a minimal impact, it forms part of a slow urbanisation process which results in the widespread loss of environmental and cultural resources.

The sites located within the study area that will be impacted by the proposed development are representative of a common site type (i.e., Artefacts sites including low density artefact scatters and isolated artefacts) in association with a range of landform types that are well represented across the region. The positioning of the sites identified in this assessment coupled with the low density of the artefacts means that the overall scientific/archaeological and educational value is being assessed as low. However, all Aboriginal sites are of cultural significance to the Aboriginal community.

Bathurst is a region that is subject to progressive renewable energy construction, as well as small scale residential developments, which places pressure on the archaeological resources within the region. To qualify whether the proposed impacts from the project will have a broader impact on the cultural resources of the region, Austral undertaken an analysis of AHIMS sites in relation to their current or future zoned use. The purpose behind this analysis is to determine the volume of AHIMS development. This assumes that sites that are located within land zoned for residential (R1 - R5), business (B1 – B5) and industrial (IN1 – IN4) purposes are more likely to have been harmed or may be under thread of harm. Conversely, sites that are zoned for environmental (E1 – E5), recreational (RE1 – RE2) and rural (RU1 – RU6) purposes are more likely to be subject to conservation. An outline of the AHIMS sites in relation to land zoning is shown in Table 11.1.

This analysis indicates that the majority of AHIMS sites (n=41, 43.61%) are located within zonings that are likely to facilitate conservation outcomes and minimal threat to the conservation of sites, while 56.38% (n=53) of sites are likely to be subject to harm through progressive urbanisation and other developments. The greatest threat to Aboriginal sites in this area is Primary Production developments, with 42.54% (n=40) of sites located within a Primary Production land zone.

Table 11.1 Analysis of AHIMS sites in relation to land zoning

Land zones	Number of sites	% of sites
Unknown (restricted site)	2	2.06
Commercial Centre	1	1.03
Recreational Waterways	2	2.06
Environmental Conservation	3	3.09
Primary Production Small Lots	3	3.09
General Residential	4	4.12
Public Recreation	7	7.22
Infrastructure	4	4.12
Large Lot Residential	7	7.22
Tourist	15	15.46
Primary Production	49	50.30
Total	**97**	**100**

A review of the frequency of one or more AHIP's listed against AHIMS sites indicates some slightly differing trends. Despite the high frequency of registered sites within areas unlikely to facilitate conservation, only one AHIP has been listed against a site within the 7.5km search radius of the study area. This highlights that more sites are being avoided rather than destroyed in the Bathurst general area (Table 11.2).

Table 11.2 Analysis of AHIMS sites with AHIP's issued

Site types	No. Sites	No. sites with AHIPs	% Sites with AHIPS
Burial	1	0	0
Conflict	1	0	0
Potential Archaeological Deposit (PAD)	1	0	0
Artefact and grinding grooves	1	0	0
Aboriginal resource and gathering, and water hole	1	0	0
Aboriginal ceremony and dreaming, and stone arrangement	1	0	0
Aboriginal ceremony and dreaming, and PAD	**1**	0	0
Aboriginal ceremony and dreaming, and earth mound	1	0	0
Aboriginal ceremony and dreaming, ceremonial ring, and modified tree (carved or scarred)	1	0	0
Aboriginal ceremony and dreaming, ceremonial ring, PAD, and stone arrangement	1	0	0
Aboriginal resource and gathering, and ceremony and dreaming	1	0	0
Aboriginal resource and gathering, ceremony and dreaming, conflict, and fish trap	1	0	0

Site types	No. Sites	No. sites with AHIPs	% Sites with AHIPS
Aboriginal resource and gathering, ceremony and dreaming, stone arrangement	1	0	0
Ceremonial ring	1	0	0
Stone quarry, artefact scatter, and stone arrangement	1	0	0
Aboriginal ceremony and dreaming, burial, ceremonial ring, and modified tree (carved or scarred)		0	0
Aboriginal resource and gathering	2	0	0
Aboriginal ceremony and dreaming, ceremonial ring, and stone arrangement	2	0	0
Artefact and PAD	2	0	0
Restricted	2	0	0
Aboriginal ceremony and dreaming	5	0	0
Stone arrangement	7	0	0
Modified trees (carved or scarred)	10	0	0
Stone artefacts	51	1	0
Total	**97**	**1**	**0.97%**

This analysis does indicate that 1.06% of overall sites and 1.81% of artefact sites have had AHIPs issued against them, indicating that these sites have been subject to limited cumulative impacts from successive approvals. This analysis does appear to indicate that locally, a higher proportion of AHIMS sites, are being conserved rather than destroyed.

11.3 STRATEGIES TO MINIMISE HARM

By undertaking this ACHA and completing archaeological test excavations, Austral has been able to confirm that the presence of tangible Aboriginal heritage within the study area is low. Throughout the duration of the assessment, no information regarding intangible heritage within the study the study area was discussed, and no further comments were received from registered stakeholders as part of the Stage 4 consultation process.

It has been concluded the proposed development will have a low cumulative impact on cultural material due to low artefact densities identified within the site. To further minimise harm on known and unknown sites within the study area, Austral will be recommending an unexpected finds protocol that must be implemented if any Aboriginal heritage is encountered during the course of the works.

Of note, Recurrent has confirmed that Evans Plains IF2 (AHIMS 44-3-0327) will be avoided during the works, and the site location, plus a 2-metre buffer, will be fenced offand noted as a no-go zone during the works.

12 RECOMMENDATIONS

The following recommendations are derived from the findings described in this ACHA. The recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, and the findings of the test excavation and the predicted impact of the planning proposal on archaeological resources.

It is recommended that:

1. No further assessment is required to be undertaken for the study area. A 2-metre buffer around the location of Evans Plains IF2 (AHIMS 44-3-0327) should be fenced with construction fencing during the works to avoid impacts and marked as a no-go zone on construction plans. If, during the project, unexpected finds or human remains are identified, please follow recommendation 2.
2. In the event that unexpected finds occur during any activity within the study area, all works must in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed:
    a. If, while undertaking the activity, an Aboriginal object is identified, it is a legal requirement under Section 89A of the NPW Act to notify Heritage NSW as soon as possible.
    b. If human skeletal remains are encountered, all work must cease immediately, NSW Police must be contacted, and they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, Aboriginal stakeholders and Heritage NSW must be notified.
3. It is recommended that Panorama BESS SubCo Pty Ltd (Panorama) continues to inform Aboriginal stakeholders about management of Aboriginal cultural heritage within the study area throughout the duration of the project. The consultation outlined as part of this ACHA is valid for 6 months and must be maintained by the proponent for it to remain continuous, this can be done through a project update sent to Registered Aboriginal Parties. If a gap of more than 6 months occurs, then the consultation process will need to be re-started.
4. A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project.

Further recommendations taken from the Heritage NSW draft conditions are included below:

5. All reasonable steps must be taken to avoid harm, modification of, or impact to Aboriginal objects except as authorised by issued Heritage NSW approval.
6. The Registered Aboriginal Parties must be kept informed about the SSD. The Registered Aboriginal Parties must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the SSD.

A procedure for the management of unexpected Aboriginal objects and human remains must be developed in consultation with the Registered Aboriginal Parties and Heritage NSW. The procedure must be prepared in accordance with Heritage NSW guidelines and codes of practice and must be implemented for the duration of the project.

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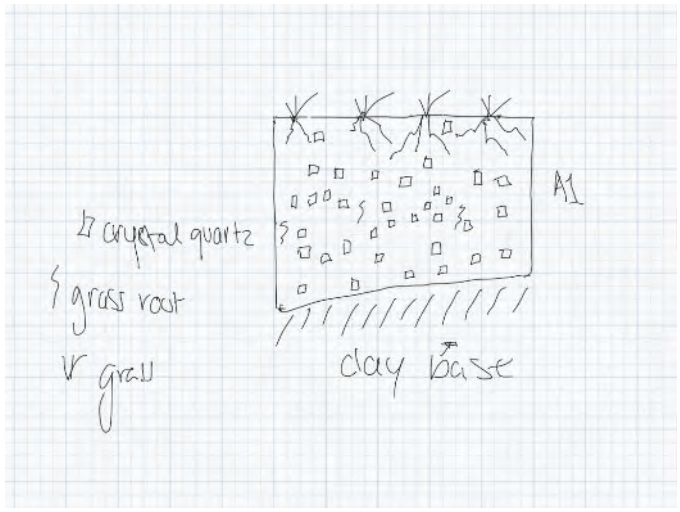
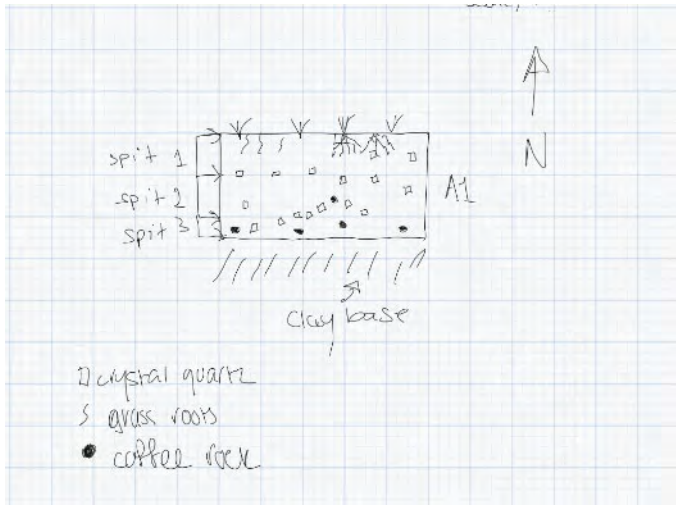
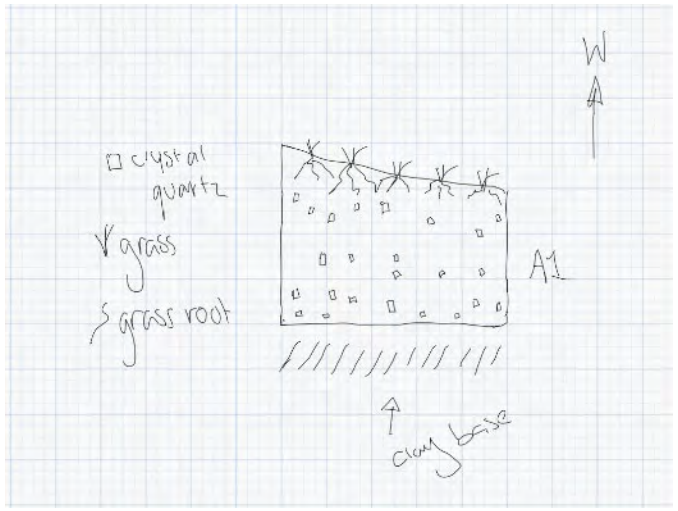
APPENDICES

