# ABORIGINAL CULTURAL HERITAGE IMPACT ASSESSMENT

**Project:**
Hexham Wind Farm

**Project Address:**
Hexham, Victoria

**Sponsored By:**
Hexham Wind Farm Pty Ltd

**8 January 2026**

**Heritage Advisor:**
Daniel Juers &
Dr Thomas Rymer

**Author:**
Daniel Juers &
Dr Thomas Rymer

**Tardis Archaeology**
Heritage Advisors

ABN 29 639 085 948

PO Box 776
Beaconsfield VIC 3807

Beaconsfield: 03 9769 7765
Port Melbourne: 03 9676 9009

enquiries@tardisarc.com.au
tardisarc.com.au

# HEXHAM WIND FARM

# ABORIGINAL CULTURAL HERITAGE IMPACT ASSESSMENT

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| Sponsor | Hexham Wind Farm Pty Ltd |
| Heritage Advisors | Daniel Juers & Dr Thomas Rymer |
| Author | Daniel Juers & Dr Thomas Rymer |
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## EXECUTIVE SUMMARY

The purpose of this Aboriginal Cultural Heritage Impact Assessment (ACHIA) is to address the scoping requirements for the Hexham Wind Farm [the project] that are relevant to the potential tangible and intangible Aboriginal cultural heritage impacts as part of an environment effects statement (EES), as required under the *Environment Effects Act 1978*. The report also supports the planning permit application for the project, as required under the *Planning and Environment Act 1987*.

This ACHIA assesses the existing environment, likely effects, design and mitigation, and performance of the project in relation to Aboriginal cultural heritage and the key issues identified in the scoping requirements and evaluation objectives.

Currently, Cultural Heritage Management Plan (CHMP) 19602 is being prepared for the project by Tardis Archaeology Pty Ltd (Tardis) in consultation with the relevant Registered Aboriginal Party (RAP) with responsibility for evaluating and approving the CHMP, the Eastern Maar Aboriginal Corporation (EMAC).

Section 2 outlines the EES scoping requirements for Aboriginal cultural heritage and the relevant sections that address each requirement.

Section 3 provides the project description with particular reference to elements of the project and the likely ground disturbance footprint.

Section 4 outlines the relevant legislation, policy and guidelines at the Commonwealth and State level that applies to Aboriginal cultural heritage.

Section 5 presents the methodology used to assess the impact of the project on Aboriginal cultural heritage including the study area, establishing existing conditions, impact assessment and cumulative impact.

Section 6 presents the existing conditions using the desktop, standard and complex assessment (ground surface survey) (Sections 6.1 & 6.2) that has been undertaken as part of the preparation of CHMP 19602. Aboriginal cultural heritage that may be impacted by the project is addressed (Section 6.3) as well as key issues (Section 6.4).

Section 7 addressed the impact pathways for each project phase (Section 7.1), the cumulative impact pathway (Section 7.2), design mitigation and management measures (Section 7.3) and residual impact (Section 7.4).

Section 8 presents management measures for effective monitoring and reporting for each project phase.

Section 9 concludes that although the project contains significant Aboriginal cultural values, these values can be effectively managed for different phases of the project.

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## PHOTOS (IN TEXT)

## ACKNOWLEDGEMENTS

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## ABBREVIATIONS

| | |
|---|---|
| ACHRIS | Aboriginal Cultural Heritage Register and Information Services |
| AS | Artefact Scatter |
| ASTT | Australian Small Tool Tradition |
| BP | Years Before Present (1950) |
| CHMP | Cultural Heritage Management Plan |
| dGPS | Differential Global Positioning System |
| EMAC | Eastern Maar Aboriginal Corporation |
| FP-SR | First Peoples – State Relations (Formally Aboriginal Victoria) |
| GPS | Global Positioning System |
| HCO | Holocene Climatic Optimum |
| Ka | Thousand years ago |
| LDAD | Low Density Artefact Distribution |
| Ma | Million years ago |
| NoI | Notice of Intent to Prepare a Cultural Heritage Management Plan |
| RAP | Registered Aboriginal Party |
| STP | Shovel Test Pit |
| TP | Test Pit |
| VAHR | Victorian Aboriginal Heritage Registry |

# 1 INTRODUCTION

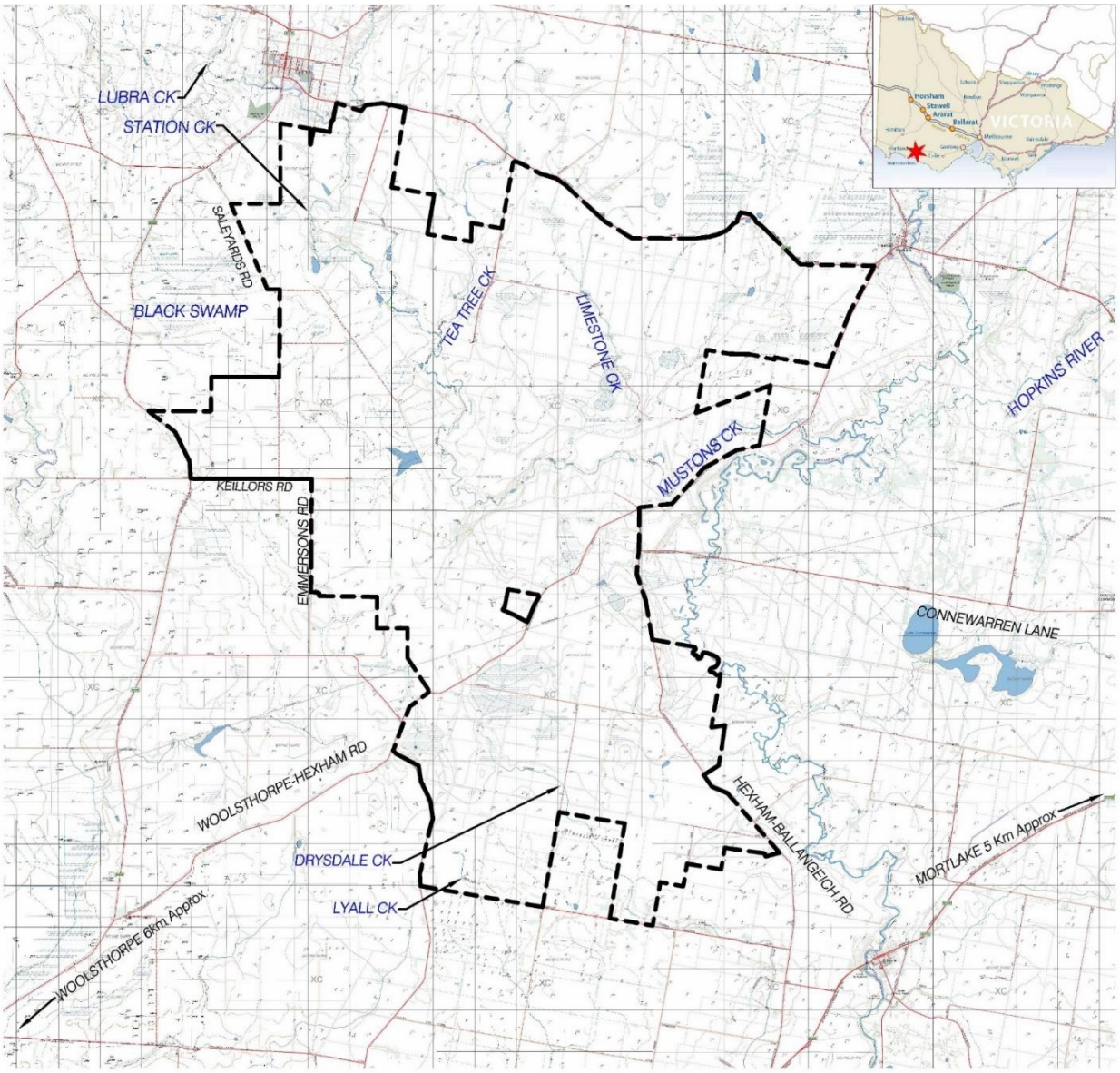
The purpose of this Aboriginal Cultural Heritage Impact Assessment (ACHIA) is to address the scoping requirements for the Hexham Wind Farm [the project] that are relevant to the potential tangible and intangible Aboriginal cultural heritage impacts as part of an environment effects statement (EES), as required under the *Environment Effects Act 1978*. The report also supports the planning permit application for the project, as required under the *Planning and Environment Act 1987*.

This ACHIA assesses the existing environment, likely effects, design and mitigation, and performance of the project in relation to Aboriginal cultural heritage and the key issues identified in the scoping requirements and evaluation objectives.

In this report the project area or study area is the same as the activity area.

## 1.1 Registered Aboriginal Party and CHMP Evaluation

Currently, Cultural Heritage Management Plan (CHMP) 19602 is being prepared for the project by Tardis Archaeology Pty Ltd (Tardis) in consultation with the relevant Registered Aboriginal Party with responsibility for evaluating and approving the CHMP, the Eastern Maar Aboriginal Corporation (EMAC).




Topographic map used for Location Plan: 1:30,000 Number T7421-4-3-1, T7421-4-4-3, T7421-4-4-2, T7421-4-1-3, T7321-1-1-1
T7421-4-4-4, T7421-4-4-1, T7421-4-1-4, T7421-4-1-1, T7421-1-4-4, T7422-3-3-3, T7422-3-3-2, T7422-3-2-3

0 2500 5000
Scale of Metres

**Legend:**

Activity Area Boundary
16,103 hectares (approx)

Parish: *Yeth-Youang, Quamby, Quamby North, Caramut, Hexham West,*

LGA: *Moyne Shire Council*

N
GDA94
MGA Zone 54

**Map 1 Project Location**

# 2 EES SCOPING REQUIREMENTS

The evaluation objective for Aboriginal cultural heritage in the Scoping Requirements Hexham Wind Farm Environment Effect Statement (SR HWF EES 2024: Section 4.5) is to protect, avoid, or minimise where avoidance is not possible, adverse effects on tangible and intangible Aboriginal cultural heritage values in consultation with Traditional Owners.

The scoping requirements relevant to the evaluation object are shown in Table 1, as well as the location where these items have been addressed in this report.

**Table 1 Scoping Requirements Aboriginal Cultural Heritage**

| Category | Requirement Relevant to Aboriginal Cultural Heritage | Sections Addressing This Requirement |
|---|---|---|
| Key Issues | Destruction or disturbance of sites or places of Aboriginal cultural heritage. | 6.3, 7 |
| | Potential for indirect impacts on sites or places of Aboriginal cultural significance close to the project areas, both known and unknown. | 6.3, 7 |
| | Potential impacts on intangible Aboriginal cultural heritage values associated with the project areas and surrounds. | 6.3, 7 |
| Existing Environment | Review and assess previous studies, registers, landform and land use history to identify areas of known Aboriginal cultural heritage and prepare predictive models of areas with potential to contain Aboriginal cultural heritage. | 6.1 & 6.2 |
| | Describe the extent, nature and significance of any Aboriginal cultural heritage sites or areas of sensitivity potentially impacted by the project through consultation and investigations to the satisfaction of the relevant Registered Aboriginal Parties (RAPs) and First Peoples – State Relations (FP-SR), ensuring adequate field assessments are conducted to verify the findings of any desktop studies. | 6.1 & 6.2 |
| | Identify intangible Aboriginal cultural heritage values associated with the project areas. | 6.2.7 & 6.3 |
| Likely Effects | Assess the potential direct and indirect effects of the project on Aboriginal cultural heritage values, within the project area, and whether they can be avoided. | 7 |
| | Assess the potential direct or indirect effects on any intangible Aboriginal cultural heritage values associated with the project areas. | 7 |
| Design and Mitigation | Describe and evaluate potential and proposed design, construction and operation mitigation methods to avoid adverse effects on Aboriginal cultural heritage, and where avoidance is not possible, to minimise adverse effects. | 7.3.1 |

| Category | Requirement Relevant to Aboriginal Cultural Heritage | Sections Addressing This Requirement |
|---|---|---|
| | Develop a Cultural Heritage Management Plan (CHMP). | 7.3.2 |
| Performance | Outline how compliance with conditions of any required statutory approvals (ie, CHMPs) will be managed and monitored. | 7.3.2 & 8 |
| | Outline and evaluate the need for additional management and / or monitoring measures, further to those presented in the draft CHMPs, to manage risks of effects on sites and places of Aboriginal cultural heritage significance, as part of the EMF. | 7.3.2 &8 |

# 3 PROJECT DESCRIPTION

Hexham Wind Farm Pty Ltd (the proponent) is developing the proposed Hexham Wind Farm (the project) in Moyne Shire, Victoria. The project will harness strong and reliable winds to generate renewable energy through the construction and operation of up to 106 wind turbines generators and would operate for a period of at least 25 years following a two-year construction period. Electricity produced by the project would be fed through underground and overhead cables to a new on-site terminal station, where it would be exported to the national electricity network via the Moorabool to Heywood 500 kilovolt transmission line.

The project extends across approximately 16,000 hectares of private and public land located between the townships of Hexham, Caramut and Ellerslie in south-western Victoria. The main land use within the project site is agricultural (predominantly cattle and sheep grazing, along with some cropping). Much of the area has been cleared of native vegetation with remnant vegetation largely restricted to roadside reserves and along watercourses, with small, isolated areas on private land.

A temporary on-site quarry is being investigated for the purposes of providing aggregate materials for access tracks and hardstand areas, and to minimise traffic movements on local roads during construction. If an on-site quarry is not deemed viable, aggregate material would be supplied from one or more nearby quarries. Potential quarries that have been investigated to supply the necessary raw materials required include Mt Shadwell Quarry, Mt Napier Quarry, Tarrone Quarry, Gillear Sand and Limestone Quarry and/or Camperdown quarries). All quarries have good access to the project site via major arterial roads.

Within 12 months of wind turbines permanently ceasing to generate electricity (assuming the turbines are not repowered), the wind farm would be decommissioned. This would include removing all above ground equipment, restoration of all areas associated with the project, unless otherwise useful to the ongoing management of the land, and post-decommissioning revegetation with pasture or crop (in consultation with and as agreed with the landowner)

The project main features are presented in Table 2 (Map 2).

## Table 2 Project Main Features

| Feature | Details |
|---|---|
| Wind turbines and hardstand areas | Up to 106 with a maximum tip height of 260 metres, maximum rotor diameter up to 190 metres and minimum tip height of 40 metres. Maximum tower base width of between 5 and 6 metres Blade length of up to 93 metres.<br><br>Each wind turbine would have an adjacent hardstand area of around 6,500 square metres, which equates to 70 hectares for all project wind turbines. Turning circle areas would be included as an extension to hardstand areas located at the end of access tracks. In this situation, an individual hardstand area would be 9,500 square metres, resulting in a total hardstand area of 91.5 ha. |
| Construction footprint | 603 hectares (or around 3.75% of the project site) |
| Operational footprint | 150 hectares (or around 0.9%) of the project site) |
| Construction period | Approximately 24 months |
| Electrical reticulation | Approximately 139 kilometres of 33 kV electricity cable laid in approximately 94 kilometres of trenches about 1 metre below the ground. The work area width for the excavator to operate and for stockpiling of soil would be about 7 metres wide for 92 kilometres and 14 metres wide for 2.5 kilometres of trench length.<br><br>Approximately 40 kilometres of overhead transmission lines to connect wind turbines to the new on-site terminal station. The transmission voltage is expected to be 33 kilovolts (although 132 kilovolts and 220 kilovolts are alternative options), with the overhead dual circuit transmission line consisting of either single or parallel pole line (i.e., single poles up to 26 metres high, with conductor circuits on each side) |
| On-site terminal station | Electricity generated by the project would be distributed by underground and overhead cables to the proposed new onsite terminal station located adjacent to the existing Moorabool to Heywood 500kV transmission line.<br><br>On-site terminal station approximately 7.3 ha in size and includes infrastructure with a height of up to approximately 15 metres (excluding the poles for the overhead transmission line). |
| Permanent met masts | Up to five permanent meteorological masts are proposed, to be in place for the life of the project.<br><br>A single-lane access track roughly 5 meters in width would be constructed to provide access. |
| Operations and maintenance facility | An operations and maintenance facility would be located adjacent to the on-site terminal station and provide office, storage, and maintenance facilities.<br><br>Nominally 90 metres by 200 metres. |
| Staging areas and passing lanes | 24 staging areas up to 300 metres x 15 metres in length.<br><br>Several passing lanes of 25 metres in length. |

| Feature | Details |
|---|---|
| Site access and access tracks | Approximately 131 kilometres of new internal access track and upgrades to approximately 16.5 kilometres of existing access track (ie a total of around 128 kilometres of access tracks). The final access tracks would be 9 metres wide (inclusive of drainage, where required) and a maximum 120 metre turning radius. The construction footprint of access tracks would be around 12 metres wide.<br><br>Twelve site access points are proposed from two arterial and five local council roads, being:<br>• one access point from Hamilton Highway<br>• one access point from Warrnambool-Caramut Road<br>• five access points from Woolsthorpe-Hexham Road<br>• one access point from Keillors Road<br>• two access points from Hexham-Ballangeich Road |
| Battery Energy Storage System (BESS) | An on-site battery energy storage facility with a is proposed to be located adjacent to the on-site terminal station. The name plate capacity is to be confirmed. The BESS would consist of a series of 20-foot containerised batteries with transformers, high voltage AC (HVAC) coolers and other electrical plant.<br><br>The BESS would be sited on a hardstand area of up to 3 hectares (nominally 413 metres x 67 metres). |
| Temporary components | A main temporary construction compound would be located within the project site and include office facilities, amenities, and car parking (8 hectares).<br><br>Four additional temporary construction compounds are also planned (200m x 200m).<br><br>Seven concrete batching plants would be established to supply concrete for the wind turbine foundations, the on-site terminal station, and the BESS (around 50m x 100m each) |
| Temporary onsite quarry | The proposed quarry is in the western portion of the project area. The work authority area is 52.3 ha with an extraction area of 21.2 ha and material stockpile area of 8.6 ha and 0.5 ha for amenities and light vehicle parking. The remaining area will be used for stockpiling overburden and for groundwater management infrastructure. |
| Life | A minimum 25-year operating life is expected, following a period of up to 3 years of pre-development and construction activities. Pre-development would include detailed design and early works, where permitted. |
| Decommissioning | Within 12 months of wind turbines permanently ceasing to generate electricity, the wind farm would be decommissioned. This would include removing all above ground equipment, restoration of all areas associated with the project, unless otherwise useful to the ongoing management of the land, and post-decommissioning revegetation with pasture or crop (in consultation with and as agreed with the landowner). |

# 4 LEGISLATION, POLICY AND GUIDELINES

## 4.1 Commonwealth Government

### 4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* established the National Heritage List and Commonwealth Heritage List. The National Heritage list includes natural, Indigenous and historic places of outstanding heritage value to the nation. The Act establishes penalties for an action that has or will make a significant impact to indigenous heritage values of a place on the National Heritage List. The Commonwealth Heritage List includes places on Commonwealth lands and waters or under Australian Government control that have Indigenous heritage significance.

### 4.1.2 Native Title Act 1993

With the introduction of the *Native Title Act 1993*, the acknowledgement of Indigenous ownership of land was legislated, and since then native title claims on un-alienated Crown Land have been lodged initially with the National Native Title Tribunal, and more recently to the Federal Court. Under this Act, all freehold and Crown Lease land is exempted from any future claim (unless leasehold reverts to the Crown). Un-alienated Crown Land that potentially may be subject to claim includes all forms of water (to the low water mark) air above and subsoil below, and all land in which native title has not been extinguished under the Act. Establishing native title within any area requires many conditions to be met. Essentially, claimants must be able to show that the area claimed has been continually occupied or in which direct links (physical, spiritual, traditional) have been maintained.

### 4.1.3 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* can protect areas and objects that are of particular significant to Aboriginal people. An Aboriginal person or group or persons can apply to the Environment Minister to consider a declaration to protect an area, object or class of objects from threat of injury or desecration.

## 4.2 State Government

### 4.2.1 Aboriginal Heritage Act 2006 and Aboriginal Heritage Regulations 2018

The primary purpose of the Aboriginal Heritage Act 2006 is to protect Aboriginal cultural heritage in Victoria. The Act established organisations to preserve, enforce and manage Aboriginal heritage including the Victorian Aboriginal Heritage Council to provide advise the Minister for Aboriginal Affairs in regards to the management of cultural heritage and Registered Aboriginal Parties for Aboriginal groups with ties to country to be involved in decision making processes for the management of cultural heritage.

The *Aboriginal Heritage Regulations 2018* gives effect to the Act and prescribes standards, sets conditions for when a Cultural Heritage Management Plan (CHMP) should be prepared and sets fees and charges.

FP–SR have various approved forms, guides, practice notes and checklists to assist in the preparation and evaluation of CHMPs including the *Format in which a cultural Heritage Management Plan must be Prepared*, the *Guide to Preparing a Cultural Heritage Management Plan* and the *Cultural Heritage Management Plan – Evaluation Checklist*. The CHMP being prepared for the project complies with these documents.

### 4.2.2 Traditional Owner Settlement Act 2010

The *Traditional Owner Settlement Act 2010* allows for out-of-court settlement of native title. The Victorian Government can recognise traditional owners and certain rights in Crown land. When traditional owners enter into a settlement, they must agree to withdraw any native title claim under the Commonwealth Native Title Act 1993 and agree not to make any future native title claims. The settlement can include a Recognition and Settlement Agreement, a Land Agreement, a Land Use Activity Agreement, a Funding Agreement or a Natural Resource Agreement. The traditional owner must meet the definition of 'traditional owner' under the Act before an agreement can be entered into.

# 5 METHODOLOGY

## 5.1 Study Area

The study area comprises the project area described in Section 3 and is commensurate with the cadastre for the planning permit. This study area will be the activity area for CHMP 19602 being prepared for the project.

For the purposes of formulating a site prediction statements for the activity area and assessing the cumulative impact of the project, a larger area was investigated (see Section 5.2.1).

## 5.2 Existing Conditions Method

Existing conditions were established by following the assessment requirements for CHMPs.

### 5.2.1 Desktop Assessment

The purpose of a desktop assessment is to review information in a relevant geographic region including registered Aboriginal places and reports on the Victorian Aboriginal Heritage Register; history and ethnohistory; landforms and geomorphology, including geology, soils and environment; land use history and strategic values in order to formulate a site prediction statements and identify areas of archaeological potential to inform the subsequent fieldwork. The relevant geographic region in the assessment was defined as land within 20 kilometres of the approximate centre of the activity area (more detail is provided in Section 6.1.1).

In addition, La Trobe University was commissioned by the proponent to analyse LiDAR data collected for the project. The aim of the analysis was to identify anomalies in the data that may indicate the presence and location of mound sites so that they can be identified in any subsequent standard or complex assessment. The LiDAR analysis identified

numerous potential mounds in the activity area. This data was used to inform Phase 2 of the standard assessment conducted in 2025 and the complex assessment.

### 5.2.2 Standard Assessment (Ground Surface Survey)

The purpose of the standard assessment is to assess ground surfaces within the activity area, identify any obtrusive Aboriginal places and test the site prediction statements formulated in the desktop assessment.

Two phases of standard assessment were conducted. Phase 1 was conducted in 2019 based on v165 of the wind farm layout. Phase 2 was conducted in 2025 based on v183 of the wind farm layout.

### 5.2.3 Complex Assessment (Subsurface Excavation)

The purpose of the complex assessment is to investigate areas with archaeological potential identified during the standard assessment and the LiDAR analysis for potential mounds. Subsurface excavation aims to identify the likely impact of the project on the Aboriginal cultural heritage values in the project area. A complex assessment was conducted from 18 August to 12 September 2025.

### 5.2.4 Intangible Aboriginal Cultural Heritage

The intangible Aboriginal cultural heritage values for the project have been investigated through consultation with EMAC, the commissioning of a consultant to detail the engagement of the project with EMAC, and reports on fauna and flora to avoid impacts to Wedge-tailed eagles, bats and indigenous trees and plants.

## 5.3 Impact Assessment Method

The risk assessment process includes the planning phase, geotechnical and other pre-construction activities, construction phase, operations and maintenance phase, and decommissioning phase. It evaluates the environmental risk of the project based on the concept design, construction footprint and methodology; and existing conditions of the activity area. The primary impacts are those directly attributable to the project activities such as construction. Cumulative impact is the impacts of the project in addition to impacts from other projects in the region. Risk is analysed using pre-defined consequence and likelihood criteria to make a risk rating as follows:

**Table 3 Risk Assessment Matrix**

| | | | LIKELIHOOD | | | | |
|---|---|---|---|---|---|---|---|
| CONSEQUENCE | Risk Categories | | Rare | Unlikely | Possible | Likely | Almost Certain |
| | | | A | B | C | D | E |
| | Very High | 5 | Medium | High | High | Extreme | Extreme |
| | High | 4 | Medium | Medium | High | High | Extreme |
| | Moderate | 3 | Low | Medium | Medium | High | High |
| | Low | 2 | Negligible | Low | Low | Medium | Medium |
| | Negligible | 1 | Negligible | Negligible | Negligible | Low | Low |

Likelihood and consequence are considered in the following tables:

**Table 4 Likelihood Categories**

| LIKELIHOOD | | | | |
|---|---|---|---|---|
| Rare | Unlikely | Possible | Likely | Almost Certain |
| A | B | C | D | E |
| Less than once in 12 months<br>OR<br>5% chance of occurring | Once to twice in 12 months<br>OR<br>10% chance of occurring | 3 to 4 times in 12 months<br>OR<br>30% chance of occurring | 5 to 6 times in 12 months<br>OR<br>50% chance of occurring | More than 6 times in 12 months<br>OR<br>The event is expected to occur in most circumstances |
| The event may occur only in exceptional circumstances | The event could occur but is not expected | The event could occur | The event will probably occur in most circumstances | The event is expected to occur in most circumstances |

**Table 5 Consequence Criteria**

| CONSEQUENCES | | | | |
|---|---|---|---|---|
| Negligible | Low | Moderate | High | Very High |
| Tangible Aboriginal Places | | | | |
| Negligible impact to registered Aboriginal places. Aboriginal places remain intact or unaffected. No detectable cumulative impact. | Disturbance of previously disturbed registered Aboriginal places of low scientific significance, eg, isolated surface stone artefacts in a ploughed field. Cumulative impacts are minor. | Disturbance or partial removal of a small number (<5) of registered Aboriginal places with moderate scientific significance (eg, stone artefact scatter with relatively large number of stone artefacts). Disturbance or removal of several (>5) registered Aboriginal places with low scientific significance. Cumulative impacts require management. | Complete removal of several (>5) registered Aboriginal places with moderate or high scientific significance, (eg, large stratified artefact scatter, stratified middens, ancestral remains. Cumulative impacts require careful management | Complete removal of numerous (>15) registered Aboriginal places with moderate or high scientific significance. Cumulative impacts are substantial with widespread impacts. |
| Intangible Aboriginal Places and Intangible Aboriginal Cultural Heritage Values | | | | |
| Negligible impact to places and / or values. Places and / or values remain intact or unaffected. No detectable cumulative impact. | Disturbance has impacted places and / or values and is considered by the RAP to be of low consequence. Cumulative impacts are minor. | Disturbance or harm have impacted places and / or values and are considered by the RAP to be of moderate consequence. Cumulative impacts require management. | Disturbance or harm have substantially impacted places and / or values and are considered by the RAP to be of high consequence. Cumulative impacts require careful management. | Disturbance or harm to places and / or values is widespread and is considered by the RAP to be of very high consequence. Cumulative impacts are substantial with widespread impacts. |

## 5.4 Cumulative Impact Assessment

The archaeological cumulative impact of the project on registered Aboriginal places is assessed by estimating the known or permitted (likely) impacts on different Aboriginal place types in the geographic region based on the conditions in approved CHMPs. Typically, there are a number of sites in the geographic region which were recorded before CHMPs were required and there are no management requirements. In these instances, available evidence (eg aerial imagery) is used to determine whether sites have been destroyed or appear to be unharmed by a recent change in activity (eg, from farming to residential subdivision). The impact on Aboriginal places is assessed using the following criteria:

1. Total Harm Permitted. A CHMP has permitted harm to the entire Aboriginal place. Salvage may or may not be required.
2. Partial Harm Permitted. A CHMP has permitted harm to part of the Aboriginal place but part must be preserved. Salvage may or may not be required.
3. No Harm Permitted. A CHMP has not permitted harm to occur.

4. Salvage Required. A CHMP required archaeological salvage to manage harm and it has been or will be conducted.
5. No CHMP – Destroyed. There is no approved CHMP and the available evidence (eg aerial imagery) suggests that all known tangible components have been removed by a recent change in activity.
6. No CHMP – Unharmed. There is no approved CHMP and there is no available evidence (eg aerial imagery) to suggest that the Aboriginal place has been destroyed. It may still be impacted by historic and current land use (eg, stock trampling, ploughing).

The cultural and spiritual cumulative impact on registered Aboriginal places can only be assessed in consultation with the RAP. Typically, RAPs assign high cultural and spiritual significance to all Aboriginal places regardless of their scientific significance. EMAC has previously advised the proponent of their concern with the cumulative negative effects on tangible and intangible Aboriginal places of wind farm projects on Eastern Maar country (letter 15.11.2.24). For the purposes of this impact assessment, a rating of high cultural and spiritual significance is assumed for all tangible and intangible Aboriginal places in the activity area.

EMAC also advised the proponent of their concern with the cumulative negative effects on intangible Aboriginal cultural heritage values not considered under the CHMP process including culturally significant avifauna (eg Southern Bent Wing Bat & Wedge Tailed Eagle) and culturally significant flora including pre-colonial vegetation (letter 15.11.2024). For the purposes of this impact assessment, the cumulative effects rely upon the Flora and Fauna Assessment for the Hexham Wind Farm (Nature Advisory Appendix D Biodiversity and Habitat & Appendix D.1 Bat Impact Assessment). For the purposes of this impact assessment, a rating of high cultural and spiritual significance is assumed for all intangible Aboriginal cultural heritage values in the activity area.

# 6 EXISTING CONDITIONS

## 6.1 Desktop Assessment

### 6.1.1 Relevant Geographic Region

The activity area is within the Western Volcanic Plains geomorphic region comprising predominantly the plains with poorly developed drainage and shallow regolith unit (6.1.3) with a small component in the southeast of plains with low rises (6.2.4); and terraces, floodplains and lakes, swamps and lunettes (6.1.5). These geographic regions cover large areas; therefore, the relevant geographic region has been circumscribed to land within 20km of the approximate centre point of the activity area for the following reasons:

- The relevant geographic region contains a representative sample of all geomorphic and landform features relevant to the Aboriginal cultural heritage that may be present.
- The relevant geographic region contains a large enough sample to identify areas of archaeological potential.

### 6.1.2 Registered Aboriginal Places

There are 326 registered Aboriginal places (Table 6) in the geographic region including 114 (Table 7) in the activity area. These can be seen in Map 2.

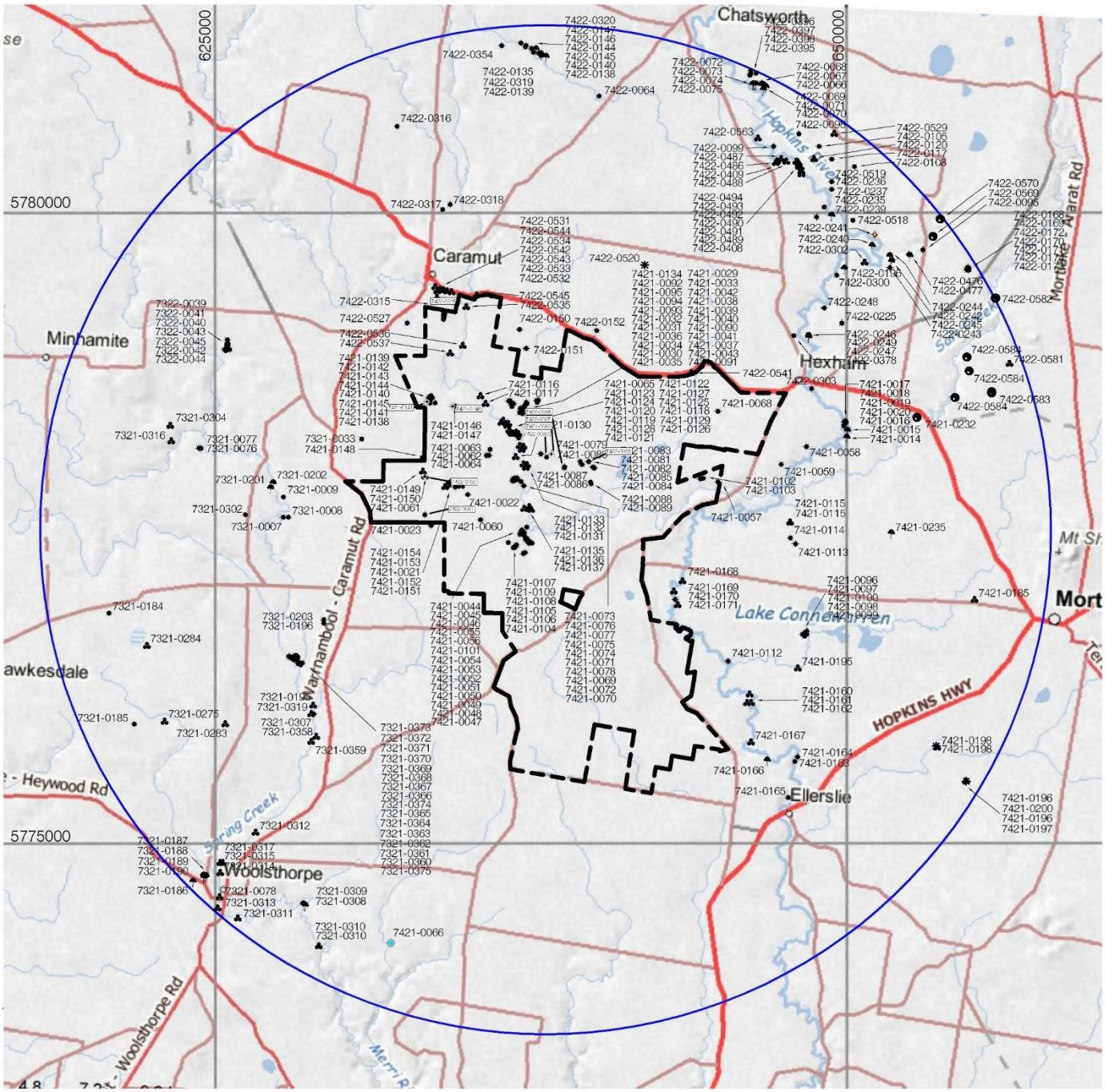
#### Place Types

In the geographic region, place types are dominated by mounds followed by artefact scatters and scarred trees. Other minor types include Aboriginal ancestral remains, Aboriginal cultural places, hearths, earth deposits and object collections.

**Table 6 Aboriginal Place Types in the Geographic Region**

| Place Type | Number | Percentage |
|---|---|---|
| Mound | 183 | 56.3 |
| Hearth | 1 | <1 |
| Soil deposit | 5 | 1.5 |
| Artefact scatter | 81 | 24.9 |
| Artefact scatter; mound | 1 | <1 |
| Artefact scatter; soil deposit | 1 | <1 |
| Artefact scatter; object collection | 1 | <1 |
| LDAD | 9 | 2.8 |
| Scarred tree | 37 | 11.3 |
| Scarred tree; object collection | 1 | <1 |
| Object collection | 3 | <1 |
| Aboriginal ancestral remains (burial) | 1 | <1 |
| Aboriginal cultural place | 1 | <1 |
| Stone Feature (stone arrangement) | 1 | <1 |
| Total | 326 | 100 |

The majority of places were recorded during the 1970s and 1980s (91%) with the remainder recorded during the 1990s, 2000s and 2010s (9%). Approximately 42% of places were recorded by Williams for her PhD project (see below Section 7.5). This shows that minimal archaeological investigation has been conducted in the geographic regions since the 1980s.




**Map 2 Activity Area, Registered Aboriginal Places and Relevant Geographic Region**

In the activity area, place-types are dominated by mounds followed by artefact scatters and one soil deposit (Table 7).

**Table 7 Aboriginal Place Types in the Project Area**

| Place Type | Number | Percentage |
|---|---|---|
| Mounds | 83 | 73 |
| Artefact Scatters | 30 | 26 |
| Soil Deposit | 1 | 1 |
| Total | 114 | 100 |

## Mounds

Mounds (n=184) comprise the majority of Aboriginal places in the geographic region and in the activity area. The last mound to be recorded was in 1994 (VAHR 7421-0170 [Hexham 3]).

### Mound Identification and Measurement

A review of some of the fieldwork notes supplied by Site Registry from the Phd research conducted by Williams (1985) indicates that some registered mounds may not be of Aboriginal origin but were rather gilgai. Gilgai are small mounds formed in poorly drained flat landscapes with shrink-swell clay soils and pronounced wet winters and hot dry summers (Speight 2009: 129-130). Williams (1982) re-recorded a number of sites (eg VAHR 7421-0029 to VAHR 7421-0057) in November 1982 which were originally recorded in June 1981. Williams (1982) made the following comments (paraphrased below):

- November 1982 was a period of severe drought with excellent exposure of mounds and their extents, in contrast to June 1981.
- Different criteria may have been used in 1982 for length, width and orientation of mounds.
- Some mounds had been ploughed after June 1981.
- Mound dimensions in 1981 were obtained by pacing. In 1982 they were measured with a tape.
- On the basis of the 1982 fieldwork, it was concluded that some sites which were recorded as mounds in 1981 were gilgai (eg, VAHR 7421-0038).

The above highlights the difficulties that can be encountered in the identification of mounds being of Aboriginal origin based on survey alone, unless there is clear evidence such as obvious, culturally derived soils, features and Aboriginal cultural material (eg stone artefacts).