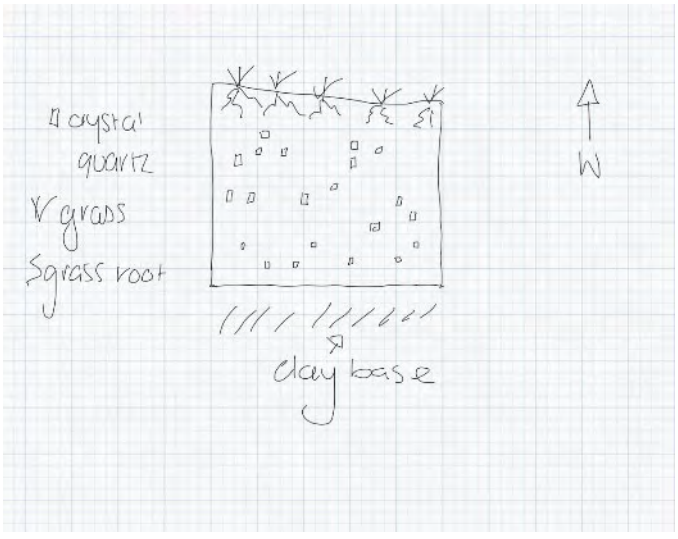
APPENDIX A – NOTIFICATION OF TESTING TO HERITAGE NSW

APPENDIX B – FIELDWORK PHOTOGRAPHS AND PAPERWORK

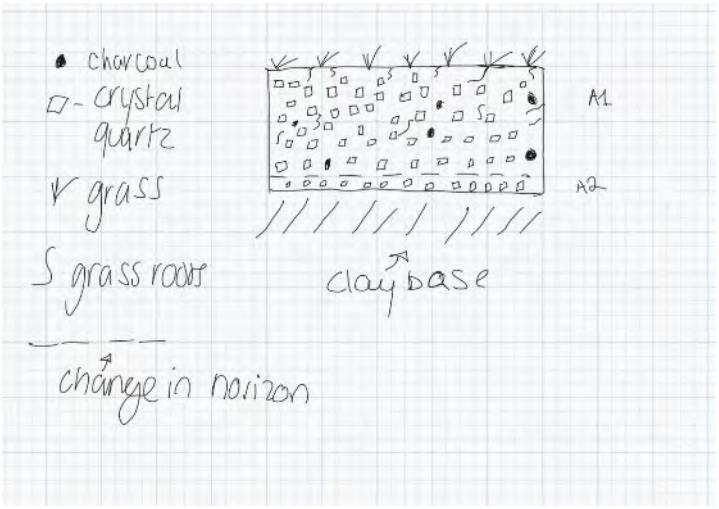
TRANSECT A

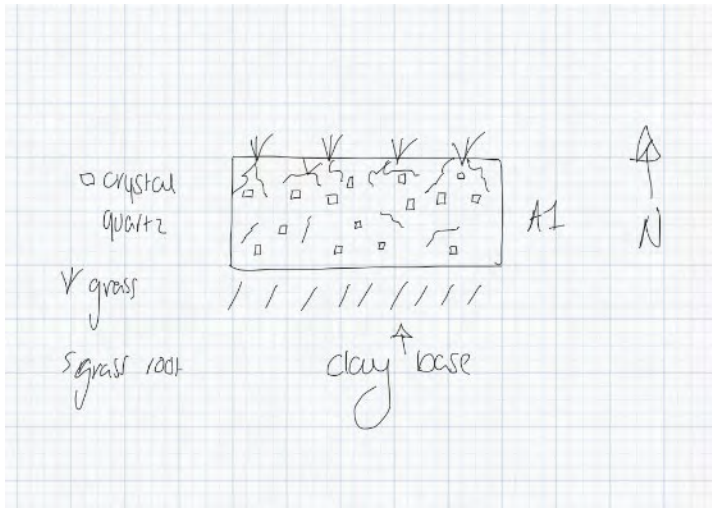
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT A, TEST PIT 1. *Unit Dimensions in mm 500x500x380* **Landform:** Mid-slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Very compacted hard sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 horizon 0-380mm. North side at 300mm due to slope. A very diffuse transition into clay base.		

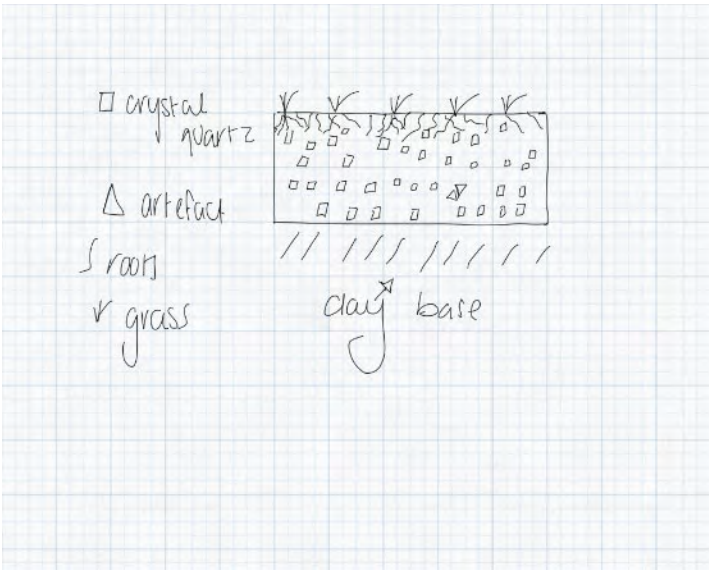
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT A, TEST PIT 2. *Unit Dimensions in mm 500x500x250* **Landform:** Mid slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Sandy silt. 30% sand, 70% silt. **Inclusions:** Sub - angular + sub-rounded crystal quartz inclusions <10%. Increasing towards base <15%. Grass mat with grassroot inclusions in spit 1 <2%. Evidence of 'coffee rock' at bottom of pit. **Comments:** A1 horizon 0-250mm		
TRANSECT A, TEST PIT 3. *Unit Dimensions in mm 500x500x400* **Landform:** Slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 horizon 0-300mm in north side and 0-400mm on the southside.		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT A, TEST PIT 5. *Unit Dimensions in mm 500x500x440* **Landform:** Slope **Colour:** Light grey/brown 10YR 5/3 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 horizon 0-440mm on the south side and 0-400mm on the northern side.		