### Mound Extent

The majority of mounds are up to 200m$^2$ in extent although mounds can be over 1,000m$^2$ with the largest recorded mound (VAHR 7421-0112 [Woolongoon 1]) measuring approximately 2,275m$^2$ (Chart 1). Mounds have an average and median extent of 198m$^2$ and 120m$^2$ respectively. The difference in the average and median extent can be attributed

to a number of very large mounds such as VAHR 7421-0112 which skew the distribution. The length of mounds varies from 5m to 115m with an average and median of 15.2m and 12m respectively

The implication of the mound extent data is that if no surface evidence of mounds can be detected during the standard assessment, then the intervals for any subsurface testing or auguring in areas of archaeological potential for mound sites should take these dimensions into account.

### Mound Relief

Data on the height of mounds is not always recorded on site cards. Data was available from 60 registered mounds (32.7%). Sometimes the height of the mound or depth of the dark (charcoal stained) deposit is recorded but not both. The maximum preserved height was 50cm. Mounds have an average and median height of 24cm and 22cm respectively. The majority of mounds have been disturbed by European land practices which is the likely cause of the majority of mounds no longer having any relief.

### Mounds and Waterways

Mounds have a relatively strong relationship with proximity to waterways (Chart 2). The majority of mounds (65%) are located within 300m of a waterway, although mounds can be found more than 1000m away. Larger mounds tend to be in closer proximity to waterways (Chart 3). All mounds larger than 500m$^2$ were located within 200m of waterways. For example, the largest recorded mound VAHR 7421-0112 is located 75m from the Hopkins River.

The implication of mound extent and proximity to waterways is that land within 300m of waterways are the most likely areas to contain mounds and any ground disturbance associated with the construction of the wind farm in these areas has the highest potential to disturb mounds.

### Mounds and Landform

The landform context is not always noted on site cards; however, the available evidence shows that that majority of mounds are recorded on low rises / undulations (65%) followed by plain / floodplain (32%). A total of 130 (71%) mounds recorded charcoal, burnt stone or clay lumps. One mound (VAHR 7422-0068 [Coolana 3]) recorded shell. At least 21 mounds have a stone artefact component recorded on the site card but only one mound is recorded on ACHRIS as having a stone artefact scatter component.

The implication of landform is that mounds can be found on a variety of landforms and proximity to waterways is a more significant determinant of mound location than landform.

### Disturbance and Condition of Mounds

Most mounds (55%) are recorded on site cards as highly disturbed. Agents of disturbance include stock trampling, ploughing, rabbit burrowing, deep ripping, soil removal, erosion and quarrying. Where condition is recorded, the majority are in very poor to fair condition

(92%) with the minority in good to excellent condition (8%). Scientific significance was generally not recorded on site cards.

**Chart 1 Mound Size**

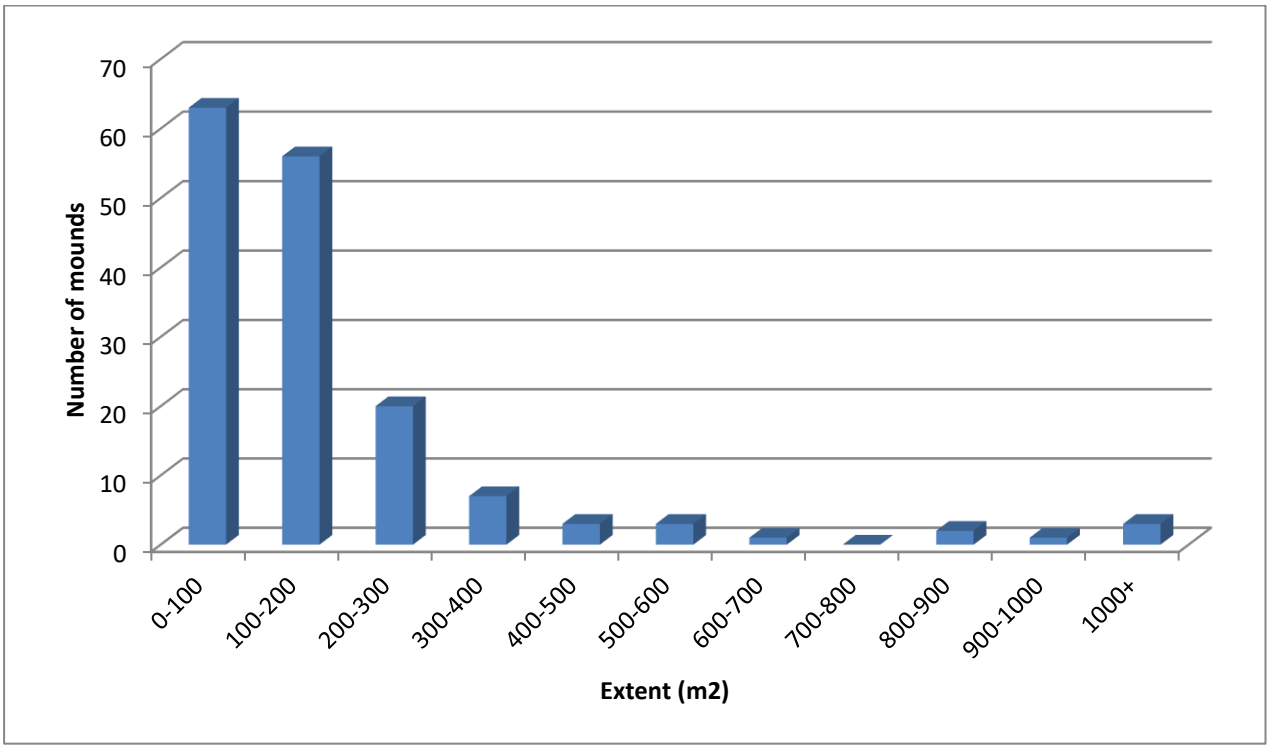



**Chart 2 Mounds and Distance from Nearest Waterway**

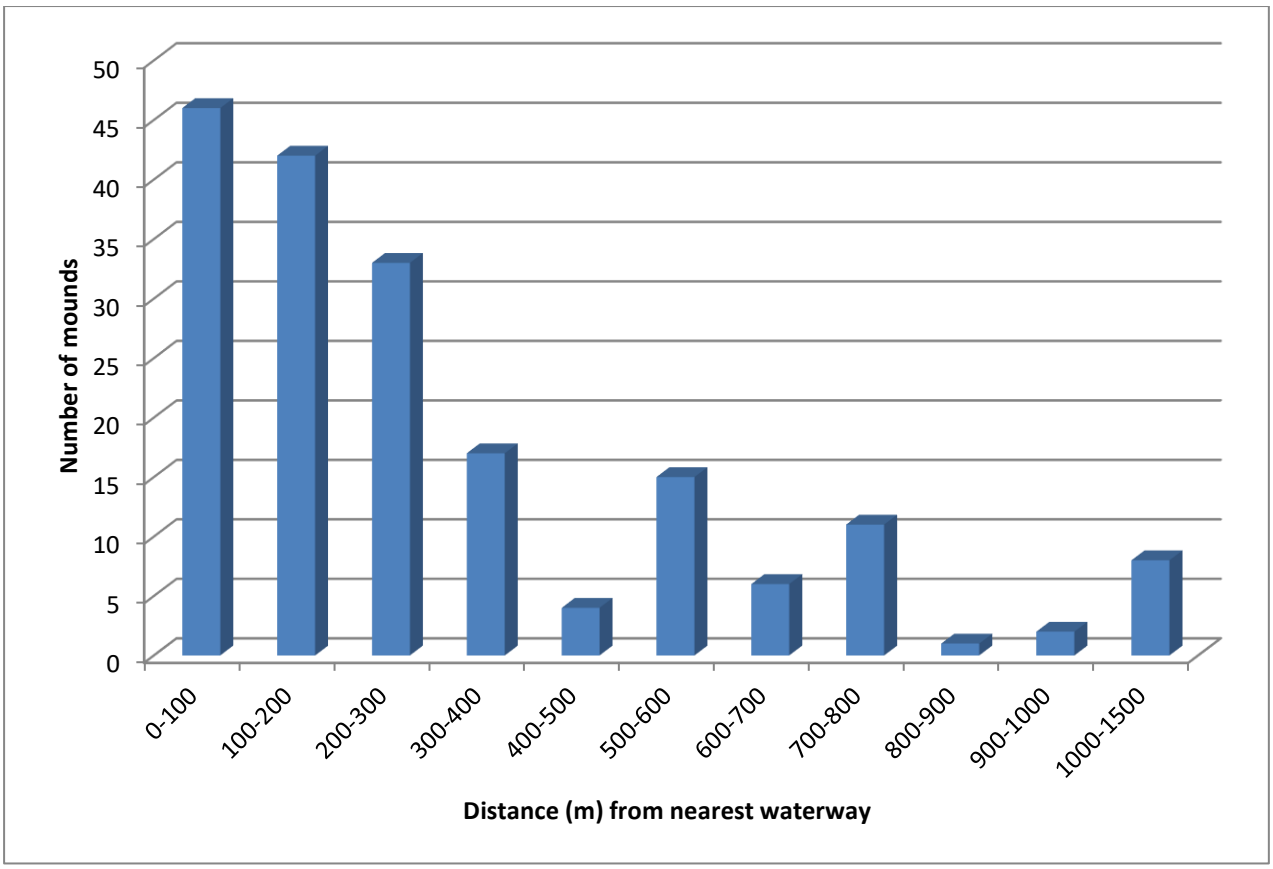
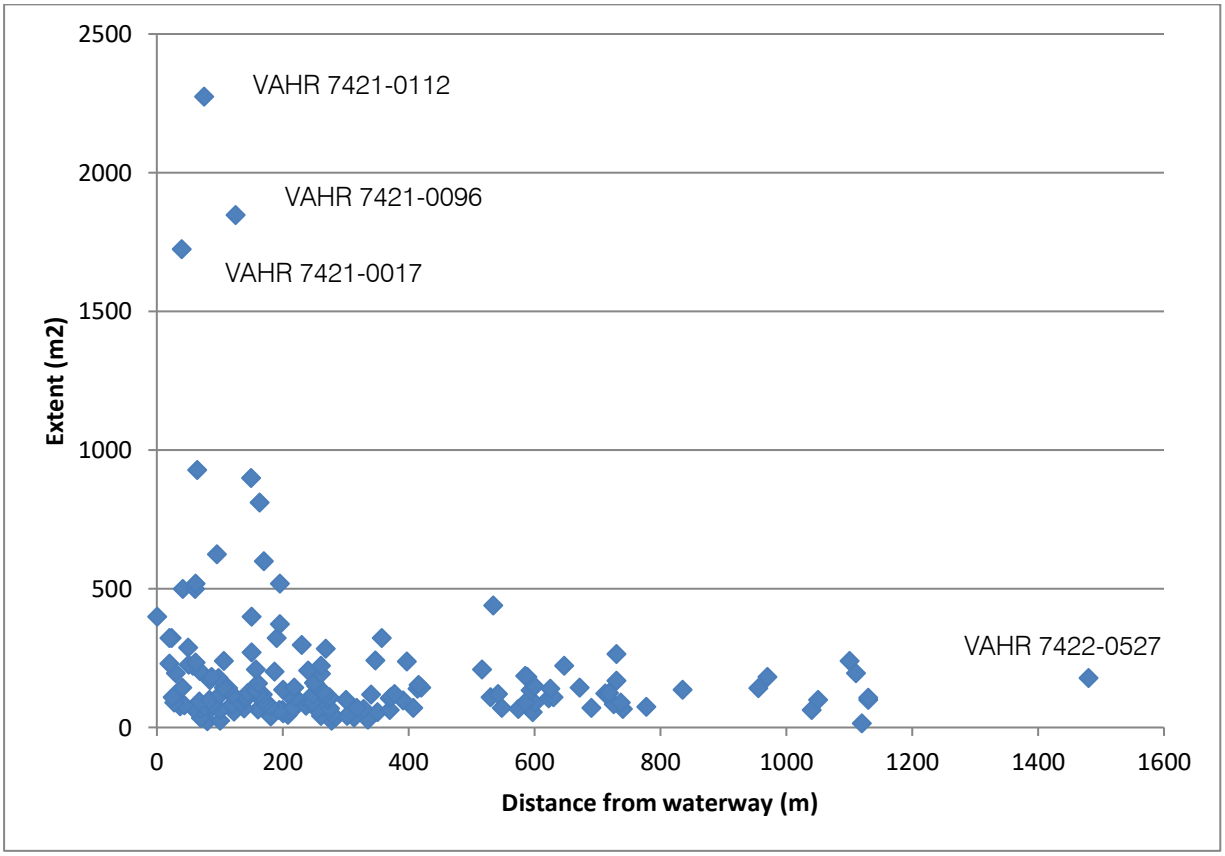


**Chart 3 Mound Extent and Distance from Waterway**




The implication of disturbance and conditions is that the majority of mounds were highly disturbed 40 years ago and have likely deteriorated further since then. This means that mounds will be harder to detect during any fieldwork assessment than they were 40 years ago. Some sites may now be effectively destroyed with little tangible evidence remaining.

## Stone Artefacts

A review of all site cards found that a total of 117 places have recorded stone artefacts; however, not all of these places have a formal artefact scatter component recorded on Site Registry. This situation is typically encountered at mound sites recorded in the 1970s and 1980s (eg VAHR 7422-0066 [Coolana 1]). Furthermore, many of the early artefact scatter registrations do not contain detailed artefact analyses so that numeric data for primary form and raw material cannot be collected and analysed.

**Chart 4 Artefact Scatters and Proximity to Waterways**

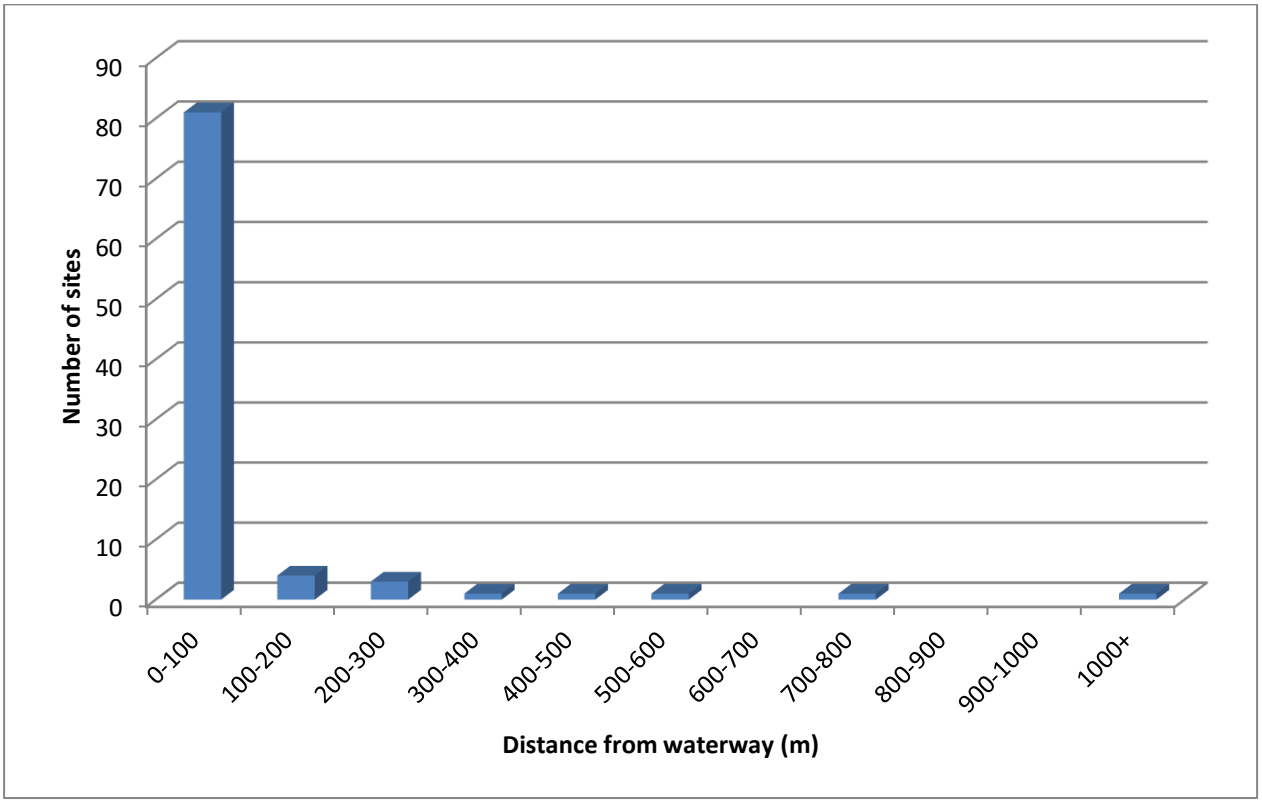
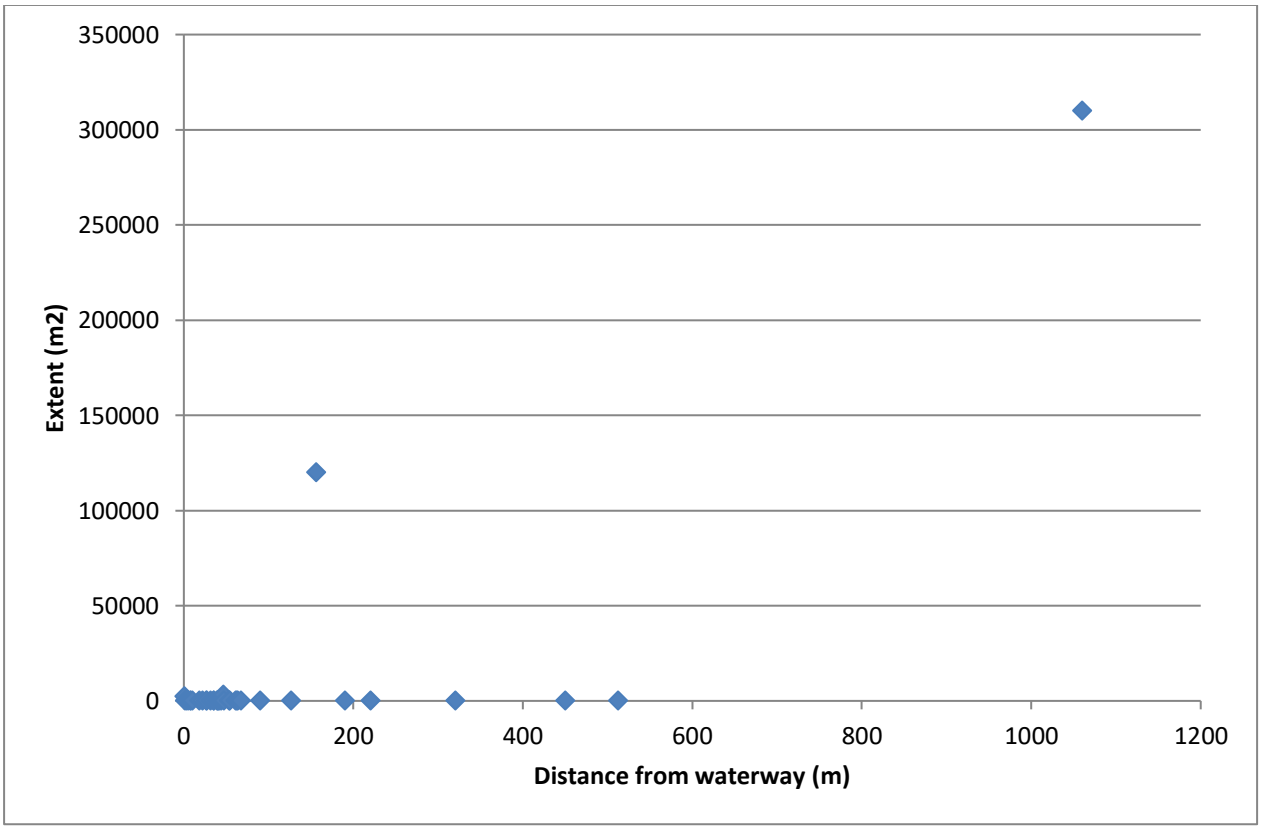



**Chart 5 Artefact Scatter Extent and Distance from Waterway**



### Stone Artefact Numbers and Densities

Artefact numbers are recorded for 71 sites. The majority record ten or fewer artefacts (87%) with only one site recording more than 100 artefacts (VAHR 7421-0196 [Stony Creek Tributary 1]). Sites have an average of 8.4 and median of 2.5 artefacts. Stone artefact density is known for 31 sites. Only one artefact scatter, VAHR 7422-0563 [Cooengle – 1], has a density above six artefacts per $m^2$. VAHR 7422-0563 had a density of 229 artefacts per $m^2$. This site is not in the current activity area. Such a high density is atypical in the geographic region and reflects the landform context of the site being situated on a sand dune / sandy rise. Sand dunes / rises are typically highly sensitive for Aboriginal cultural heritage and VAHR 7422-0563 is the only example investigated. Sand dune and lunette landforms in the activity area will not be impacted by the wind farm. Infrastructure is located more than 400m from any sand dune or lunette.