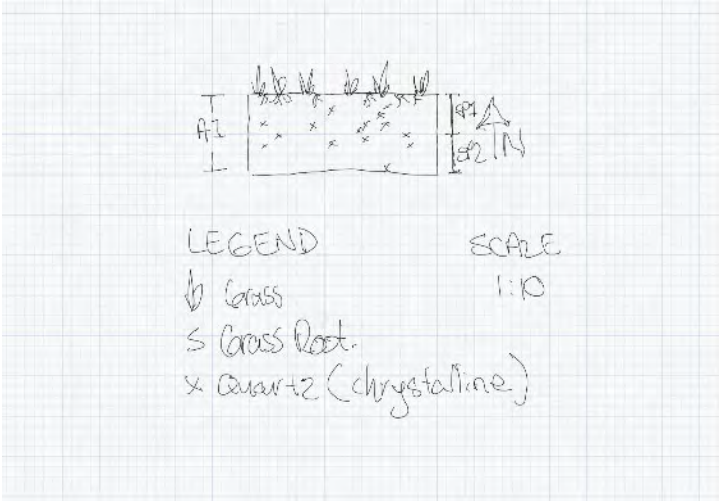
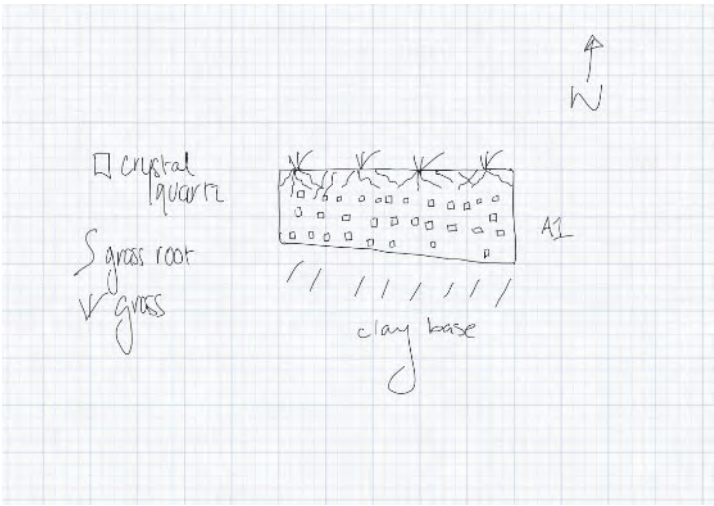
TRANSECT B AND B1

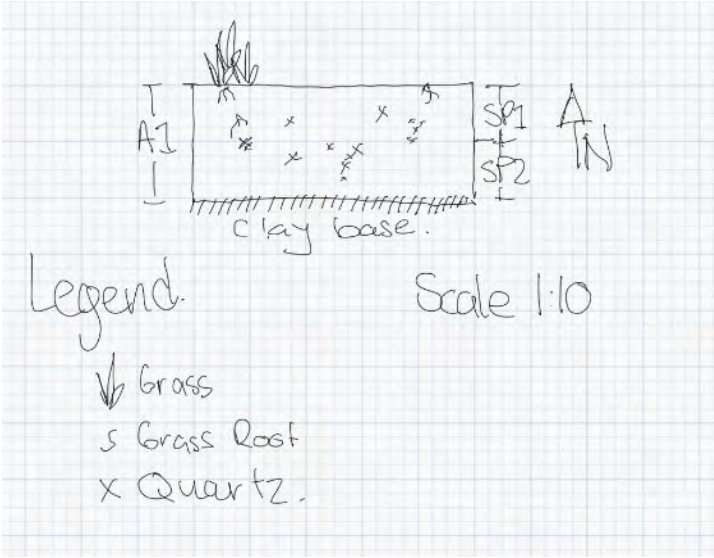
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 1. *Unit Dimensions in mm 500x500x230* **Landform:** Gentle slope on a crest **Colour:** • **A1:** Mid-brown 10YR 4/4 • **A2:** Darker mid-brown 7.5YR 4/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt, 30% sand, 70% silt. **Inclusions:** Small gravelly crystal quartz inclusions < 15%. Small charcoal inclusions <1%. Grassy mat with grassroot inclusions <2% **Comments:** • **A1** Horizon 0-130mm • **A2** Horizon 130-230mm		

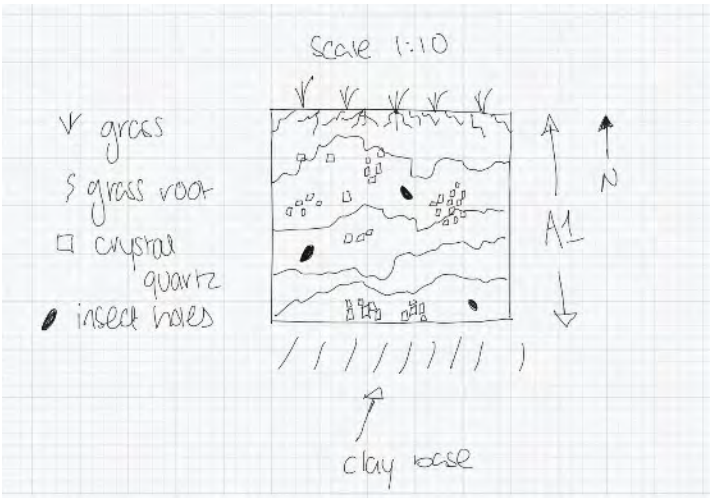
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B1, TEST PIT 1. *Unit Dimensions in mm 500x500x200* **Landform:** Slope **Colour:** Mid-brown 10YR 5/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt 30% sand and 70% silt. **Inclusions:** Large quantity of gravelly crystal quartz <10%. Grass mat with grass root inclusions <2%. **Comments:** A1 horizon 0-200mm. Very hard, dry gravelly soil.		

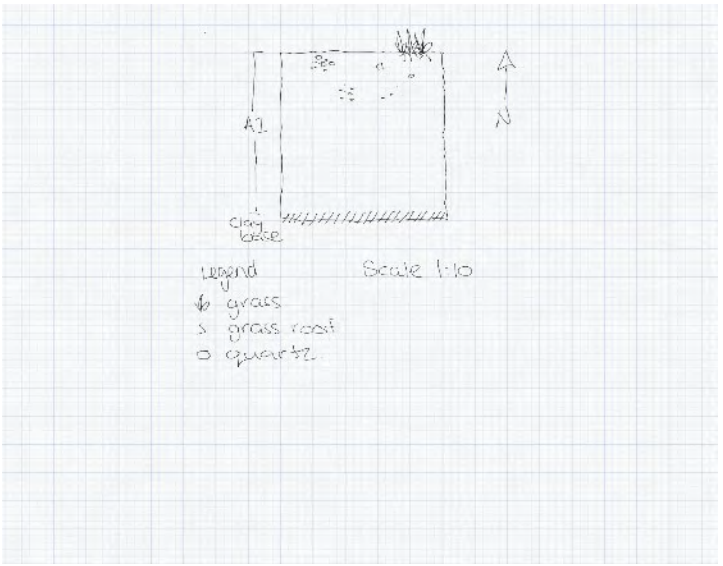
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 2. *Unit Dimensions in mm 500x500x200* **Landform:** Crest **Colour:** Mid grey-brown 10YR 5/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt **Inclusions:** Small gravelly crystal quartz inclusions < 15%. Small charcoal inclusions <1%. Grassy mat with grassroot inclusions <2%. Crystal quartz conjoin artefact identified in spit two. Likely a retouched blade. **Comments:** A1 horizon 0-200mm.		

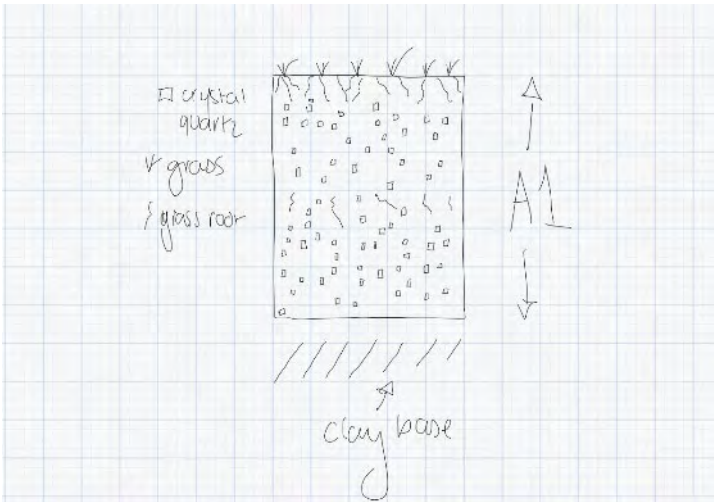
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 2. 1MX1M *Unit Dimensions in mm 1000x1000x230* **Landform:** Very gentle slope adjacent to a Crest **Colour:** Mid grey-brown 10YR 5/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt **Inclusions:** Small gravelly crystal quartz inclusions < 15%. Small charcoal inclusions <1%. Grassy mat with grassroot inclusions <2%. Crystal quartz conjoin artefact identified in spit two. Likely a retouched blade. **Comments:** A1 horizon 0-230mm on the south side and 0-20 on the north side.		