### Primary Form

Primary form is dominated by angular fragments (57%) followed by flakes (33%), cores (5%), blades (3%), tools (1%) and other (1%). Blades and tools are under-represented compared to other regions in Victoria. For example, the proportion of tools can range from 2% up to 21% (cf **Murphy & Rymer 2016**: 24, **Rymer in prep**: Section 7.4).

### Raw Material

Raw material is dominated by quartz (77%) followed by silcrete (12%) and other (11%) raw material types. Other raw materials are high variable and include quartzite, chert, flint, coastal flint, basalt, diorite, sandstone, obsidian, hornfels, greenstone and glass. These proportions are similar to other nearby geographic regions, for example, the proportions of raw materials in the geographic region in the Dundonnell Wind Farm transmission line CHMP 12394 where quartz (72%) dominated followed by silcrete (15%) (**Murphy & Rymer 2016**: 24, Chart 8).

Most sites (79%) have only one or two raw materials present. However, sites may have up to eight different raw materials present, for example, VAHR 7422-0563 [Cooengle – 1]. However, as noted previously this is an atypical site in the geographic region. Sites recorded in close proximity to the Hopkins River often have up to six raw material types (eg, VAHR 7422-0486 [Manifold Scatters 2] & VAHR 7422-0494 [Manifold Scatters 11]).

### Stone Artefact Depth

Only seven site cards note artefact depth with the maximum depth recorded at 60cm. However, most commonly artefacts are found with the typical maximum depth up to 30cm. Artefacts found to a maximum depth of 60cm were in a sandy profile at VAHR 7422-0563 [Cooengle-1] on a dune landform. This profile is not expected to be encountered during the assessment for this CHMP. Stone artefacts elsewhere were found in brown clayey silt or silty clay profiles.

### Proximity to Waterways

There is a strong relationship between artefact scatters and waterways (**Chart 4**) with the vast majority of stone artefact scatters (87%) recorded within 100m. However, this should

be considered with some caution because such a high percentage of sites within 100m of waterways likely reflects the bias of previous survey along waterways with a corresponding lack of survey on the plain. When proximity to waterways and site extent is considered, there appears to be no strong visual relationship between proximity to waterways and larger site extents (Chart 5). However, this data is affected by the small sample size because site extents were less often recorded in registrations prior to 2007 and a number of recent site extent registrations were defined on a landform basis (ie, VAHR 7422-0581 & VAHR 7422-0563) rather than by subsurface extent testing. In general, landform extent registrations tend to be larger than subsurface testing extent registrations.

### Landform

According to site cards, the majority of artefacts scatters were recorded on the floodplain (54%) followed by creek banks (33%) and far fewer on landforms such as the plain (5%), rises / ridges (4%), terrace/escarpments (2%), swales (<1%) and dunes (<1%). Again, this result likely reflects survey bias along waterways.

### Scientific Significance and Condition

Scientific significance is only recorded on seven site cards with four, two and one sites recorded as having low, moderate and low-moderate scientific significance respectively. Condition is more often recorded (n=34) with the majority assessed as being in very poor to poor condition (59%) followed by fair to good condition (41%).

### Scar Trees

Of the 33 recorded scarred trees only 11 have their species recorded. Of these, the majority are Red Gums (n=10) and one Gum. Typically the scarred trees were dead (61%) with the remaining in fair to good health (39%). Scar condition was not recorded on most site cards. When recorded, the majority of scars were in fair to good condition (n=9) with the remainder in poor condition (n=3). Scar function and cultural status (ie whether or not the scar was of Aboriginal rather than natural origin) was typically not recorded. Most scarred trees are situated on the plain within proximity to named waterways (eg, Hopkins River, Lime Creek, Salt Creek) and swamps. No Aboriginal scar trees are recorded within the activity area.

### Stone Arrangements

VAHR 7422-0530 [Caramut 1] was recorded by Kennedy in 1983. A line of basalt boulder stones was recorded in a U-shape with an opening to the east in a very shallow tributary of the Hopkins River approximately 11km north of the activity area.

### Aboriginal Ancestral Remains

Aboriginal ancestral remains site VAHR 7422-0241 [C. Manifold 7] was recorded by Spark in 1975. The remains were recorded approximately 270m east of the Hopkins River, northeast of the bridge and southeast of the Manifold house. The find is an historical one. The notes on the site card read: "*This Burial Ground was known by the early generation of Manifolds. Having dug up a skeleton then re buried it elsewhere. For details enquire local residents and owners of property.*"

## Aboriginal Cultural Places

Aboriginal cultural place VAHR 7421-0066 [Good 1] was recorded in 1981 by Fullagar, Upcher and Yunupingu. The site card only notes that the area was supposed to have been an initiation area. Aboriginal cultural place VAHR 7422-0581 [Boorug & Mondilibi Landscape Ridge] is associated with a stone artefact scatter and was recorded by Mullaney in 2017 for CHMP 12658 which is yet to be approved. The ridge is considered to be connected to the Dreaming story where the magician Murkupang created the surrounding landscape.

## Historical References

There are eleven historic references with two in the activity area (Table 8).

- Mustons Creek Village (4.1-24) is recorded on ACHRIS along Mustons Creek at the confluence of a drainage line that has been dammed. There are no mounds recorded within 700m of the location; however, clusters of mounds are recorded 1,000m to the north and south. A description of the village is cited in Section 7.6.
- 'Warndaa' Gully Massacre (8.1-21) is recorded on ACHRIS on the southern bank of Mustons Creek. Dawson (1981 [1881]: xxxiii) reports that 'Warndaa' Gully was a boggy gully two or three miles (approximately 4.8km) west of Merrang House and the scene of a massacre of Aborigines in 1842. This massacre is also known as the Boggy Gully Massacre. If the currently recorded location is accurate, it is located approximately 1.3km east of a cluster of approximately 20 mounds south of Mustons Creek approximately half the way to the reported location of Mustons Creek Village.

The following historic references are within 500m of the activity area:

- Mirraewuae Marsh Meeting Place (12.2-9) is recorded immediately to the west of the activity area and 1.5km from Mustons Creek. Between the swamp and Mustons Creek is a cluster of registered mounds. Mirraewuae Marsh is called Black Swamp by Dawson (1881) who notes this area was where intertribal meetings occurred with clans from the *Djab wurrung*, the northern *Dhauwurd wurrung*, *Girai wurrung* and *Wada wurrung*. They conducted ceremonies and hunted together. The marsh was known for emu and other game.

- Merrang Station (1.2-47) is located immediately to the east of the activity area along Hopkins River. It is a place where Aboriginal people were known to have worked. In 1856 Robert Hood, who owned the Bolac Plains run, purchased Merrang from the Trustees of his late father-in-law, Adolphus Sceales (Merrang Homestead H0322, VHD 2019. According to Critchett (1998: 83) Collin Merang or Hood was born around 1836 and was the son of King Blackwood and Mary of the Tjapwurong tribe on the Hopkins River. From the late 1850s Collin Hood worked on the Merrang Run. Aboriginal men were employed at Merrang to do gardening, hay-making, shepherding, shearing, digging potatoes and cutting thistles. Jeanie Farie, an Aboriginal lady, worked inside the house.

**Table 8 Historic References in the Geographic Region**

| Historical Reference Id | Historical Reference Name | Historical Reference Association | Period of Association |
|---|---|---|---|
| 1.2-47 | Merrang Station | 1.2 Properties where people are known to have worked | Not stated |
| 12.2-14 | Kuunawarn Camping Place | 12.1 Pre-contact food resources/areas where people continued to procure food (swamps, fish weirs) | Not stated |
| 12.2-15 | Wuurong Yaering Camp | 12.1 Pre-contact food resources/areas where people continued to procure food (swamps, fish weirs) | Not stated |
| 12.2-9 | Mirraewuae Marsh Meeting Place | 12.1 Pre-contact food resources/areas where people continued to procure food (swamps, fish weirs) | Not stated |
| 4.1-11 | Polo Hill and Flats Camps | 4.1 Living camps away from towns & properties | Not stated |
| *4.1-24* | *Mustons Creek Village* | *12.2 Camp sites/meeting places* | *Not stated* |
| 5.4-11 | Mount Shadwell Station, Honorary Correspondent Depot | 1.2 Properties where people are known to have worked | 1861-01-01 to 1869-12-31 |
| 5.7-6 | Hexham School | 5.7 Schools | Not stated |
| *8.1-21* | *`Warndaa' Gully Massacre* | *8.1 Places where Aboriginal people were killed / assaulted / threatened by Europeans* | *1842-01-01 to 1842-12-31* |
| 8.1-22 | Yuum Kuurtakk Lagoon Massacre | 8.1 Places where Aboriginal people were killed / assaulted / threatened by Europeans | |
| 8.1-35 | Muston Creek (Lubra Creek) Massacre | 12.9 Named place | Not stated |

### Other Place Types

Earth features (soil deposits & hearths) have been considered in this report under artefact scatters as they all have a stone artefact component. Hearth VAHR 7422-0477 [Jubb 2] was recorded in 1980 by Coutts.

VAHR 7422-0520 ['Wama Collection'] is a small collection of three stone tools collected from a rise on the margins of 'North Marsh' by the landowner. The collection was recorded in 1981 by Williams.

## 6.1.3 Reports and Published Works

### Regional Investigations

ACHRIS lists several regional or large scale investigations (**Presland 1981**; **Coutts 1977**, **1985**; **Coutts et al 1977abc**; **McConnell, Buckley & Wickman 2002ab**; **Lane 2008**; **Williams1984**, **1985**) and several literature references (**Mulvaney 1964**; **McBryde 1979**; **Bird & Frankel 1991ab**; **Lane & Fullager 1980**; **Presland 1977ab**, **1980**; **Massola 1968**). The

research by Williams (1984, 1985) is discussed below under activity area specific investigations. Of the other reports, only the most relevant to the current activity area are discussed.

Coutts et al (1977a) prepared an interim report as part of an on-going research project investigating archaeological sites in the Western District of Victoria. The regional study area comprised three map sheets: Warrnambool (7321), Willaura (7422) and Ararat (7423); however, the report only detailed the results of a survey of the Willaura 1:100 000 map sheet but also included the results of the excavation of two mound sites. The survey was conducted between August 1973 and December 1975. Sites were located using literary sources, interviewing landholders and local persons claiming knowledge of Aboriginal sites and surveying properties. The location of all sites was recorded regardless of preservation (p11). A total of 207 mounds were identified. Mound data was subjected to statistical analysis based on mound typology and location (p11).

In addition, two mounds sites were excavated: VAHR 7422-0006 [FM/1] and 7422-0084 [KP/1]:

- VAHR 7422-0006 [FM/1]: a total area of 8m$^2$ was excavated. Evidence indicated cooking, the manufacture of stone tools, the dumping of refuse and the burial of humans was conducted .Two rock structures were identified and considered likely to have been fireplaces (p22). At least three burials were identified. Other human bones indicated that other burials were present in the mound. One individual was a male aged 25 to 28 whose body was in a flexed position on his side with the left arm folded across the body with the hand under the mandible (p22). The burial was associated with freshwater mussel shells, bandicoot mandibles, other animal bones, backed blades and bones from a child. The second burial was a woman aged 45 to 50 and the third a man aged 25 to 28 buried in a flexed position. The burials were fragmentary and in poorer condition (pp22-23).
- At VAHR 7422-0084 [KP/1] a total area of 22m$^2$ was excavated comprising a cross-section of the mound. Evidence suggested different areas of the mound were used for specific functions (p24). Several rock arrangements were exposed. Stones were arranged in a hearth-like manner and were burnt with darker greasier sediments and charcoal inside the feature. An oven like feature subsequently filled with stones was also identified. Three burials were found consisting of a 45 to 50 year old woman in a flexed position; a young female child and a male child. Three flaking floors of quartz artefacts were found (p26).

Both sites were badly disturbed by rabbits. Emu egg and freshwater mussel shell, human and animal bone including broken bone tools; stone artefacts, charcoal and organic material were recovered from both sites. Broken bone tools were identified at both sites.

The stone artefacts were made primarily from quartz (~80%) (p27). Other raw materials included quartzite, diorite (greenstone), chert, silcrete, flint and volcanic glass. Quartz was locally available while the other raw materials were from greater distances. However, only 20% of the tools at VAHR 7422-0006 [FM/1] were quartz. A total of 25% of tools were made from quartzite. There was a similar trend at VAHR 7422-0084 [KP/1] except quartz tools comprised 42%. The percentage of finished tools was low: 6% at VAHR 7422-0006 [FM/1] and <1% at VAHR 7422-0084 [KP/1]. Most tools were utilised but did not have

retouch (p30). Tools included utilitarian (expedient) flake and blade tools; backed blades (geometric microliths & bondi points), thumbnail scrapers, fabricators and burins (p31).

Fauna included marine mussel, freshwater mussel, yabbie, snake, lizard, turtle, emu, other large birds, quoll, barred bandicoot, wallaby, kangaroo, native rat, dingo and rabbit (p34). Bone preservation was poor and fragmentary. Nearly all the bone (at least 90%) was burnt. The fragmentation of bone was considered to be the result of cultural activities, including the use of bones as fuel. They indicated general living at a base camp.

The major conclusions from the investigation that are relevant to the current CHMP include:

- Mounds can rapidly deflate during dry periods and by cattle trampling (p11).
- Of the 207 mounds recorded, 60% had a diameter between 2m and 20m with 40% of those had a diameter between 5m and 10m diameter (p19).
- More than 60% of mounds were in poor or worse condition (p19).
- Mound distribution was intimately related to drainage systems including creeks, rivers, lakes and land subject to inundation. The Hopkins River and Salt Creek were particularly important (p12).
- A greater percentage of mounds were located in woodland rather than grassland however, access to other biotic communities was important (p12). Evidence suggested savannah woodland was most favoured (p12).
- Mound groupings are dependent on the wider environmental setting including the proximity of woodland, grassland, quarries, lakes, etc (p12).
- Mound grouping analysis based on radius intervals of 200m, 500m and 1,000m around each mound found that there was a tendency for mounds to be grouped in twos and threes rather than fives and sixes (p13).
- Environmental reconstruction and mound distribution demonstrated that mound location was associated with a variety of biotic communities rather than immediately adjacent to individual highly productive resources.
- The stone assemblage was more characteristic of general camp-site behaviour rather than specialist activity sites.

The authors concluded that (Coutts et al 1977a: 43):

> It is difficult to delineate the primary activities represented within mound sites. Indeed, the presence of stone knapping, stone structures, bone tools and human burials suggest a diversified range of activities. Food preparation and cooking activities are also suggested by the presence of bone fragments and ash-filled pits. Although the evidence is incomplete, the sites do not appear to be function-specific, and it is suggested that most of the larger mound sites represent seasonal base camps – that is, living areas. Additional support for this assumption is their location, since they are frequently sited close to sources of water, and in ecological settings where several biotic communities containing diverse flora and fauna could have been efficiently exploited.

Coutts et al (1977b; see also Coutts et al 1977c) presented the results of excavation and survey in the Western Districts conducted by Victoria by the Victoria Archaeological Survey along with ethno-historical data to document the effect of colonisation on Aboriginal society. The discussion was based around three periods: the pre-contact period terminating around 1800 AD, the contact period from 1800 to 1834 and the post contact

period after 1834. Data from several excavations was summarised including six mounds, three rock shelters, one stone house and three open sites comprising one large open site in sand dunes beside the Hopkins River, one on a lunette and another in a sandy soil profile.

Of most relevance to the current investigation was the authors conclusions in relation to mound sites (pp196-197):

- Mounds were subject to radiocarbon dating with dates ranging from 640±95BP (SUA-572) at site CH/1 to 7440±145BP (SUA-536) at site KP/1.
- Mound sites tend to cluster along major drainage systems and a variety of biotic communities.
- The animal remains imply the exploitation of a wide range of resources.
- Stone artefacts were made mainly from quartz and diorite. Formal tool types were rare and made predominantly from imported fine-grained raw materials.
- Formal tools included backed blades, thumbnail scrapers, fabricators and hammerstones.
- Mounds were places for general rather than specific purposes. This was attested by the nature of the stone artefacts, the presence of very large pits and small pits used for hearths and ovens; the presence of human burials; a wide variety and high fragmentation rates of faunal remains; and the presence of stratigraphic 'laminations'.
- Mounds did not appear to have been occupied until most of the soil had been deposited. Mounds were subsequently added to by the accumulation of occupation debris.
- No clear evidence of shelters on mounds was found.
- Mounds may have been used as refuges in times of flood; however, mounds occur in a range of situations many of which were not subject to flooding.
- Mounds had an average surface area of 150m$^2$.
- It was estimated that the average mound could accommodate between 30 to 75 people.

Coutts (1977) reported on the summer field programme of the Victoria Archaeological Survey conducted between 1975 and 1977. A survey in the Willaura, Portland, Coleraine, Warrnambool and Mortlake map sheets recorded a total of 308 sites as follows (p7, Table 2):

- Willaura (7422): 5 mounds, 1 quarry, 2 surface sites
- Portland (7221): 27 mounds, 34 stone houses, 8 weirs / fish traps
- Coleraine (7222): 121 mounds, 15 stone houses, 1 surface site
- Warrnambool (7321): 31 mounds, 32 coastal middens, 4 burial sites, 1 cave / rock shelter, 22 surface sites
- Mortlake (7421): 3 mounds, 1 cave / rock shelter

Coutts noted the following:

- New stone house sites and associated structures were located on the margins of a large swamp near Macarthur and associated with 121 mound sites (Kinghorn sites). Many of the mounds occur in cluster, some in unploughed paddocks and

in a reasonable state of preservation (p8). A series of test pits (1m x 1m) were excavated but not reported on in detail (p14)

- At Lake Condah were a large series of well-preserved fish traps, dry stone walls, stone arrangements and stone houses demonstrated that the Aboriginal people had a detailed knowledge of hydrodynamics and were able to use flood levels for fishing (p8).
- Two major excavations were conducted at Thunder Point near Warrnambool and at Graigs near Yambuk.
- In the Warrnambool area the survey confirmed that many sites had been ploughed and few sites were intact.

Coutts (1985) prepared a manuscript presenting the results of the work in the 1970s of the Victorian Archaeological Survey in the Western District of Victoria. The study area comprised three parts: the Ararat area, the Willaura area and the Warrnambool area. A detailed review of ethno-historical information was used to understand the nature of mound sites including their size, contents, function, condition, location, distribution, relationship to resources and water, and wider association with Aboriginal behaviour (pp93ff). The information was used to inform the subsequent survey and analysis of recorded sites. The salient points were:

- Already by the end of the 19th century, mounds were severely damaged by rabbits and stock trampling resulting in the deflation or destruction of mounds.
- Various functions attributed to mounds included ovens or cooking sites, camping places, house site and burial places.
- Mound contents included layers of ash, charred wood, debris of old dwellings, fire pits, human and animal bone, stone artefacts including axes and grind stones, emu egg shell, freshwater mussel and stone arrangements.
- Mounds were up to 36m in length and 2m in height.
- Mounds were located on elevated and low-lying landscapes, exposed and sheltered positons on the margins or rivers, lakes and swamp, and along the margins of timber and grassland vegetation communities.
- Explanations offered for mound site location included proximity to water, fuel, food resources and soil type.
- 19th century observers noted that mounds could occur in clusters of up to 20 mounds.

Of greatest relevance to the current investigation is the Willaura (7422) area. The study area comprised approximately 250,000 hectares, of which more than 70% was volcanic plain. The reliability of the water flow in the Hopkins River, the major drainage system, was deemed critical for its effect on Aboriginal settlement patterns, in particular, with drought drying up tributaries and the Hopkins River likely becoming a series of waterholes (pp61-62). It was noted that the land is almost entirely freehold and used for pastoralism and cropping. Land use has been intense and has destroyed or damaged many Aboriginal sites (p69). A total of 530 (or 535 cf text & Table 18) sites were located (p173 & Table 18) including mounds (n=230), lithic scatters (n=117), scarred trees (n=125), burials (n=3), quarries (n=9), axe grind grooves (n=1), fish traps (n=3), fireplaces (n=12), stone arrangements (n=3), isolated artefacts (n=22). All sites were considered to date within the last 5,000 years BP apart from VAHR 7421-0001 [Lake Bolac Site 2].

The salient points of the results and analysis in relation to mounds are as follows:

- The majority of mounds were in a poor state of preservation with only 8.8% in a good state of preservation. Most mounds had been disturbed by rabbits and ploughing (p189).
- Mounds ranged in diameter between 5m and 50m with the highest percentage between 5m and 10m (p189).
- Mounds ranged in height from 10cm to 80cm with the majority between 20cm and 30cm (p189).
- 40% of mounds were located on hillocks or rises with good vantage of the surrounding area. At least 14% were situated on low-lying land with poor drainage (p192).
- 75% of mounds were situated more than 200m from perennial or reliable waterways with 25% within 200m. However, the density of mounds within 200m was higher which indicated a preference for proximity to water sources (p192).
- Analysis of proximity of mounds to vegetation suggests that mound location was preferred for savannah woodland rather than grassland. Since most mounds were located nearest to intermittent creeks, this suggested the occupation of mounds was likely seasonal (p194).
- Clustering analysis confirmed the earlier conclusions by Coutts et al (1977).
    - Based on a 200m radius around mounds, 66% of mounds occur singularly and there were 27 mound clusters, eleven of which comprised two mounds only. Since most mounds were small, this suggested occupation by families or band sized groups.
    - Larger mound clusters or linear arrangements of mounds were located in areas with a diverse range of resources. The mounds tended to be larger and indicated that the areas were more frequently visiting by family or larger groups (p196).
    - Isolated mounds were typically of intermediate size with some large mounds throughout the wetlands. This may suggest that large mounds were favoured locations for families with small sites located where resources were less reliable (p199).
- Mounds had the following attributes (p201ff):
    - Mounds typically had two layers: an upper horizon of black soils impregnated with charcoal which may or may not contain artefacts; and a lower horizon similar to the surrounding natural soils. Larger mounds typical have more complex stratigraphy and a thicker upper horizon.
    - Artefacts are more visible and higher density on larger mounds. Smaller mounds often only have few or no artefacts.
    - Stone material included black chert from Mt Staveley, grey coastal flint, local greenstone from Hopkins River outcrops, several different coloured chert and basalt. Stone axes were found on several sites, including blanks, suggesting axes were manufactured locally. Other artefact types included backed blades, grindstones, hammerstone, anvils, scrapers and burnt hearth stones. The stone assemblage indicated that larger mounds at least were occupation sites where stone tool manufacture occurred along with economic activities (eg food processing).
    - Many larger mounds were associated with small fragments of fresh water mussel, emu egg shell and bone fragments (the latter being rarer), again suggesting occupation sites.

  - Landholders suggested that the larger mounds were associated with human burials with the human remains having been removed from time to time by land owners.
  - Mounds likely date from 5,000 to 200 years BP based on association with current landscape features, stone artefact types and lack of European artefacts.
  - Larger mounds could have been produced by a number of means including pre-mounding before occupation, occupation over a longer period of time, more frequent occupation, or occupation by larger groups (p332)
- A site prediction for mounds was presented as follows (p200):
  - In areas associated with reliable seasonal food resources for small groups, possibly at the family level, large single sites are most likely to be present.
  - In areas associated with reliable seasonal food resources for small groups, but which sometimes had exceptional seasons, several families or bands could camp, one large site and several smaller sites are most likely to be present.
  - In areas associated with reliable seasonal resources for several families or bands, large mounds often in clusters in close proximity to each other are most likely to be present.
  - In areas associated with intermittent resources highly dependent on rain or other factors, or where resources were ephemeral, small and intermediate sites occurring in isolation or in clusters probably by family groups are most likely to be present.

In relation to stone artefact scatters, Coutts noted that (p203ff):

- The majority of artefact scatters are found in proximity to waterways. Many were found in dune blowouts around swamp and lakes, in particular, larger scatters, on the terraces adjacent to Hopkins River and its tributaries, or on alluvial sediments along the Hopkins River. There is a very strong preference for sandy landforms adjacent to these waterways.
- Artefact scatters clusters are associated with the most reliable rivers and wetlands.
- Large artefact scatters are adjacent to the most reliable waterways.
- Artefact scatter contents vary, but mostly comprise stone artefacts only. A small number contain fresh water shellfish, charcoal, European objects and emu egg shell.
- Several very large sites, including at Lake Bolac, have been known since the 19$^{th}$ century and have been subject to surface collection by the general public. These sites have contained a wide range of materials and human burials. Some raw materials have likely come from as far as the Grampians and the coast. Tools have included backed blades, hammerstones, anvils, grindstones, pestles, axes, scrapers and cores.
- Large artefact scatters were regular camp sites where a wide range of activities were conducted. Small sites reflect intermittent and opportunist occupation around seasonal availability of resources.
- Artefact scatters likely date to within the last 5,000 years BP based on stone tool morphology

In regards to the relationship between mounds and artefact scatters Coutts noted that (p217):

- Artefact scatter distribution was similar to mound distribution patterns, that is, they were found in the same localities but were slightly displaced. However, the larger lithic scatters were located in sandy and well drained environments often in direct association with rivers, creeks, swamps or lakes; while the larger mounds were often located on high points of the landscape on buckshot soils.
- Mounds were probably occupied from late autumn to early spring while the large lithic sites were occupied mainly during autumn and summer. Evidence for mounds not being occupied in summer were:
- Many mounds were located some distance from perennial water sources which would have been available during winter but not in summer.
- Many mounds were in exposed positions and in summer would have been subject to prevailing hot northerly winds.
- Mounds in prominent positions on rises would had good vantage over the local area.
- During the height of summer, camp sites on the alluvial flats with the river red gums would have provided relief from the sun and wind.

Coutts (1985: 219-228) also discussed scarred trees, stone arrangements, quarries and axe grinding grooves. He noted that diorite quarries were found along the Hopkins River from Glen Thompson toward Ararat and are associated with small chert outcrops.

Coutts (pp321-3) analysed the site location distributions and argued for a point-to-point semi-sedentary settlement pattern where there was relatively intensive exploitation of favourable locations at spacing intervals at distances less than the generalised hunter-gatherer radius of 10km.

Williams (1985) investigated mounds for her PhD Dissertation. Three areas were selected: Caramut, Bessiebelle and Mount William with the former location along Mustons Creek being within the current activity area. She confirmed that mounds appear relatively late in the archaeological record, after 2,500 BP and after the introduction of the Australian Small Tool Tradition (ASTT) (see also p 312, Figure 10.1). She argues that mounds were linked to a sequence of changes such as the re-organisation of camps and the use of labour, and a more long-term occupation of 'settlements'. Williams (1985: 110) contended that a cluster of mounds might represent an integrated settlement if radiocarbon dates could show that individual mounds were occupied concurrently. There was insufficient information to link the change to a causal prime mover such as population pressure or shifts in alliance networks. However, both were considered likely to be causes along with a change in environmental conditions to a wetter climate from 2,000 BP which resulted had in new swamps, marshes and meadows in depressions and the waterlogging of soils (Williams 1985: 316). Williams argues for a greater acknowledgement of climatic factors to explain the introduction of mounds.

Mounds ranged in size from 3 to 30m in diameter (cf above Section 7.4) and could occur singly or in clusters of up to 30 mounds. Previously, a variety of functions were attributed to mounds including hut foundations, specialised cooking ovens and general campsites. Ethnohistorically, Caramut mounds were linked to Aboriginal village sites; Bessiebelle mounds to the margins of swamps close to villages (stone circles); and Mount William

mounds to ovens and camping areas associated with large ditch fish trap systems (p 4). Williams (1985: 20-23) was able to document and assess the damage to mound sites using historical information and fieldwork. Mounds were damaged by rabbit burrows, ploughing, stock trampling, cuttings for drains, roads and fences, and wind erosion. Larger mounds were commonly located to swamp outlets.

Historical accounts contend that burials associated with mounds were intrusive features and were not associated with their primary use (p 25). Other noted attributes of mounds included stones layers of ash, red and black earth; burnt earth and stones; old fires or hearths; stone tools including axes, grindstone and stone tools; fragments of emu egg shell; and possum and kangaroo bone.

In the Caramut area, Williams investigated clusters of mounds considered to represent semi-permanent settlements. These clusters were typically situated at the confluence of watercourses. The cluster selected for excavation was situated at the junction of Spring and McArthur Creeks, and was located on top of a flat-topped rise overlooking a large permanent waterhole (p116). Excavations exposed the possible foundations of a dwelling which dated to the modern period (pp128-132). The cluster did not appear to have been occupied as an integrated settlement prior to 400BP (pp142-143). Excavations also demonstrated that mounds were used as hut foundations, camping places and activity areas, rather than specialised baking ovens. At mound clusters, cooking and baking activities were conducted off-mound (Williams 1985: 195).

Williams (1985: 326, 329) concluded that significant changes were visible after 2,500 BP and that:

> These involve changes in site types, site numbers, settlement patterns, organisation of camps and possible a shift to sedentism. … The evidence suggests that very localised changes were taking place in southeastern Australia during the late Holocene and in some localities … there is evidence that Aboriginal societies were undergoing dramatic and significant changes during the late Holocene.

Schell (1995) conducted a survey of the Hopkins River. The survey consisted of four separate areas. Two of these were located in the geographic region but outside the activity area at Hexham and Ellerslie. The site prediction model identified scarred trees, mounds, eel traps and artefact scatters as the most likely site types to be present although many may have been destroyed or disturbed by land clearing, stock grazing, rabbit burrowing and erosion (p15). No mounds were recorded during the survey. At Hexham and Ellerslie artefact scatters and one Aboriginal scar tree were identified but no eel traps. All of the eel traps were recorded in the Framlingham area. Although variation in ground surface visibility and survey strategy were considered to have affected the recording of different site types in each survey area, the differences in site type distribution was thought to reflect the way Aboriginal people used available resources. The absence of mounds was considered surprising and was attributed to poor surface visibility and the focus of the survey along the river banks.

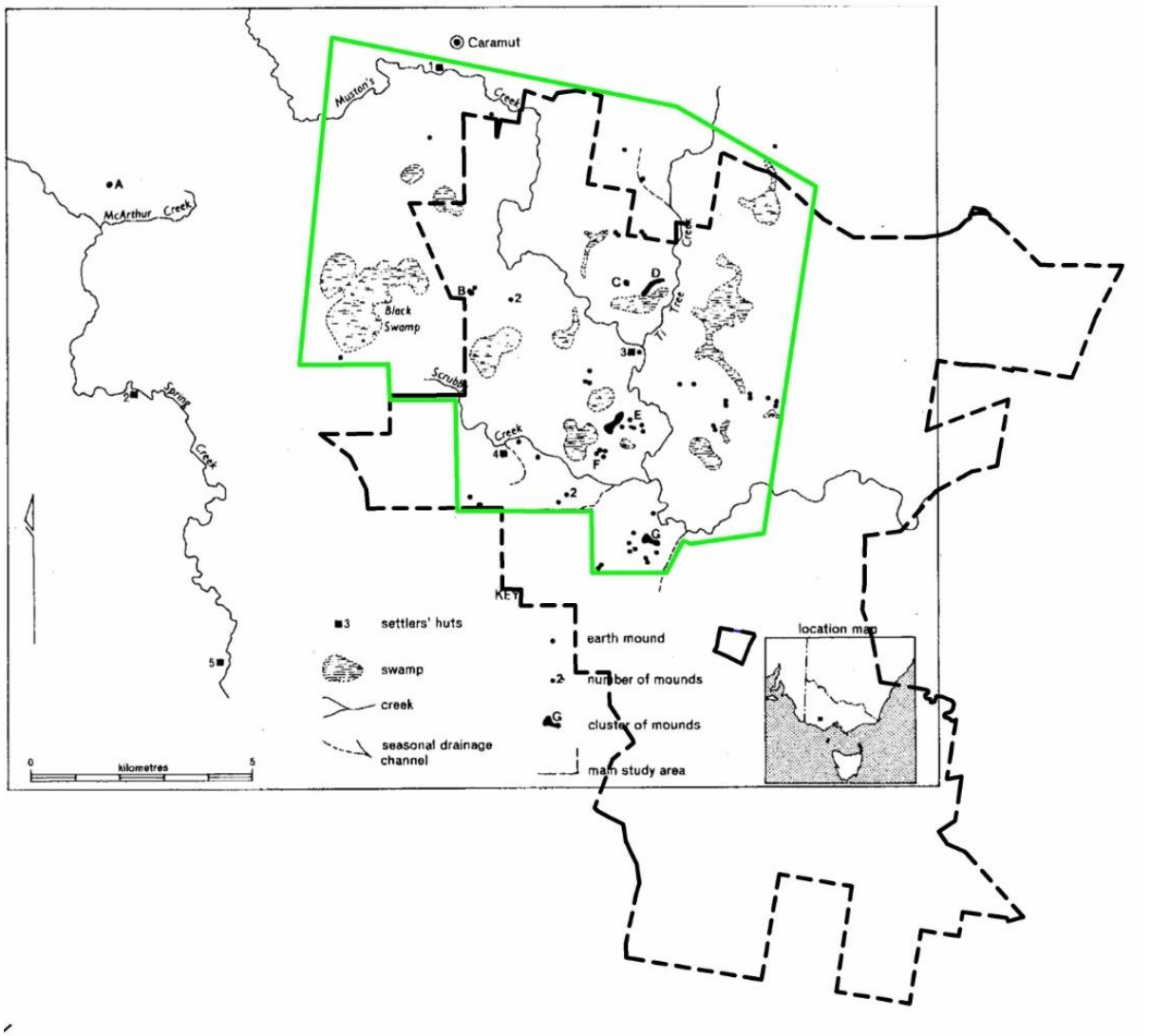



**Figure 1 Williams (1985: 34, Figure 3.1) Caramut Study Area (green) and Activity Area (black dashed)**

McConnell, Buckley and Wickman (2002a) presented the Aboriginal Heritage Management in Victoria Forests report for the Department of Natural Resources and Environment (DNRE) within the framework of the Regional Forests Agreement Program. This report followed on from a similar assessment conducted for the North East Region of Victoria. An Aboriginal Heritage Management System was developed for forests in West Victoria. It proposed a set of principles for the management of values in DNRE managed forests. It recommended that additional identification of Aboriginal heritage values and research should be conducted at a regional level to mitigate the disturbance of Aboriginal heritage values as well as for strategic planning and management purposes. A number of key objectives and mechanisms were proposed to achieve these desired outcomes. A system of Aboriginal Heritage Sensitivity Zoning for the regions was presented (McConnell, Buckley and Wickman 2002b: 23, Figure 4). The activity area is not within any of these zones.

Lane (2008) investigated the stone features at Mt Eccles for her PhD with the aim to re-assess existing archaeological interpretations of the stone circles of the Mt Eccles stony rises, in particular, the thesis aimed to identify the archaeological correlates of stone circles as huts and hut complexes as 'villages'. Open area excavation cast doubt on the previous dating of huts and showed that there was little positive evidence for the long-

term, repeated, semi-permanent or permanent occupation of huts or hut complexes (pp234-235). This meant that the data at the time was too weak to arbitrate on research questions such as the 'intensification' debate (p236). Lane (2008) raised the question whether there was any chronological or behavioural significance to the apparent pattern of stone huts and mounds located on opposite sides of swamps. A surprising result was the overwhelming dominance of coastal flint on the stony rises so far away from the coast, which was a rare occurrence in the regional archaeology.

### Small Scale Investigations

ACHRIS shows there are several local investigations in the geographic region (Wood 1994; Murphy 1994, 1995; Sciusco 1996; Luebbers 1997; Schell & Howell-Meurs 2005a, 2005b; Chandler 2006; Gunn 2007a,. 2007b; Turnbull 2008; Wines & Turnbull 2011).

The majority of these reports have comprised desktop and survey assessments with only two consisting of a subsurface testing and one a salvage investigation (Gunn 2007a, 2007b; Wines & Turnbull 2011). A total of five of the assessments found Aboriginal cultural heritage. Not all of these places are within the present geographic region because some study areas include land outside the region boundary (eg, Wood 1994; Schell & Howell-Meurs 2005; Luebbers 1997). The areas of sensitivity for Aboriginal cultural heritage identified in the assessments include stony rises; floodplains of major rivers (eg Hopkins River); watercourses (eg Blind Creek), lakes, swamps and lake lunettes.