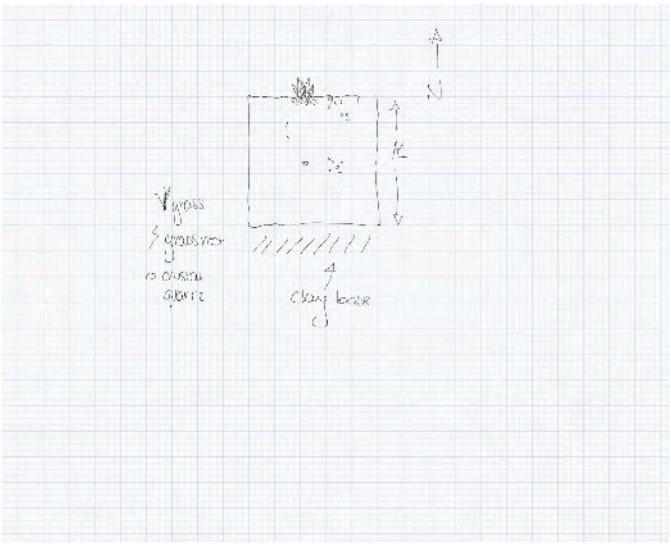
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B1, TEST PIT 2. *Unit Dimensions in mm 500x500x200* **Landform:** Gentle slope **Colour:** Mid brown 10YR 5/4 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt, 30% sand, 70% silt. **Inclusions:** Gravelly crystal quartz inclusions < 10%. Grassy mat with grassroot inclusions <2% **Comments:** A1 from 0-200		
TRANSECT B, TEST PIT 3. *Unit Dimensions in mm 500x500x200* **Landform:** Saddle **Colour:** Mid brown 10YR 4/4 **PH:** 5.5 **Compaction:** Loose friable compaction. **Composition / Particle size:** Fine grained sandy silt, 30% sand, 70% silt. **Inclusions:** Small gravelly crystal quartz inclusions < 15%. Small charcoal inclusions <1%. Grassy mat with grassroot inclusions <2% **Comments:** Test pit is 200mm deep on the northside and		

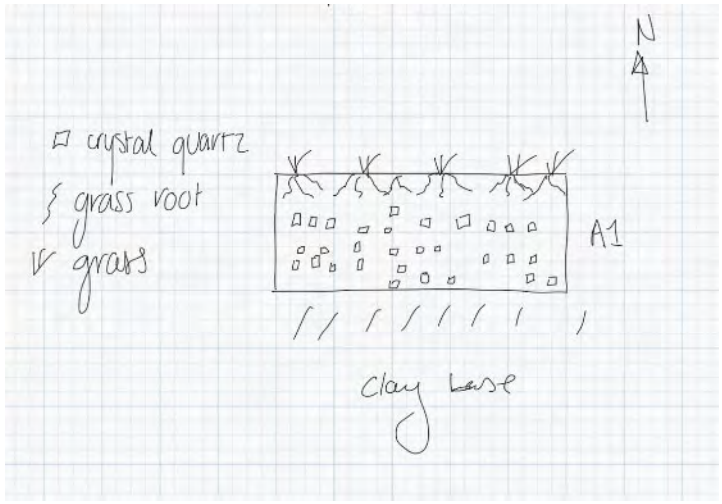
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
150mm deep on the south side. A1 horizon into base.		
TRANSECT B1, TEST PIT 3. *Unit Dimensions in mm 500x500x200* **Landform:** Gentle slope **Colour:** Mid brown 10YR 4/4 **PH:** 6 **Compaction:** Highly compacted loose/friable peds. **Composition / Particle size:** Sub-rounded fine-grained sandy silt, 30% sand and 70% silt. **Inclusions:** Gravelly sub-rounded quartz (10%). Grass mat with associated grass root inclusions towards top of A1 horizon (2%). **Comments:** A1 0-200mm. Diffuse transition into B1 base clay layer. Approx. 50mm transition.		

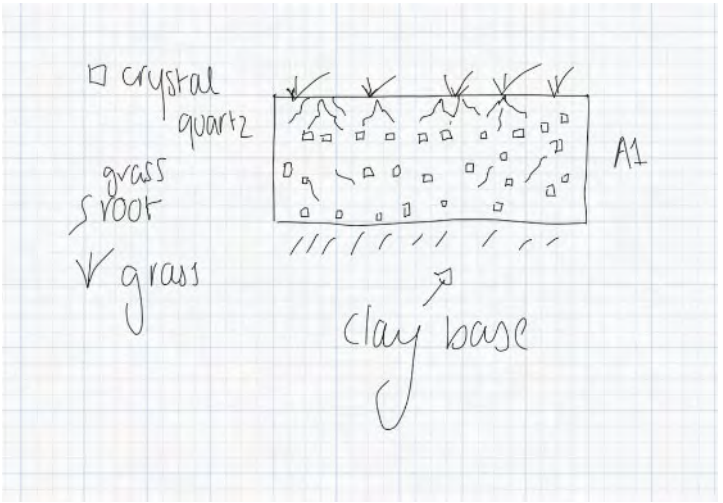
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 4. *Unit Dimensions in mm 500x500x430* **Landform:** Saddle **Colour:** Light brown 10YR 6/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Gravelly sub-rounded quartz in top 200mm (10%). Grassroot inclusions in top 30mm due to removed grass topsoil (2%). Minor rock inclusions to base (2%). **Comments:** A1 horizon extends 0-430mm		

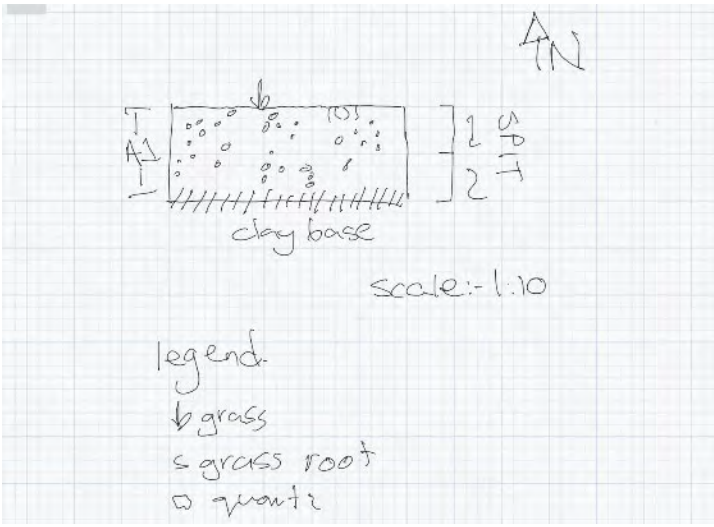
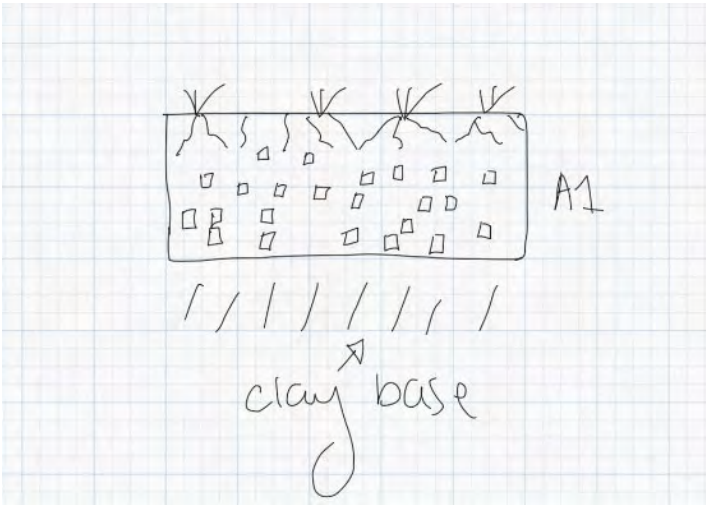
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B1, TEST PIT 4. *Unit Dimensions in mm 500x500x600* **Landform:** Gentle slope **Colour:** 10YR 5/2 **PH:** 6 **Compaction:** Highly compacted loose/friable peds **Composition / Particle size:** Sub-rounded sandy silt, fine grained. **Inclusions:** Gravelly sub-rounded quartz in top 200mm (10%). Grassroot inclusions in top 30mm due to removed grass topsoil (2%). Minor rock inclusions to base (2%). **Comments:** A1 horizon extends to base 0-600mm. Diffuse transition into B1 base clay layer. Transition Spans approx. 50mm.		

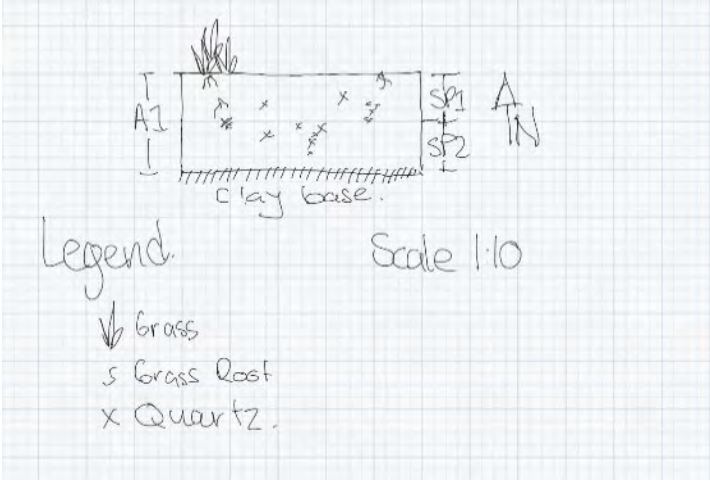
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 5. *Unit Dimensions in mm 500x500x630* **Landform:** Saddle **Colour:** Mid to light brown 10YR 6/3 **PH:** 6.5 **Compaction:** Loose/friable. **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz rocks <20%. grass mat with grassroot inclusions <2%, mostly at top of pit but small root inclusions approx. 300 mm down <1%. **Comments:** A1 horizon from 0-630mm		