### Cultural Heritage Management Plans

ACHRIS shows there are relatively few approved CHMPs in the geographic region (Schell & Wines 2008; Kirkwood 2009; Murphy & Rymer 2016; Carr 2017; Wood et al 2022; Wood et al 2023). None were conducted in the current activity area.

Wood et al (2023) prepared CHMP 12657 for the Mt Fyans Wind Farm. The desktop assessment areas of archaeological potential on elevated land along waterways and stony rises. The standard assessment recorded three Aboriginal places: VAHR 7421-0233 [Blind Creek 1 LDAD], VAHR 7421-0235 [Boonerah Estate Road 1 Scarred Tree] and VAHR 7422-0586 [Mt Fyans Newer Volcanic Group LDAD 1. The complex assessment excavated 12 TPs and 201 STPs. Subsurface stone artefacts were recorded on intact rises, stony rises and the escarpment along Blind Creek. Two additional Aboriginal places were recorded: VAHR 7421-0237 [Dunkeld Unit LDAD],] and VAHR 7422-0587 [Mt Fyans Newer Volcanic Group Artefact Scatter 1]. A total of 88 stone artefacts were recorded which were made from quartz (n=66, 75%), silcrete (n=13, 14.8%), quartzite (n=6, 6.8%), crystal quartz (n=1, 1.1%) and chert (n=1, 1.1%) and 'other' (n=1, 1.1%). Primary form comprised flakes (n=63), angular fragments (n=17), cores (n=6), blades (n=1) and scarpers (n=1). VAHR 7421-0235 [Boonerah Estate Road 1 Scarred Tree] is in the current geographic region. It was a standing dead Red Gum with a scar measuring 1.22m in length and 1.28m in width. Scientific significance was rated as low. None of the other Aboriginal places were in the current geographic region.

Wood et al (2022) prepared CHMP 12658 for the Mt Fyans Wind Farm – Western Extension Area near Mortlake. The desktop assessment identified one previously recorded Aboriginal place (VAHR 7421-0228) in the activity area. In the geographic region, Aboriginal places were dominated by stone artefacts sites followed by mounds, scarred

trees and other Aboriginal place-types. The site prediction model identified low to moderate potential for artefacts scatters within 200m of waterways and stony rises more than 100m from a permanent water source; low to moderate potential for mounds and moderate potential for scarred trees. The standard assessment recorded a single surface stone artefact at VAHR 7422-0584 [Ollocibberloke LDAD 1], 16 surface stone artefacts at associated with rocky outcrops at VAHR 7422-0582 [Ollocibberloke LDAD 2], and a quartz core on the Salt Creek escarpment at VAHR 7422-0484 [Ollocibberloke LDAD 1]. Areas of archaeological potential were identified (Section 8.4.12: 112-113; Map 10: 116) including land within 200m of Salt Creek, a wetland, Mondilibi ridge and intact stony rises, gilgais and an ephemeral drainage line. The complex assessment excavated 6 TPs and 211 STPs comprising a total area of 58.75m2. Subsurface stone artefacts were found in 5 TPs and 8 STPs comprising a total area of 7m2. A total of 57 stone artefacts were recorded consisting of 17 surface and 40 subsurface stone artefacts. Subsurface stone artefacts were found to a maximum depth of 36cm. Raw material was dominated by quartz (n=28) followed by quartzite 9n=4), other (n=4) and silcrete (n=1). Primary form was dominated by flakes (n=40), angular fragments (n=9), cores (n=5) and blades (n=3). Cores comprised three unidirectional, one bidirectional and one multidirectional core. No formal tools were recorded. Four Aboriginal places were in the activity area comprising VAHR 7422-0581 [Boorung & Mondilibi Landscape Ridge], VAHR 7422-0582(-01, -02, -03, -04) [Ollocibberloke LDAD 2], VAHR 7422-0583 [Murkupang Landscape LDAD] and VAHR 7422-0584 [Ollocibberloke LDAD 1] and were assessed as having moderate, moderate to low and low scientific significance respectively.

Schell and Wines (2008) prepared CHMP 10377 for the Mortlake Power Station Project and included the details of the previous assessments for the project (Schell & Howell-Meurs 2005a, 2005b; Schell 2007). A total of five places (VAHR 7520-0176 & VAHR 7421-0196 to VAHR 7421-0199) were recorded. Two places were found adjacent to major rivers, two adjacent to seasonal watercourses and one on a prominent ridgeline in the Port Campbell Plains. The latter was considered to be an area of sensitivity in a geomorphological setting not previously identified in archaeological investigations. The soil profile on the ridgeline was sandy and the elevated locations provided a good vantage point over the surrounding area.

The nearest part of the assessment was conducted at the power station location north of Connewarren Lane approximately 4km east of the current activity area. No Aboriginal cultural heritage was found. Subsurface testing was conducted along Connewarren Lane (Table 4, p58; Transect 17 Figure 3, p59, p76). Since this area found no Aboriginal cultural heritage and no landforms with archaeological potential were identified, the area was assessed as having low archaeological sensitivity (Section 3.8 & 3.9, pp90-93).

Kirkwood (2009) prepared CHMP 10299 for the Hawkesdale Wind Farm which is located 13km southwest of the current activity area. The desktop assessment predicted that stone artefact scatters and isolated artefacts were most likely to be present, especially within 50 metres of natural waterways. No Aboriginal places were found during the survey. One area of moderate archaeological potential was identified near a drainage line at a proposed wind turbine location and it was subject to subsurface testing. No Aboriginal cultural heritage was found.

Murphy and Rymer (2016) prepared CHMP 12394 for the Dundonnell Wind Farm Transmission Line. The transmission line terminated at the existing electrical station at

Mortlake located approximately 4km east of the current activity area. The desktop assessment identified land within 200m of Salt Creek and former freshwater marshes as having archaeological potential for artefact scatters and earth features (mounds). The survey found no Aboriginal places but did identify areas of moderate archaeological potential comprising elevated land on the margins of three wetlands. All other areas were considered to have low archaeological potential, including land within 200m of Salt Creek, which had suffered repeated disturbance by ploughing, road construction and firebreaks. Since the Sponsor proposed to avoid areas of archaeological potential, no complex assessment was required.

Carr (2017) prepared CHMP 14295 for the Salt Creek Wind Farm Transmission Line which runs up to approximately 5.5km east of the current activity area. The desktop assessment predicted that artefacts scatters and earth features (mounds) are most likely to occur on elevated rises and land within 200m of waterways; and Aboriginal scar trees could be present on mature River Red Gums. Seven previously recorded Aboriginal places (VAHR 7422-0560, VAHR 7422-0157 to VAHR 7422-0162) identified in the desktop assessment were inspected during the standard assessment. Areas of archaeological potential were identified including an elevated volcanic cone, the floodplain of Blind Creek, two locations on the elevated terrace of Salt Creek and a stony rise outcrop. Two new artefact scatters were also identified: VAHR 7422-0575 [Salt Creek Mound 1] and VAHR 7422-00576 [Salt Creek Artefact Scatter 1]. Five areas of archaeological potential were subject to a complex assessment. Subsurface stone artefacts were found on the elevated terrace of Salt Creek and two additional Aboriginal places were recorded: VAHR 7422-0232 [Salt Creek LDAD 1] and VAHR 7422-0574 [Salt Creek LDAD 2]. In total eleven Aboriginal places were identified within the activity area.

### 6.1.4 History and Ethnohistory

The information used to establish pre-settlement Aboriginal spatial organisation is mostly based on observations made by Europeans during the initial period of Contact and subsequent settlement of the activity area region. Early specific historical accounts of Aboriginal land use near the activity area are rare. Two of the primary sources are Dawson (1881) and more recently Clark (1990).

The *Moperer Gundidj* and *Tone Gundidj* clans of the *Dhauwurd wurrung* are recorded west of the Hopkins River. The *Moperer Gundidj* country is described as including Mustons Creek and Spring Creek and the group was sometimes called the Spring Creek tribe. Dawson (1881: 3) describes the territory commencing at Marramok Swamp at Minjah Station and extending to Woolsthorpe, Ballangeich, and up Mustons Creek to Burrwidgee, Murraewuae Swamp, Goodwood House and to Buunbatt. Two massacres are recorded at Lubra Creek and Boggy Gully (near Black Swamp) in 1842. The clan moiety was the *grugidj* (white crow). Little information is known about the *Tone Gundidj* with a vague location noted west of the Hopkins River, northeast of Port Fairy and southeast of Mount Rouse.

The *Buller Buller Cote Gundidj* clan of the *Djab wurrung* is described as being located near the confluence of Salt Creek and Hopkins River. Their clan moiety is unknown and little information about them is available. In 1841 their population was estimated to be from 48 to 192. The *Kolac Gundidj* clan of the *Girai wurrung* is described as being located at

Kona Warren and Merrang on the Hopkins River near Hexham. The clan name has been translated as 'belonging to the sand'. Little additional information is available.

Dawson (1881) records various activities in the local region showing the importance of the area to Contact period Aboriginal groups including communal hunts on Muston Creek and intertribal meetings at Black Swamp (Murraewuae) (see Section 7.4). Communal hunting is thought to have occurred on Mustons Creek a few miles from its confluence with Hopkins River which is therefore likely within the activity area (Dawson 1881: 79). Great meetings were reported at Black Swamp which is located immeidately west of the activity area. It was considered a central position for the meeting of approximately 21 tribes and meetings were thought to include about 2500 individuals (Dawson 1881: 3). The presence of a supernatural being is also recorded (Dawson 1881: 49-50). A bad spirit *Muuruup* (maker of bad smoke) was seen by two Aboriginal men at Merrang on the Hopkins River.

Williams (1984: 174) presented the historical references attesting to Aboriginal 'villages' in the southwest of Victoria and cites the description by William Thomas:

> … by Mustons and the Scrubby Creek to the westward … first settlers found a regular aboriginal settlement. This settlement was about 50 miles NE of Port Fairy. There on the banks of the creek between 20 and 30 huts of the form of a beehive or sugar load, some of them capable of holding a dozen people. These huts were about 6' high or [a] little more, about 10' in diameter, an opening about 3'6" high for a door which they closed at night if they required with a sheet of bark, an aperture at the top 8 or 9" to let out the smoke which in wet weather they covered with a sod. These building were all made of a circular form, closely worked and then covered with mud, they would bear the weight of a man on them without injury. These blacks made various well constructed dams in the creek, which by certain heights acted as sluice gates at the flooding season … In 1840 a sheep station was formed on the opposite banks of the creek to this Aboriginal village or town. My informant was a well educated man and a nephew to the Recorder of the City of London, though a shepherd at the time gave me a drawing he had taken of the village … These blacks used to live almost on fish, grubs and small animals and were perfectly harmless and stationary in 1841 or the end of 1840. My informant stated that the grass got bare or scarce on the side of the creek where the sheep station was, and one day while the Blacks were from their village, up the creek, seeking their daily fare, the white people set fire to and demolished the aboriginal settlement and it afterwards became the sheep farmers [?] … What became of the blacks he would not tell but at the close of 1841 when he again went shepherding in that locality he could not trace a single hut along the whole creek.

Williams (1984: 184) also noted that Augustus Robinson had identified an Aboriginal village at the confluence of McArthur and Springs Creek. She identified a cluster of seven mounds and this cluster was selected for excavation as the mounds had not been ploughed which had been the fate of the mound cluster at Caramut which is located in the current activity area.

### 6.1.5 Landform and Geomorphology

#### Geology

The dominant geological unit of the activity area is the Newer Volcanic Group sheet flows of the Western District Plains (Figure 3) (Joyce et al 2003; Cupper et al 2003). The Western District Volcanic Plains stretches from west of Melbourne to Port Campbell, and includes

15,000km$^2$ of lava flows and over 200 eruption points (Hills 1975; Rosengren 1994). There are two different flow types within the activity area, having erupted at different times. The oldest flows erupted around 2Ma to 3Ma BP, and probably originate from the Mondilibi eruption point and the Woorndoo eruption point in the east (Ollier & Joyce 1964; Rosengren 1994; Grimes 2006; Rosengren 2012). To the north of the activity area is Fox Hill and Green Hill, lava shield eruption points that likely flowed south through the activity area and towards the coast (Boyce et al. 2014). The basalt flows in the area range from transitional to tholeiitic basalt, and is part of the Dunkeld regolith landform unit (RLU), which is described as having an undulating gilgai landscape with 1m to 2m thick red to black clay soils with occasional buckshot (Figure 4) (Gray & McDougall 2009; Joyce 2003).

A small volcanic tuff ring lies within the activity area (Figure 3). During eruption, groundwater interacted with the magma to produce a relatively explosive-style eruption. The resulting deposit is a sedimentary rock containing pyroclastic material that settled from the hydrovolcanic eruption (VRO 2019).

Outcropping Hanson Plain Sand occurs to the east of the activity area, probably as the product of past landscape erosion by the confluence of the Hopkins River and Salt Creek (Welch et al 2011). Dominated by gravel, sand and silt, the Hanson Plain Sand is of marginal marine to fluvial origin, and was deposited in the Pliocene (5-4.3Ma BP) when the Tertiary sea was retreating from the landscape (Edwards et al 1996; Beu & Darragh 2001). This unit is variably ferruginous and calcareous, with clay becoming more dominant further inland (Edwards et al 1996; Welch et al 2011). Brown chromosols dominate the soil profile on the Hanson Plain Sand (Baxter & Robinson 2001).
There are minor Quaternary-age sedimentary deposits within the activity area consisting of swamp deposits, lake deposits, lunettes and alluvial terraces (Buckland & Stuart-Smith 2000). The swamp deposits are derived from the disruption of drainage after the extrusion of the stony rises, preventing adequate drainage of the landscape, and resulting in the pooling of water in the low points of the landscape. Sedimentation of the clay, silt and sand in the swamps and lakes was slow (Rosengren 2012). Most of these deposits are arranged along the contact area between the Mount Fyans stony rises and the older basalt flow fields as well as to the south where groundwater discharge has created several springs (Rosengren 2012).

## Geomorphology & Landform

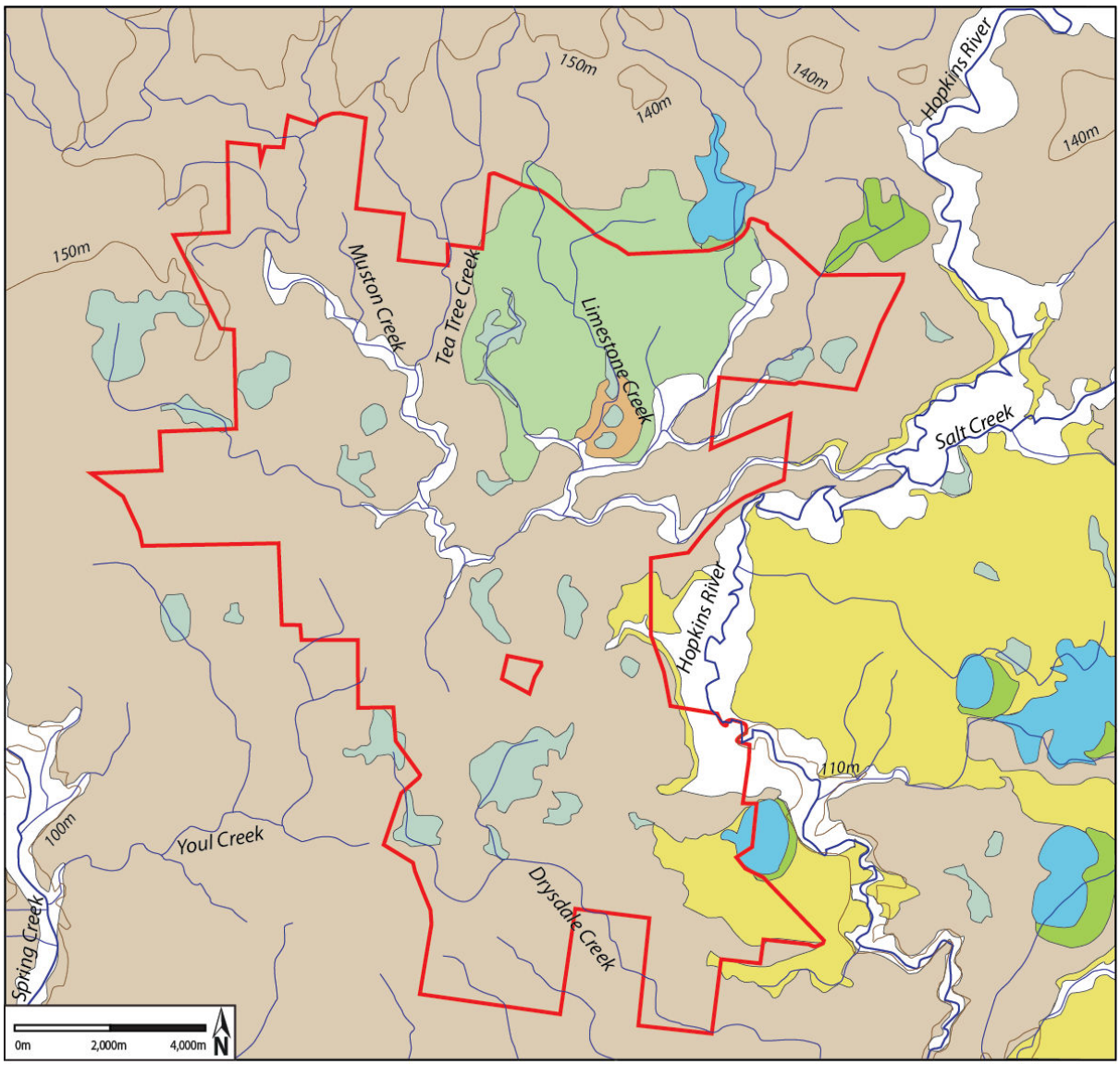
The landscape is relatively flat to undulating with variable surface relief of between 10m to 20m on the stony rises (if present in the activity area), and is comprised of thin lava flows overlying a Tertiary marginal marine plain (Edwards et al 1996; Rosengren 2012; Joyce 2003). These plains are identified as the Western District Volcanic Plains (Figure 3), and have been formed largely by volcanic eruptions and weathering processes over time, with little removal of sediment through erosional processes (Joyce et al 2003; Rosengren 2012). Although largely of low elevation and relief, the stony rises are a significant feature of the landscape in the wider Volcanic Plains with examples present of tumuli, mesas, diverging and converging lava lobes, parallel ridges and depressions, raised lava surfaces, and intervening swampy basins (Rosengren 2012; Edwards et al 1996). These features were created by the uneven flows of lava and by sagging and collapse of lava tubes beneath the crust of the cooling lava (Rosengren 2012; Skeats & James 1937). One

of the highest points in the landscape located outside the activity area and just north of Mortlake is Mount Shadwell, a mafic scoria cone situated 12 km east of the activity area.