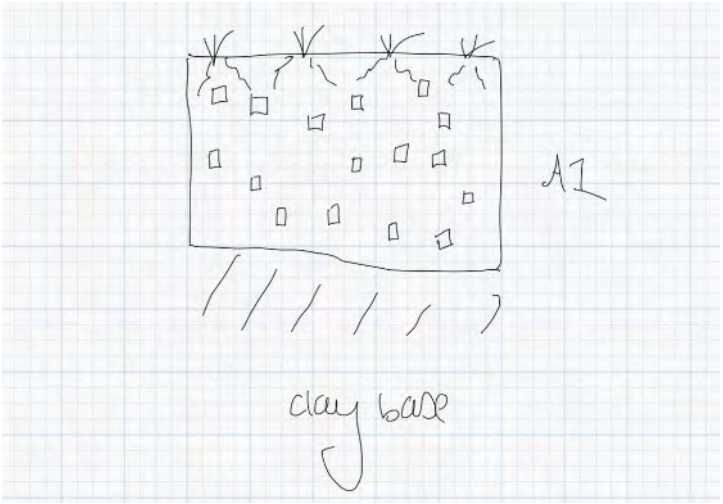
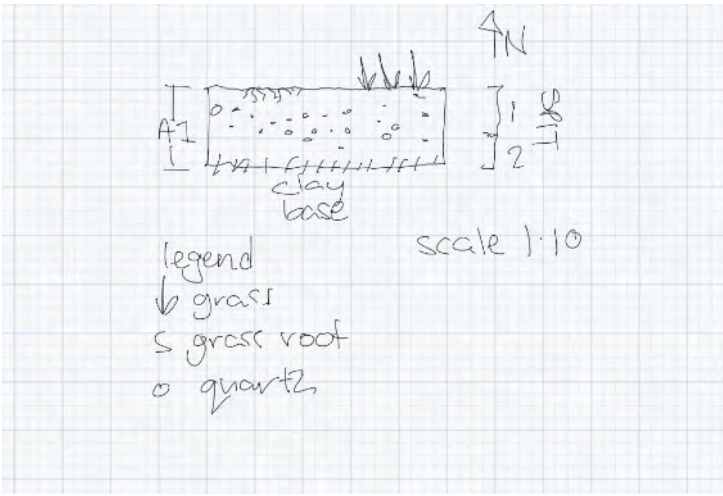
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B1, TEST PIT 5. *Unit Dimensions in mm 500x500x500* **Landform:** Gentle slope **Colour:** 10YR 5/2 **PH:** 6 **Compaction:** Highly compact loose/friable peds. **Composition / Particle size:** Fine-grained sub-rounded sandy silt. **Inclusions:** 10% gravelly sub-angular quartz in top 300mm. 2-5% grassroot from grass covering pit prior to excavation. 2% minor gravel rock to base. **Comments:** A1 horizon spans 0-500mm. Diffuse transition into B1 base clay layer starting approx. 400-450mm. A1 horizon extends to base.		

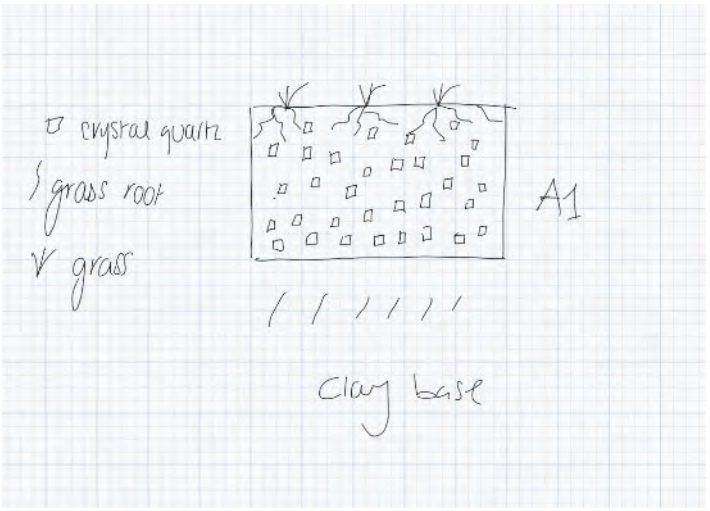
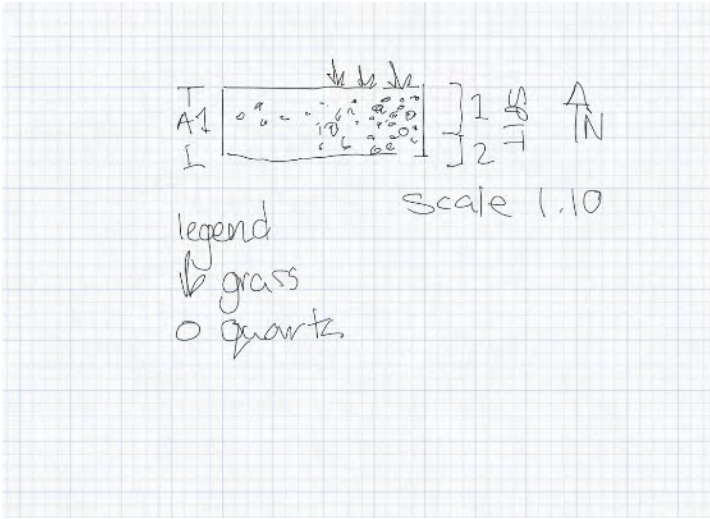
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 6. *Unit Dimensions in mm 500x500x200* **Landform:** Crest **Colour:** Warm mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz inclusions throughout spit 1. The quartz rocks get larger towards the bottom of the pit. **Comments:** A1 from 0-200mm.		
TRANSECT B1, TEST PIT 6. *Unit Dimensions in mm 500x500x250* **Landform:** Gentle slope **Colour:** Mid-brown 10YR 6/4 **PH:** 6. **Compaction:** Highly compact loose/friable peds **Composition / Particle size:** Fine grained sub-rounded sandy silt. **Inclusions:** Sub-angular quartz (15%). Grass root (2-5%) in top 20-30mm, associated with grass mat.		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
Comments: A1 horizon from 0-250mm, diffuse transition into B1 basal clay layer.		
TRANSECT B, TEST PIT 7. *Unit Dimensions in mm 500x500x200* **Landform:** Crest **Colour:** Light brown 10YR 5/4 **PH:** **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz inclusions throughout spit 1. The quartz rocks get larger towards the bottom of the pit. **Comments:** A1 from 0-200mm		

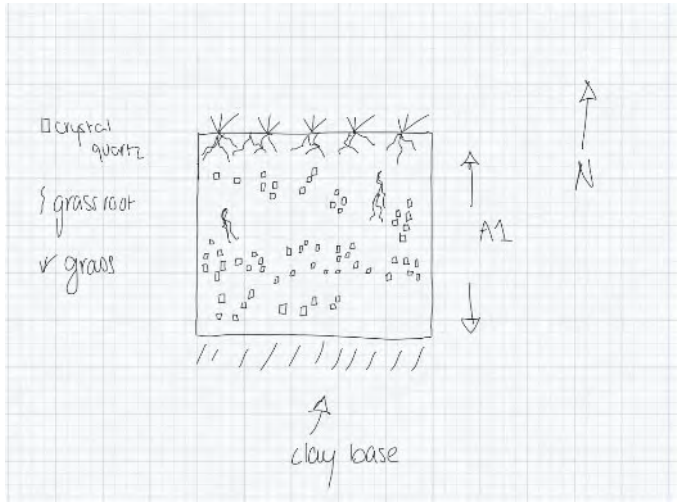
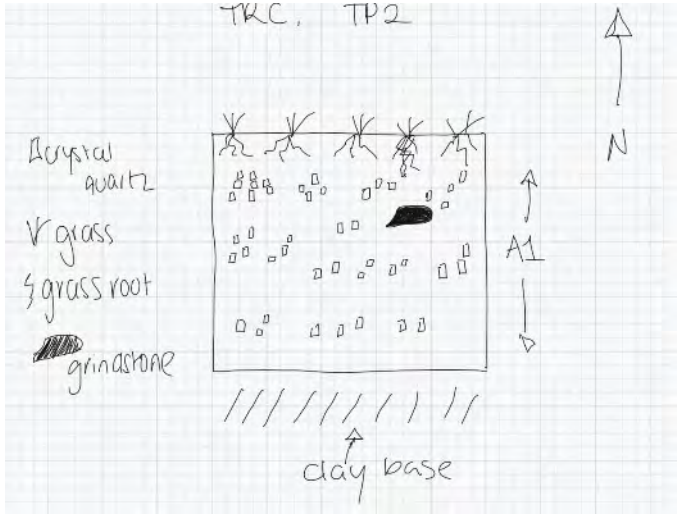
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B1, TEST PIT 7. *Unit Dimensions in mm 500x500x200* **Landform:** Gentle slope **Colour:** Mid-brown 10YR 6/4 **PH:** 6 **Compaction:** Highly compact loose/friable peds. **Composition / Particle size:** Fine sub-rounded sandy silt. **Inclusions:** 10-15% gravelly sub-angular quartz. 2% grassroot in to 20mm. Diffuse transition into B1 basal clay. **Comments:** A1 extends to 200mm (pit base).		
TRANSECT B, TEST PIT 8. *Unit Dimensions in mm 500x500x200* **Landform:** Crest **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz inclusions throughout spit 1. The quartz rocks get larger towards the bottom of the pit.		