Soil cover of the activity area ranges in thickness from very thin on the Eccles RLU to 1-2m on the older (2-3Ma BP) flows of the Dunkeld RLU (Rosengren 2012). Due to the uneven surface topography and the high clay content, drainage of the landscape is poor and surface pooling of water creates a high density of slightly saline and freshwater swamps and lakes in the region. Northeast of the activity area, several springs occur, which are fed by the local groundwater (Rosengren 2012). In some discharge flow paths for the spring water, the rate of discharge was sufficient to allow for stream incision into the landscape. In the geographic region, the main watercourses are Salt Creek, Hopkins River, Limestone Creek, Tea Tree Creek, Mustons Creek, Spring Creek, Youl Creek and Drysdale Creek. These streams flow in a general southerly direction toward the coast (Welch et al 2011).

### Digital Elevation

Shuttle Radar Topography Mission (SRTM) data delineates the landscape topography, revealing an area of level plains with only a few undulating slopes of relatively shallow stream incision (Figure 6). The underlying basalt has most likely originated from farther sheet flow basalts. Areas of depression surround river channels, indicated expansive, flat alluvial terraces.

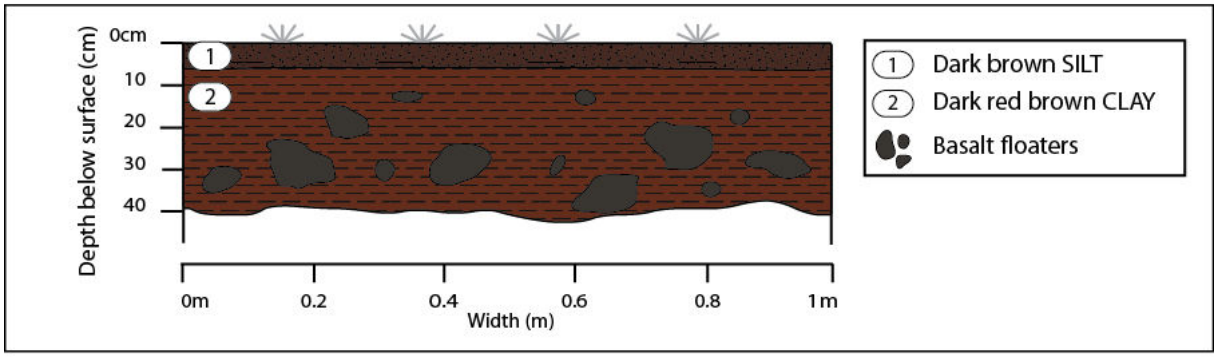



## KEY

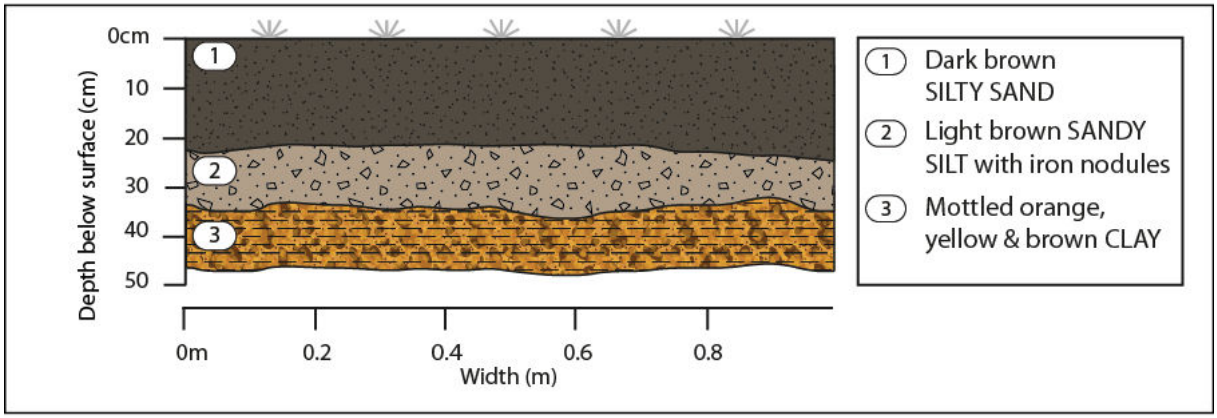
- Activity area
- Newer Volcanic Group
  *Basalt sheet flow*
  23.03 - 0.01 Ma BP
  Undulating plains
- Newer Volcanic Group
  *Tuff rings*
  23.03 - 0.01 Ma BP
  Gravelly sediment
- Contour
- 140m Elevation
- Hanson Plain Sand
  5.33 - 2.58 Ma BP
  Plains with low rises
- Alluvium
  2.58 - 0.01 Ma BP
  Alluvial floodplain deposit
- Alluvial terrace deposit
  2.58 - 0.01 Ma BP
  Elevated alluvial deposits
- Swamp and lake deposits
  2.58 - 0.01 Ma BP
  Swamp landform
- Lake deposits
  5.33 - 0.01 Ma BP
  Even lacustrine landform
- Lunette deposits
  2.58 - 0.01 Ma BP
  Low-expression ridges

**Figure 2 Landscape and Geology of the Project Area**

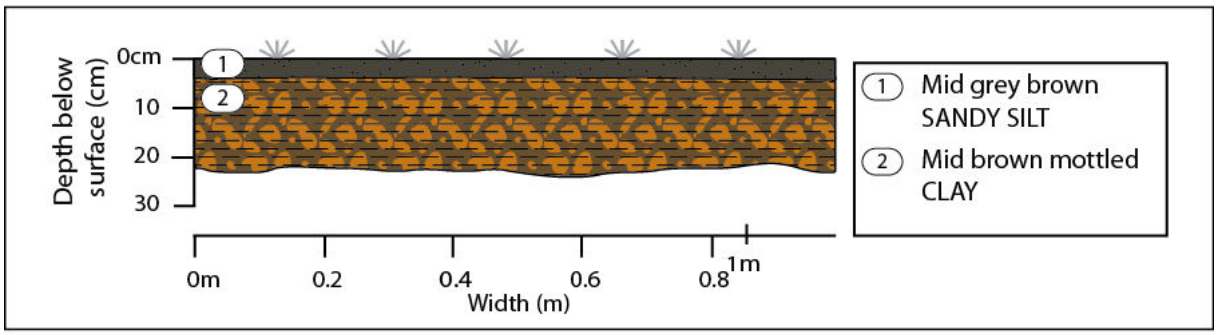
Newer Volcanic Group basalt soil profile (sheet flow and tuff)




Hanson Plains Sands soil profile




Swamp and lake deposits soil profile




Alluvium soil profile

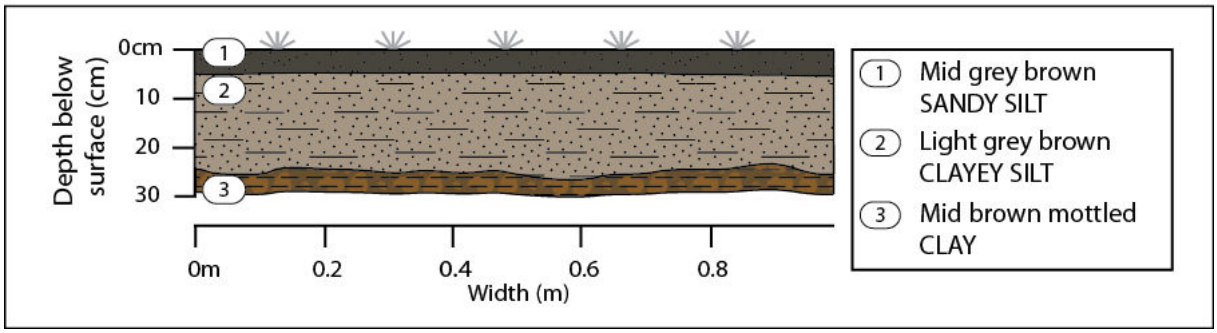
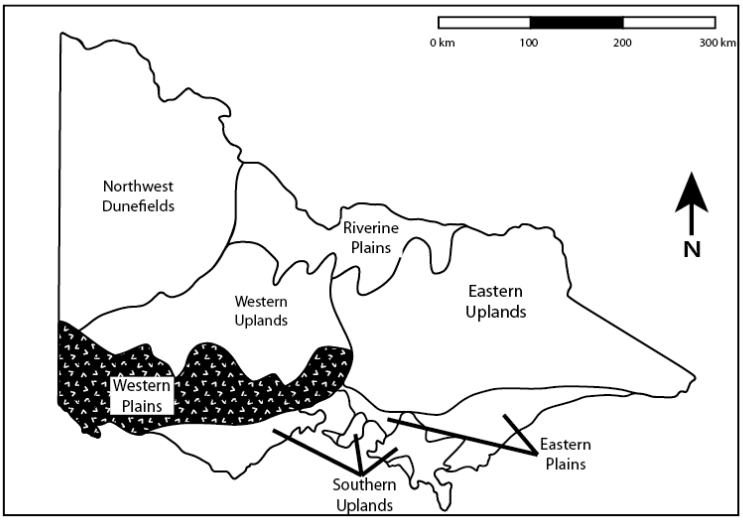



**Figure 3 Expected Sediment Profiles of the Project Area**




**Geomorphic Unit:** Western Plains

**Landform:** Undulating plains with low rises

**Local Watercourses:** Hopkins river, Salt Creek, Drysdale Creek, Youl Creek, Limestone Creek, Muston Creek, Tea Tree Creek

**Drainage Pattern:** Dendritic drainage

**Figure 4 Geomorphology of the Project Area**

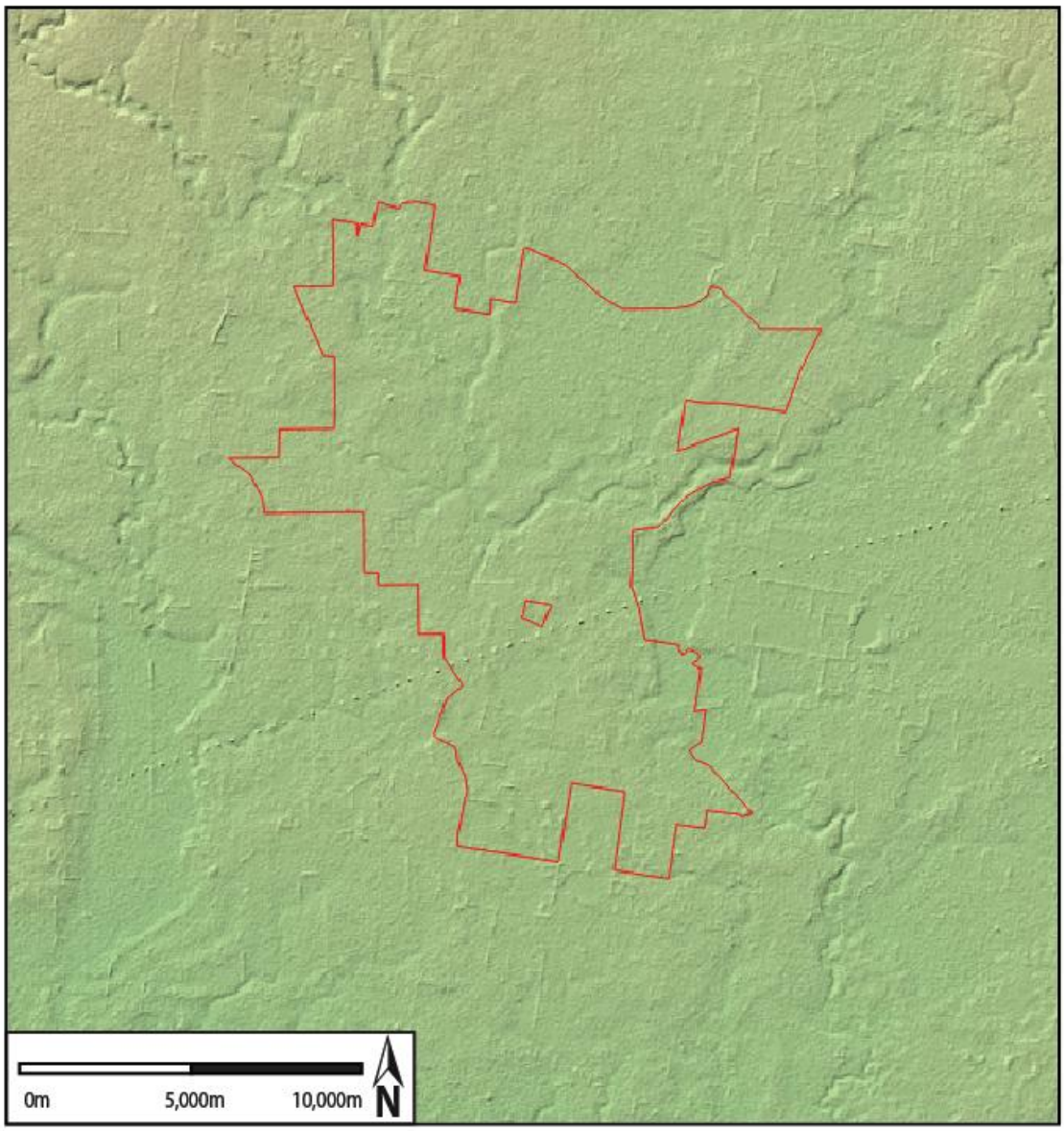



**Figure 5 SRTM Data Showing Landscape Topography**

## Geomorphological History

The geomorphological history is summarised as follows:

**Table 9 Geomorphological History**

| Time Period | Conditions | Effect |
|---|---|---|
| Miocene (23-5.3Ma BP) | - Regional tectonic activity<br>- Retreat of Miocene sea | Reactivation and activation of east to west faults in response to horizontal crustal compression. Miocene sea level highstand retreats at end of period |
| Early Pliocene (5-4.3Ma BP) | - Drop in base level<br>- Deposition of Hanson Plain Sands | A drop in base level promoted the erosion of the landscape, with sediment being deposited in broad alluvial floodplains and outwash fans south of the Great Dividing Range. The Hanson Plain Sand was deposited in a thin sheet of braided stream floodplains, outwash fans and marginal marine sediments in the Pliocene (5-4.3Ma BP) (Edwards et al 1996; Beu & Darragh 2001). At the beginning of this period, the Miocene sea level highstand continued to retreat in conjunction to regional tectonic uplift, and as base level dropped, this triggered erosion across the landscape (Edwards et al 1996). The subsequent change in base level promoted erosion across the landscape, with rivers depositing this eroded material in broad alluvial floodplains and outwash fans (Edwards et al 1996). |
| Late Pliocene - Pleistocene (3-0.1Ma BP) | - Newer Volcanic eruptions | The Newer Volcanic Group basalts were extruded onto the landscape, beginning in the east at approximately 6 Ma BP and ending in the west ~10 ka BP near Mount Gambier in South Australia (Price et al 2003). Surrounding the activity area, the extrusion of lava began in the Pliocene around 3Ma BP with eruptions occurring at the Woorndoo and Mondilibi eruption points (Rosengren 2012; Ollier & Joyce 1964; Grimes 2006). As the viscous lava flowed through the low points of the landscape, it filled river channels, covering the landscape surface and cutting off streams (Joyce et al 2003). The drainage pattern of the region was drastically changed due to the influence of the flows as streams were either diverted or cut off and swamps were formed in the terminations of the cut off streams (Cupper et al 2003). |
| Late Pleistocene - Holocene (0.1Ma BP - Recent) | - Relative landscape stability<br>- European settlement | Since the eruptions, the landscape has undergone very little change. A low-level rate of weathering has become the main geomorphological process that has acted on the landscape, with the basalt rock being mechanically and chemically weathered into clay soils (Joyce et al 2003; Joyce 2003). Rejuvenation of the streams has occurred, with many of the larger streams cutting into the surface of the clay profiles, as attested to at the confluence of Salt Creek and the Hopkins River east of the activity area, exposing the Hanson Plains Sand to the surface (Joyce et al 2003; Joyce 1999). These streams have deposited limited alluvial sediments derived from the erosion of the basalt throughout the Late Pleistocene and Holocene; however, they are mostly thin and discontinuous across the landscape. |

### 6.1.6 Post Contact Land Use History

In the late 1820s whaling and sealing parties established bases along the Victorian coastline, including around Portland and Port Fairy, but it was not until 1834 when the Henty family occupied land at Portland Bay that a permanent European settlement was established in the west of Victoria. The activity area was not settled by Europeans until the late 1830s. After Major Thomas Mitchell's expedition in 1836 the region became more widely known (Kiddle 1983: 35). Mitchell noted the land in the southwest of Victoria was fertile country with good soil and a temperate climate, with enough timber to be of practical use. Travelling south to Portland, Mitchell encountered the Henty family and explored the Portland Bay region with members of the family.

After the official sanctioning of the Port Phillip settlement on 9 September 1836 many squatters set out for the district (Shaw 1996: 63). The activity area was largely part of the *Merrang* run taken over by Claude Farie in 1841. The activity area may also include parts of the *Mustons Creek*, *Mount Shadwell*, *Ballengeich* and *Minjah* runs. From 1847 squatters were given more security of tenure with the option of taking up a pre-emptive right on their land - a long term lease - at the end of which lease holders could purchase up to 640 acres of the run, which usually included a homestead and adjoining land. (Nelson & Alves 2009: 29). The activity area includes the pre-emptive section of Claude Farie's *Merrang* run and Robertson's *Connewarren* run. A pre-emptive section was taken up on *Mustons Creek No.2* but this appears to be outside the activity area.

The 1850s also saw the beginnings of official roads through the district, following the establishment of District Roads Boards under the 1853 Roads Act. These boards had the power to levy tolls and maintain roads, and were intended to work with the Central Roads Board on new infrastructure (Lay 2003: 39-40). The District Roads Boards preceded the formation of Shire Councils.

Land was surveyed into parishes and advertised for sale in the 1850s and 1860s. The activity area comprises parts of the parishes of Hexham West, Yeth-Youang and Caramut. In the 1860s a series of Land Acts were introduced to break up the large pastoral estates for settlement (Dingle 1984: 61). However, the Acts failed to prevent the squatters from purchasing most of the land on their runs. Robert Hood of *Merrang* and Wiliam Bayless of *Coomete* were two of the landowners who acquired land in the activity area (Hood 1991: 54).

Once freehold was obtained, many landholders made further improvements to their land, including the construction of more substantial dwellings, woolsheds and other outbuildings. Robert Hood, who acquired *Merrang* from the trustees of Adolphus Sceales in 1854, made a number of improvements to the property including the construction of a stone cottage that later became the basis of the *Merrang* homestead (Hood 1991: 23).

The Government introduced the Closer Settlement Scheme in response to an increased demand for agricultural land following the 1890s depression and government concerns that those seeking land might move to other colonies (Nelson & Alves 2009: 285). Following the end of World War One Soldier settlement schemes were established with the same principles but with more generous conditions. Settlers in both schemes were expected to live on and fence the land, destroy vermin and weeds, and undertake other improvements before they were entitled to the Crown Grant. Part of William Weatherley's

*Wooloongoon* property (originally part of the *Connewarren* run) was acquired for Closer Settlement (Hood 1991: 53). Following the end of World War Two there was a similar scheme designed for soldier settlers. The activity area includes a number of soldier settlement estates that were originally part of the squatting runs of the 1840s. Parts of the *Merrang*, *Boonerah No.2*, *Coomete*, *Gordons* and *Bardwidgee* soldier settlement estates are located in the activity area.