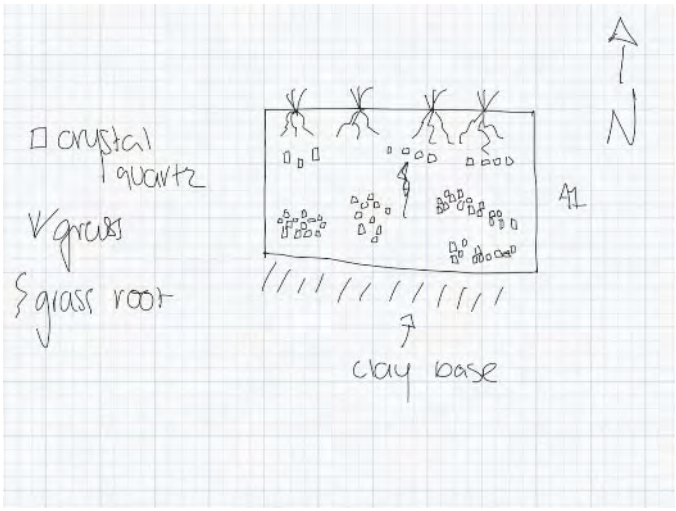
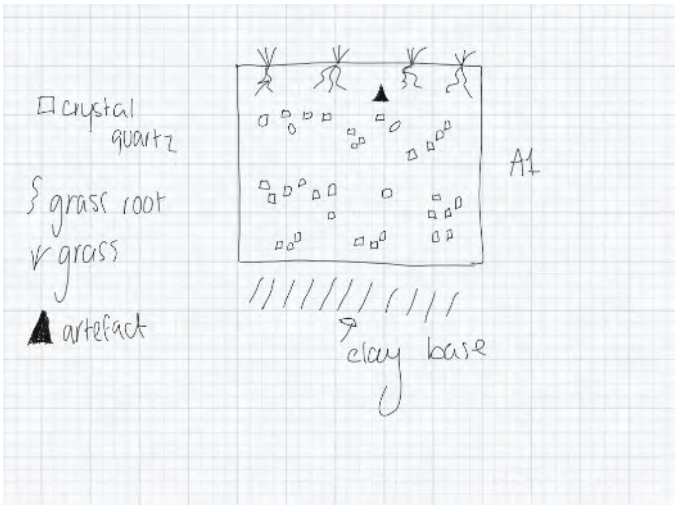
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
Comments: A1 horizon from 0-200mm		
TRANSECT B1, TEST PIT 8. *Unit Dimensions in mm 500x500x150* **Landform:** Gentle slope **Colour:** Mid-brown 10YR 6/4 **PH:** 6 **Compaction:** Highly compact loose/friable peds. **Composition / Particle size:** Fine sub-rounded sandy silt. **Inclusions:** 10-15% gravelly sub-angular quartz. 2% grassroot in to 20mm. Diffuse transition into B1 basal clay. **Comments:** A1 extends to 150mm pit base.		

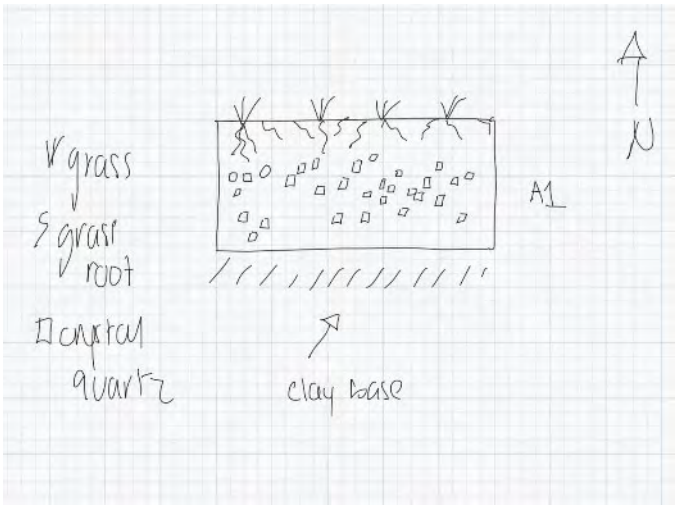
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 9. *Unit Dimensions in mm 500x500x350* **Landform:** Gentle slope adjacent to crest **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz inclusions throughout spit 1. The quartz rocks get larger towards the bottom of the pit. **Comments:** A1 from 0-350mm		
TRANSECT B1, TEST PIT 9. *Unit Dimensions in mm 500x500x150* **Landform:** Gentle slope **Colour:** Mid-brown 10YR 6/4 **PH:** 6 **Compaction:** Highly compact loose/friable peds. **Composition / Particle size:** Fine sub-rounded sandy silt. **Inclusions:** 10-15% gravelly sub-angular quartz. 2% grassroot in to 20mm. Diffuse transition into B1 basal clay. **Comments:** A1 extends to 150mm pit base.		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHS	TEST PIT SECTIONS
TRANSECT B, TEST PIT 10. *Unit Dimensions in mm 500x500x300* **Landform:** Slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt. 30% sand and 70% silt. **Inclusions:** Large quantity of small crystal quartz inclusions throughout spit 1. The quartz rocks get larger towards the bottom of the pit. **Comments:** A1 from 0-300mm		
TRANSECT B1, TEST PIT 10. *Unit Dimensions in mm 500x500x150* **Landform:** Gentle Slope **Colour:** Mid-brown 10YR 6/4 **PH:** 6 **Compaction:** Highly compact loose/friable peds. **Composition / Particle size:** Fine sub-rounded sandy silt. **Inclusions:** 10-15% gravelly sub-angular quartz. 2% grassroot in to 20mm. Diffuse transition into B1 basal clay. **Comments:** A1 extends to 150mm pit base.		

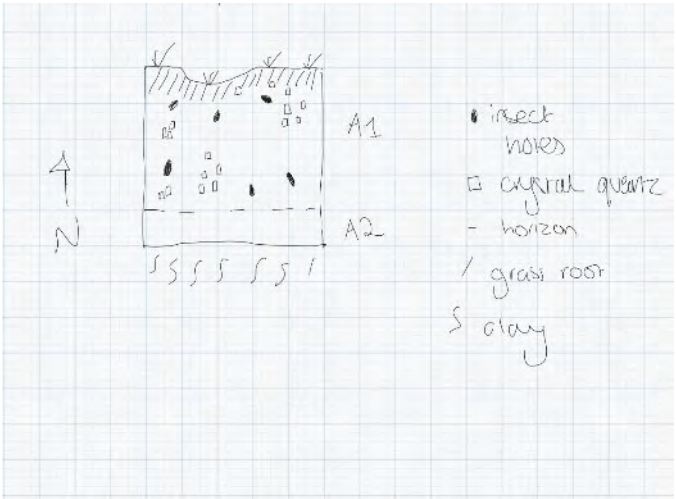
TRANSECT C

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPH/S	TEST PIT SECTIONS
TRANSECT C, TEST PIT 1. *Unit Dimensions in mm 500x500x430* **Landform:** Slope **Colour:** Light grey/brown 10YR 6/3 **PH:** 7 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained silty sand 40% silt, 60% sand. **Inclusions:** Small gravelly crystal quartz inclusions <10%. Grass mat with grassroot inclusions, <1%. Flecks of coffee rock at bottom of pit, <1% **Comments:** A1 from 0-430 mm. Very compacted sandy deposit.		
TRANSECT C, TEST PIT 2. *Unit Dimensions in mm 500x500x430* **Landform:** Slope **Colour:** Light grey/brown 10YR 6/3 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained silty sand 40% silt, 60% sand. **Inclusions:** Small gravelly crystal quartz inclusions <10%. Grass mat with grassroot inclusions, <1%. Flecks of coffee rock at bottom of pit, <1% and a large grindstone artefact located in spit two. **Comments:** A1 from 0-430mm		

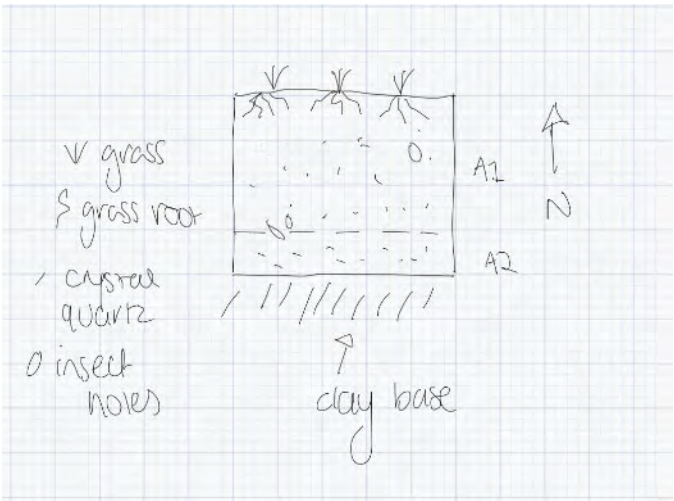
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPH/S	TEST PIT SECTIONS
TRANSECT C, TEST PIT 3. *Unit Dimensions in mm 500x500x300* **Landform:** Slope **Colour:** Light grey/brown 10YR 6/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained silty sand 40% silt, 60% sand. **Inclusions:** Small gravelly crystal quartz inclusions <10%. Grass mat with grassroot inclusions, <1%. Flecks of coffee rock at bottom of pit, <1%. **Comments:** A1 from 0-300 mm on north side and 0-280mm on south side.		
TRANSECT C, TEST PIT 4. *Unit Dimensions in mm 500x500x400* **Landform:** Slope **Colour:** Mid grey-brown 10YR 5/3 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained silty sand 40% silt, 60% sand. **Inclusions:** Small gravelly crystal quartz inclusions <10%. Grass mat with grass root inclusions, <1%. Flecks of coffee rock at bottom of pit, <1%. Flake located in spit 1. **Comments:** A1 from 0-400mm		

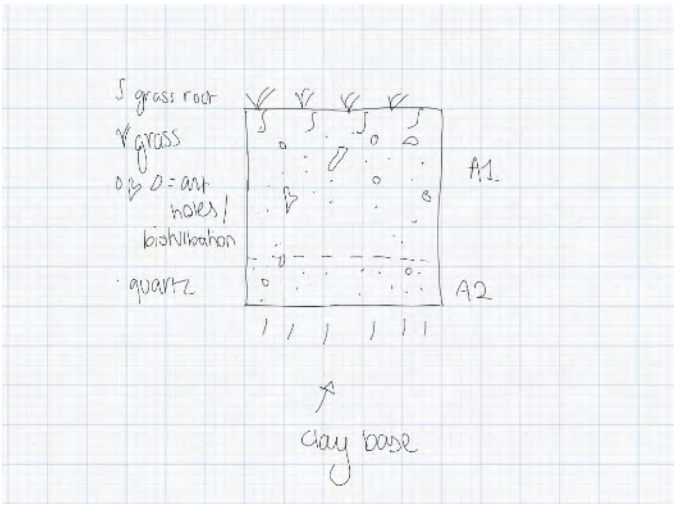
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPH/S	TEST PIT SECTIONS
TRANSECT C, TEST PIT 5. *Unit Dimensions in mm 500x500x230* **Landform:** Slope **Colour:** Light grey/brown 10YR 6/3 **PH:** 7 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained silty sand 40% silt, 60% sand. **Inclusions:** Small gravelly crystal quartz inclusions <10%. Grass mat with grass root inclusions, <1%. Flecks of coffee rock at bottom of pit, <1% **Comments:** A1 from 0-230mm		

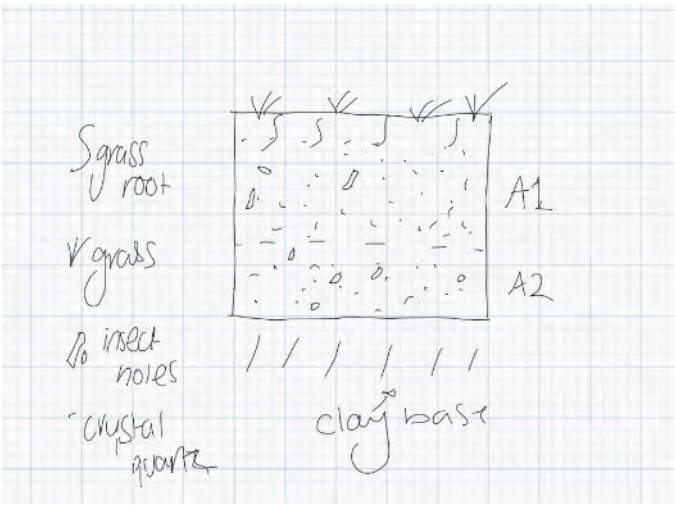
TRANSECT D

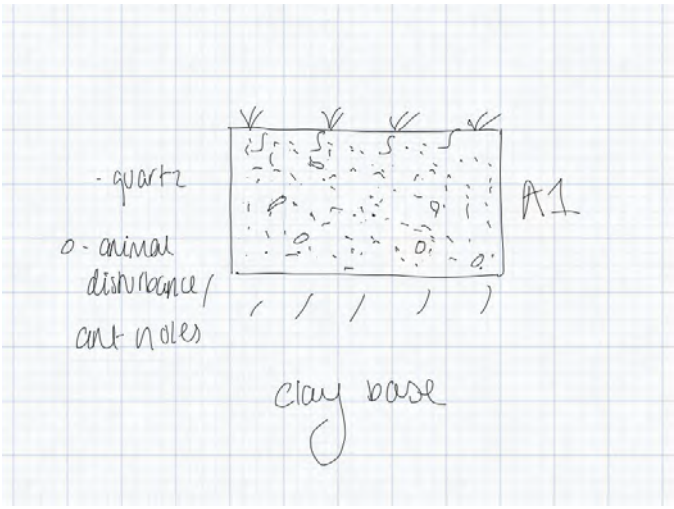
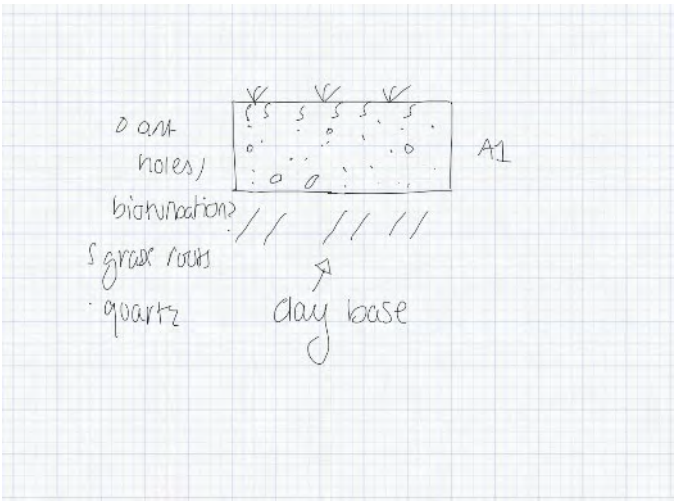
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 1. *Unit Dimensions in mm 500x500x500* **Landform:** Gentle/low slope **Colour:** • **A1:** Light grey-brown 10YR 5/3 • **A2:** Warm orangey brown 7.5YR 5/4 **PH:** • **A1:** 5 • **A2**: 7 **Compaction:** Loose/friable **Composition / Particle size:** • **A1:** Fine sandy silt • **A2:** Sandy silt, 30% sand and 70% silt. **Inclusions: A1**: Grass mat with grass roots protruding into pit downward <1%. quartz <10%. **A2:** same as A1 minus the grassroots **Comments:** • **A1:** Horizon 0-400mm • **A2:** Horizon 400-500		

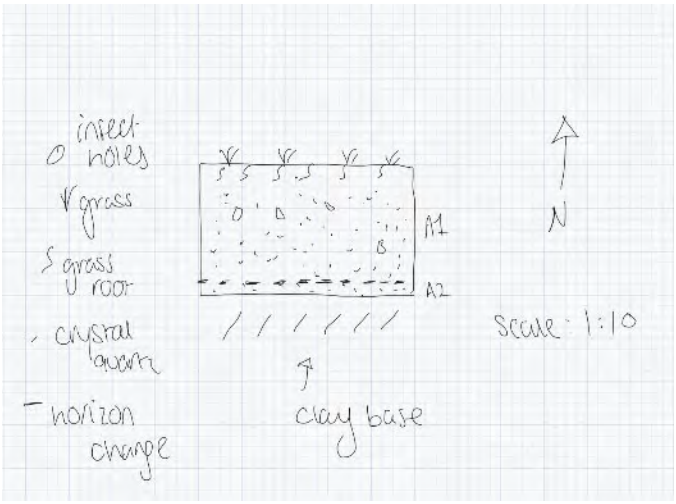
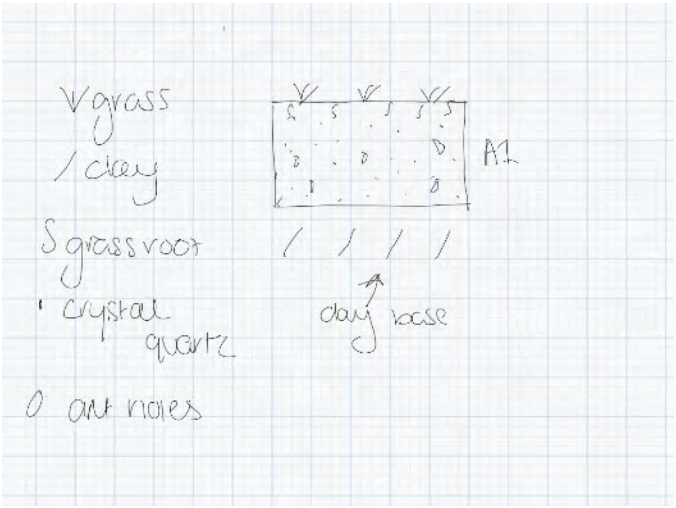
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 2. *Unit Dimensions in mm 500x500x400* **Landform:** Gentle low slope **Colour:** • **A1:** Light warm brown 10YR 5/3 • **A2:** Light brown 10YR 6/4 **PH:** • **A1:** 5 • **A2:** 7 **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt - 30% sand, 70% silt. **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **A2:** Fine quartz rock inclusions <10%. **Comments:** • **A1:** Horizon 0-250mm • **A2:** Horizon 250-400mm		

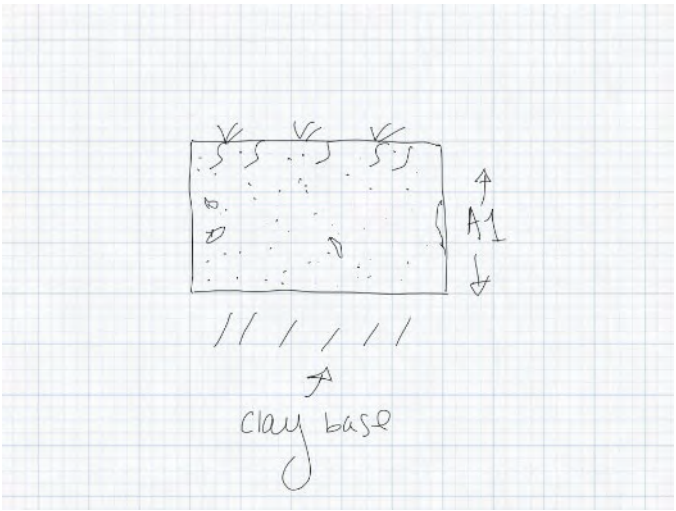
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 3. *Unit Dimensions in mm 500x500x400* **Landform:** Gentle slope/low slope **Colour:** • **A1:** Light greyish brown 10YR 5/3 • **A2:** Light brown 10YR 6/3 **PH:** • **A1:** 5 • **A2:** 6 **Compaction:** Loose/friable **Composition / Particle size:** • **A1:** Fine sandy silt • **A2:** Fine grained sandy silt **Inclusions: A1:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **A2:** Fine quartz rock inclusions <10%. **Comments:** • **A1:** Horizon 0-250mm. Very diffuse transition into A2. **A2:** Horizon 250-400mm		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 4. *Unit Dimensions in mm 500x500x500* **Landform:** Gentle slope **Colour:** • **A1** Light grey-brown 10YR 5/3 • **A2** Warm Brown 7.5YR 5/4 **PH:** • **A1** 5 • **A2** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Fine grained sandy silt **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **Comments:** • **A1** Horizon 0-380mm **A2** Horizon 380-500mm		

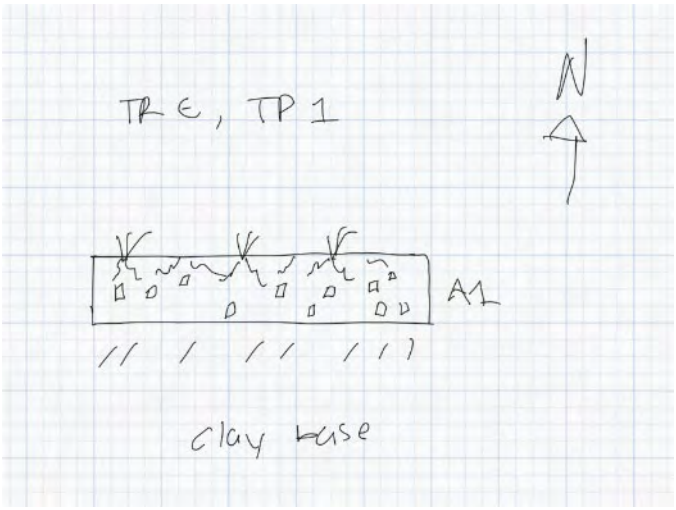
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 5. *Unit Dimensions in mm 500x500x400* **Landform:** Gentle slope **Colour:** • **A1:** Light warm brown 10YR 5/3 • **A2:** Light brown 10YR 6/4 **PH:** • **A1:** 5 • **A2:** 7 **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt - 30% sand, 70% silt. **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **A2:** Fine quartz rock inclusions <10%. **Comments:** • **A1:** Horizon 0-250mm **A2:** Horizon 250-400mm		

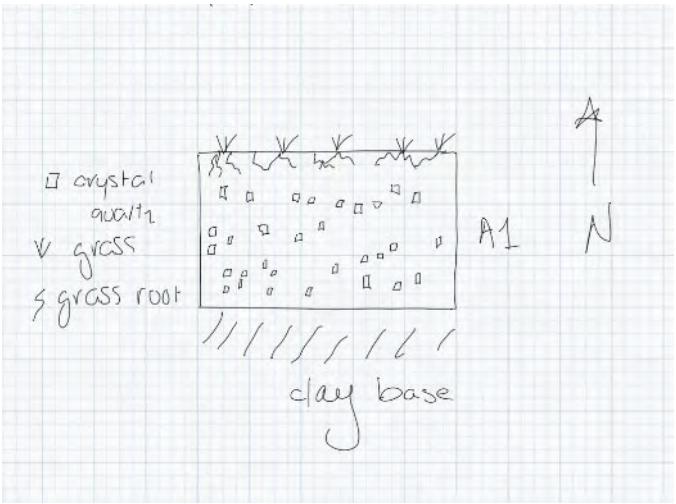
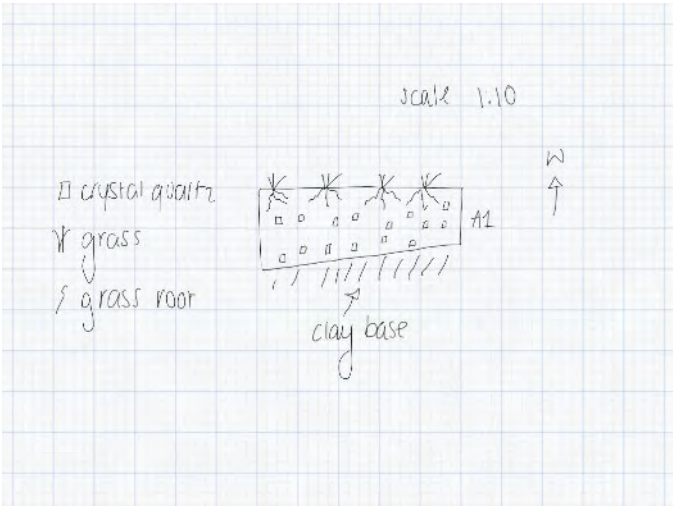
SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 6. *Unit Dimensions in mm 500x500x250* **Landform:** Gentle slope **Colour:** Light warm brown 10YR 5/3 **PH:** 5 **Compaction:** Loose storable **Composition / Particle size:** Fine sandy silt - 30% sand, 70% silt. **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **Comments:** A1 from 0-250mm		
TRANSECT D, TEST PIT 7. *Unit Dimensions in mm 500x500x200* **Landform:** NA **Colour:** 10YR 5/3 **PH:** NA **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **Comments:** A1 into base 0-200mm		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 8. *Unit Dimensions in mm 500x500x300* **Landform:** Gentle slope **Colour:** Light warm brown 10YR 5/3 **PH:** 5 **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt. 30% sand and 70% silt. **Inclusions:** Quartz <10%, no topsoil-horizon only. Minor grassroot inclusions in top of horizon <2%. **Comments:** A1 horizon from 0-300mm		
TRANSECT D, TEST PIT 9. *Unit Dimensions in mm 500x500x250* **Landform:** Gentle low slope **Colour:** 10YR 5/3 **PH:** 5 **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt - 30% sand, 70% silt. **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. Comments: A1 0-250mm		

SOIL DESCRIPTIONS	TEST PIT PHOTOGRAPHs	TEST PIT SECTIONS
TRANSECT D, TEST PIT 10. *Unit Dimensions in mm 500x500x300* **Landform:** Gentle low slope **Colour:** Light warm brown 10YR 5/3 **PH:** 5 **Compaction:** Loose/friable **Composition / Particle size:** Fine sandy silt - 30% sand, 70% silt. **Inclusions:** Large quantity of quartz <10%. No topsoil, horizon only. Minor grass root inclusions in top of horizon <2%. **A2:** Fine quartz rock inclusions <10%. **Comments:** A1 from 0-300mm		

TRANSECT E

SOIL DESCRIPTION	TEST PIT PHOTOGRAPH/S	TEST PIT SECTIONS
TRANSECT E, TEST PIT 1. *Unit Dimensions in mm 500x500x100* **Landform:** Slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6 **Compaction:** Loose/friable **Composition / Particle size:** Very compacted hard sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 from 0-100mm.		

SOIL DESCRIPTION	TEST PIT PHOTOGRAPH/S	TEST PIT SECTIONS
TRANSECT E, TEST PIT 2. *Unit Dimensions in mm 500x500x300* **Landform:** Slope **Colour:** Mid brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/Friable **Composition / Particle size:** Very compacted hard sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 from 0-300 mm		
TRANSECT E, TEST PIT 3. *Unit Dimensions in mm 500x500x200* **Landform:** Slope **Colour:** Mid-brown 10YR 5/4 **PH:** 6.5 **Compaction:** Loose/friable **Composition / Particle size:** Very compacted hard sandy silt. 30% sand, 70% silt. **Inclusions:** Sub-angular to sub-rounded crystal quartz inclusions. **Comments:** A1 horizon 0-380mm. North side at 300mm due to slope. A very diffuse transition into clay base. **Comments:** A1 from 0-200mm		

SEE VOLUME 2 FOR CONSULTATION APPENDICES