The activity area has remained rural with grazing and cropping of the land the main land use. A review of Google Earth imagery shows that there has not been any large scale development within the activity area.

Based on the above land use history, the development of the land that has likely affected the integrity of any archaeological sites will be primarily related to civic infrastructure upgrades (eg, roads, utilities, etc) and the continued use of the land for pastoral and agricultural purposes. The later includes improvements of the land by the removal and aggregation of basalt floaters so the land can be ploughed either for cropping or for pasture. In particular, stock trampling and ploughing may have degraded the integrity of sites such as mounds (see Section 7.4). The introduction of pest animals such as rabbits, and the subsequent management of the land to rid them by the deep ripping of warrens, has also significantly impacted mound sites. Often rabbits make their warrens in the softer, deeper soils of mounds and are subsequently deep ripped or dug up by farmers, sometimes using excavators. Rabbits, deep ripping, stock trampling and ploughing may have resulted in the dispersal and perhaps even loss of the archaeological components of mounds. These agents would also likely have affected any other place-type that may be present, such as stone artefact scatters.

### 6.1.7 Pre-Contact Strategic Values for Aboriginal People

A discussion of strategic values in the activity area and surrounding region is important because variations in strategic values likely influenced Aboriginal cultural heritage place location and visitation frequency (Walsh 1987). Strategic values include resources (eg, potable water, flora, fauna, stone sources), routes of movement (e.g. along waterways or ridgelines) and vantage points (eg, prominent hills above plains). In general, strategic values were likely of greater importance to Aboriginal people rather than landform or soil type, that is, Aboriginal groups generally would have chosen long term campsites close to the richest and most diverse resources within the activity area region. Information about strategic values provides insight into Aboriginal cultural heritage place patterning and informs directly on the site prediction statements and identification of areas of archaeological potential presented in Section 7.10.

#### Hydrology

The Hopkins River is the major waterway in the geographic region. It rises near Ararat and generally flows southward, forming part of the eastern boundary of the activity area, until it reaches Warrnambool where it empties into Bass Strait. Mustons Creek is one of its major tributaries. Mustons Creek flows southwards from Caramut where it enters the activity area, then flows eastwards and joins the Hopkins River. There are several named waterways in the activity area that are tributaries of Mustons Creek including Station Creek, Tea Tree Creek, Limestone Creek along with several unnamed drainage lines, one of which was known historically as Scrubby Creek. In the south of the activity area, there are

several unnamed drainage lines that head southwards to join Youla Creek which flows westwards to join Spring Creek. Spring Creek which is outside the activity area to the west, flows north to south through Minjah and Woolsthorpe and eventually becomes part of the Merri River. Lyall Creek and Drysdale creek, located in the southeast of the activity area, flow in a southeasterly direction to join the Hopkins River south of Ellerslie.

There are also several large marshes and lakes including Lake Connewarren and Mirraewuae Marsh (Black Swamp), and although they are not within the activity area, the former is less than a days walk and the latter only an hours walk away. There are numerous low-lying areas on the plain and along waterways which would have ponded during winter and after rain events formed freshwater meadows, marshes and swamps.

## Flora

The plains mainly comprised Plains Grassland (EVC132) which consisted of treeless vegetation dominated by graminoid and herb life forms. There were significant areas of Plains Grassy Woodland (EVC55) closer to major waterways which consisted of open eucalypt woodland to 15m tall and an understory of a few sparse shrubs over a species-rich grassy and herbaceous ground layer. The plain is interspersed with Plains Grassy Wetland (EVC125) which is associated with seasonally inundated wetlands. This EVC is usually treeless but may include a sparse cover of River Red Gum or Swamp Gum. The characteristic ground cover is dominated by grasses, small sedges and herbs. Typical species known to have been exploited by Aboriginal people in these EVCs include River Red Gum, Golden Wattle, Cranberry Heath, Kangaroo Grass and Water Ribbons.

The floodplains and margins of the larger rivers, such as the Hopkins River, mainly comprised Floodplain Riparian Woodland (EVC56) / Plains Grassy Woodland (EVC55) Mosaic or solely Floodplain Riparian Woodland. Floodplain Riparian Woodland consisted of open eucalypt woodland over a shrub layer and ground layer of herbs and sedges. Plains Grassy Woodland comprised an open eucalypt woodland to 15m tall with an understory of a few sparse shrubs and a species rich grassy and herbaceous ground layer. Along the watercourse and floodplain of Mustons Creek, Riparian Woodland (EVC641) dominated. It is found on narrow alluvial deposits, comprised eucalypt woodland to 15m tall over a tussock grass, sedge and herb ground layer. On the tributaries of Mustons Creek, Creekline Grassy Woodland (EVC68) dominated and comprised eucalypt woodland to 15m tall with occasional scattered shrub layer over a grassy and herbaceous ground layer. Typical species known to have been exploited by Aboriginal people in these EVCs include River Red Gum, Blackwood, Golden Wattle, Spiny-headed Mat-rush, Common Tussock Grass, Common Read, Flax Lily, Bulbine Lily, Small Leaf Bramble, Ruby Salt Bush, River Mint and Water Ribbons. Based on the known evidence of species exploited by Aboriginal groups, a larger range of species were exploited near waterways compared to the plains.

## Fauna

The fauna that inhabited the grassy plains, woodland and riparian woodland would have been numerous and varied (Williams 1985). Fauna would have included a range of large and small land mammals, reptiles, amphibians, grubs, insects, fish, crayfish, mussels and birds. Prior to Contact fauna would have been common, but many are now rare or extinct. Kangaroos and wallabies would have been abundant on the plains and margins of

waterways. Species thought to have occurred at contact include echidna, platypus, quoll, dunnart, bandicoot, possum, feathertail and sugar gliders, koala, wombat, water and swamp rat (Williams 1985: 40). Reptiles included snakes and lizards. Eel, black fish, yabbies and freshwater mussel would have been found in waterways and swamps. Birds on the plain, waterways and swamps included emu, plains turkey, brolgas, black swan, black duck, grey teal, shoveler and quail (Williams 1985: 44-45). Plentiful fauna was available to Aboriginal groups throughout the activity area with increased variability and abundance on the margins of waterways.

### Stone Sources

Common stone sources of the region include greenstone and chert from the Mt Stavely Volcanics in the northwest; quartzite from regionally metamorphosed Cambrian and Silurian sediments; silcrete from sub-basaltic and duricrust sources; and quartz from hydrothermal veins in Palaeozoic sediments (Welch et al 2011; King 1985).

**Table 10 Stone Sources**

| Stone Source | Geological Unit | Location in Relation to Activity Area |
|---|---|---|
| Chert | Mt Stavely Volcanics | 50km+ to north of activity area; Western Volcanic Plains region; Stavely area |
| Quartzite | Cambrian and Silurian meta sediments | 10km+ to north of activity area; Western Volcanic Plains region; Chatsworth area; Glenthompson area; Dunkeld area |
| Quartz | Palaeozoic sedimentary rocks | 10km+ to north of activity area; Western Volcanic Plains region; Chatsworth area; Glenthompson area; Dunkeld area |
| Silcrete | Sub-basaltic and duricrust exposures | Located within activity area; Western Volcanic Plains region; Mortlake area; Hexham area |

### Routes of Movement

Waterways would have been major routes of movement across the western plains. In particular, the Hopkins River and Mustons Creek would have provided plentiful potable water and other resources as Aboriginal groups travelled from one long-term camp site to another.

### Vantage Points

There are no known strategic volcanic eruptions points or hills in the activity area that would have afforded expansive 360 degree views across the geographic region. Since the volcanic plans are relatively flat, any more substantial rise in the activity area would have afforded good views across the local area.

### Summary of Strategic Values

The geographic region would have been one that varied between low to high strategic value for Aboriginal people. Areas of high strategic value are those which have several (>5) EVCs and permanent potable water within close proximity. Areas of highest strategic

value (and therefore more likely to have a higher density of archaeological sites) in the activity area are along the margins of the main waterways and swamps.

At these locations Aboriginal groups had access to permanent potable water; swamp, riverine and creek resources as well as easy access to plain resources. Larger waterholes along these waterways would have been highly desirable locations for long term or base camp activities. Similarly attractive locations would include the confluence of various creeks and swamps, including swamp outlets. Any location along perennial waterways would have been attractive locations for short term activities whilst travelling, hunting or gathering in the activity area region. Aboriginal place distribution is expected to reflect this distribution of natural resources with larger, more complex and a higher density of places along the margins of the main waterways (such as Hopkins River, Mustons Creek) with fewer, smaller and a lower density of places on the plains. The plains in general are likely to contain low density stone artefacts ($<1pm^2$) that reflect day to day hunting and gathering forays (eg, repair and maintenance of hunting toolkits) rather than focused campsite activities (eg, food preparation and cooking; working of hide and wood; major toolkit production, maintenance and repair, etc). The significance of available resources is attested to by the presence of numerous sites within the wind farm boundary.

### 6.1.8 LiDAR Analysis by La Trobe University

La Trobe University was commissioned to conduct a LiDAR analysis to identify mound sites in the activity area. LiDAR is a remote sensing method that uses near-infrared pulses to create high-resolution digital elevation models (DEMs). The aims were to determine if LiDAR was effective in identifying previously recorded mounds sites (ie, those recorded by Williams, see Section 6.1.3) and identifying unrecorded mound sites in the other parts of the activity area not surveyed by Williams. The approach could potentially be used to accurately locate previously recorded sites, identify unrecorded mound sites and avoid harm to these sites, control for areas of poor ground surface visibility encountered during the standard assessment, and provide useful methodologies and information for use in other investigations for mound sites in the southwest of Victoria. The specific objectives of the analysis were to:

1. Create a DEM of the activity area using airborne LiDAR data
2. Develop and implement a methodology to effectively reveal the structure and topography of previously recorded and potential mound sites in the DEM
3. Develop criteria to guide the ranking of potential mound sites based on the likelihood of Aboriginal origin to inform future fieldwork and / or the design of the activity area.

The DEM was then surveyed for potential mound sites and each site was ranked using evaluation criteria to assess the likelihood of being Aboriginal cultural in origin. The criteria included:

1. Curvature (being round or ovoid in shape)
2. Diameter (between 5m and 19m (calculated from descriptive statistics on previously recorded mounds sites in the activity area)
3. Location within 1km of a natural watercourse, drainage line or stream
4. Location within 1km of a natural lagoon, swamp, land prone to inundation
5. Visible variation in surface vegetation or colour (indicating elevated soil organics)

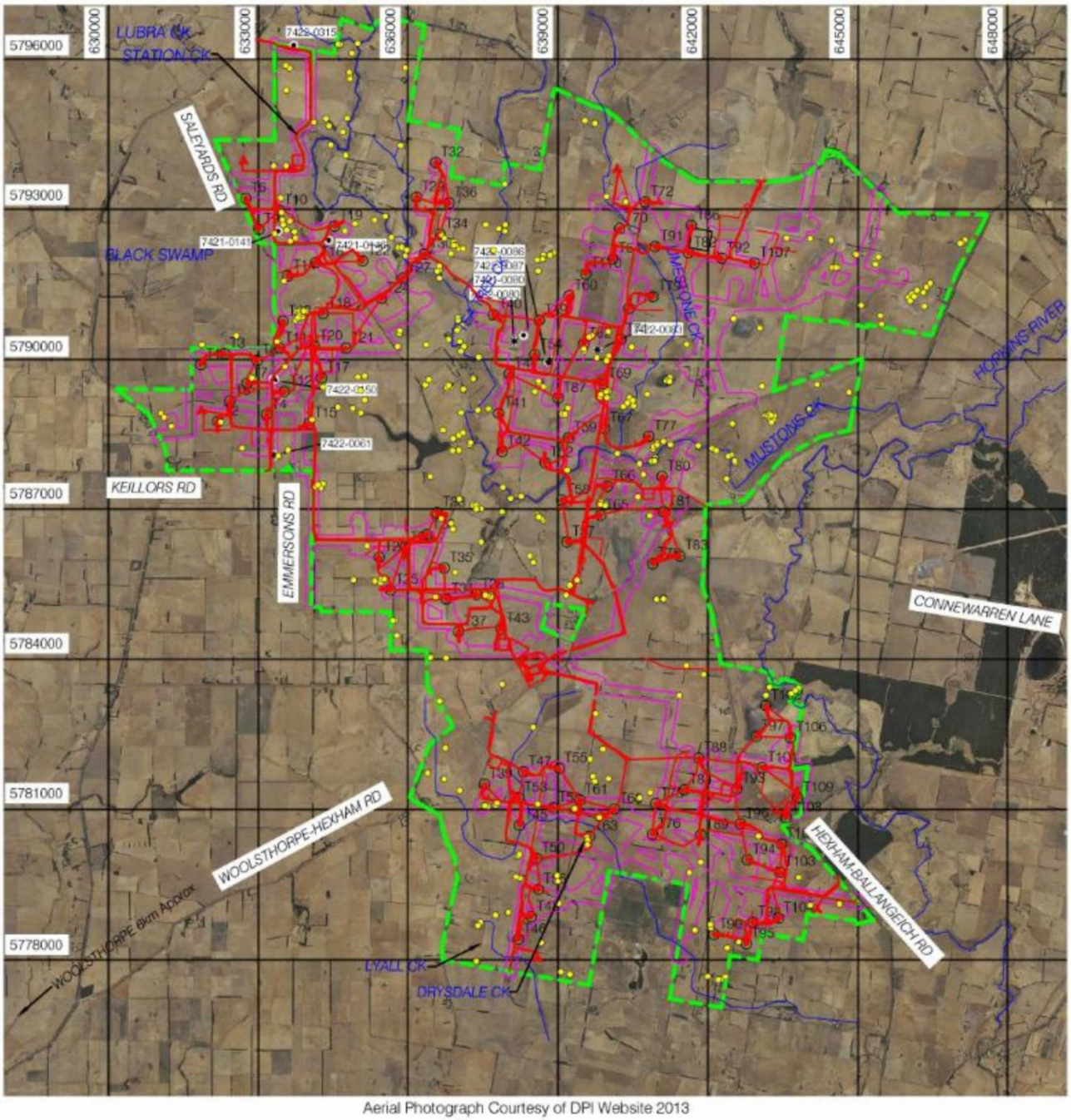
6. Clustering in groups of two or more (within a 200m radius)
7. The appearance in historical aerial photography of the activity area (if available)

A score of 1 was applied for each of the criteria if met with the maximum score possible being 8. The following scoring was applied:

0–2: Unlikely Aboriginal cultural origin
3–5: Possible Aboriginal cultural origin
6–8: Likely Aboriginal cultural origin

To test whether the developed method could effectively reveal the structure and topography of mound sites, the investigation initially focussed on five clusters of previously recorded mounds and three areas where no mounds have been previously identified. The results suggested that the method was somewhat effective and could identify other mound-like features. The approach was then extended across the entire activity area. A total of 377 potential mounds were identified and were classified as 'likely' (n=105), possible (n=235) and 'unlikely' (n=37) mound sites (Maps 3a-d).

The proponent utilised the investigation to amend the wind farm layout to avoid the potential mound sites identified in the LiDAR investigation.




Aerial Photograph Courtesy of DPI Website 2013

Legend:

Activity Area - Wind Farm
16,103 hectares (approx)

Possible Mound

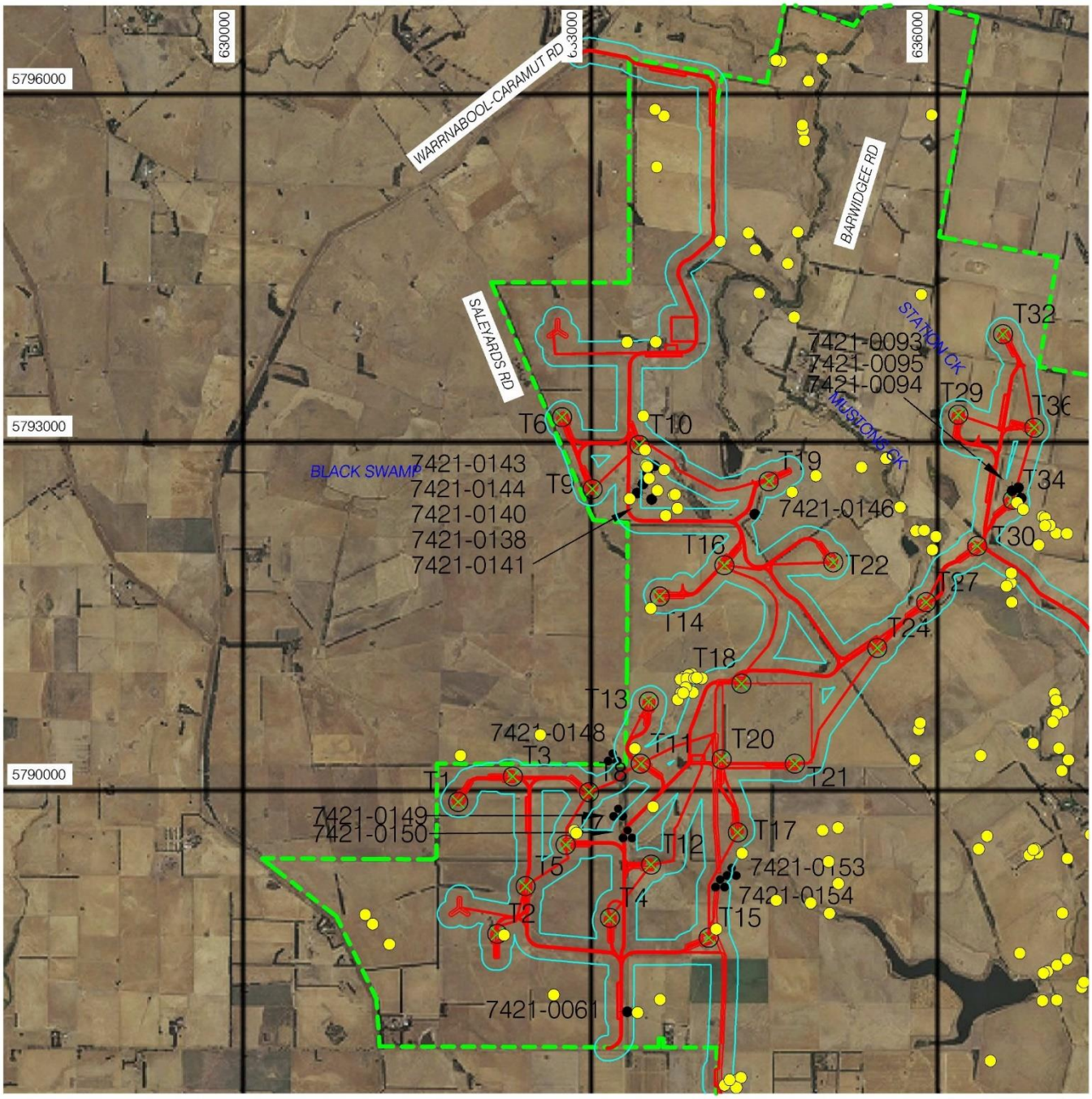
2019 Footprint

2025 Infrastructure

0 1 2 3
Scale of Kilometres

N
GDA94
MGA Zone 54

**Map 3a LiDAR Mounds (Overview)**

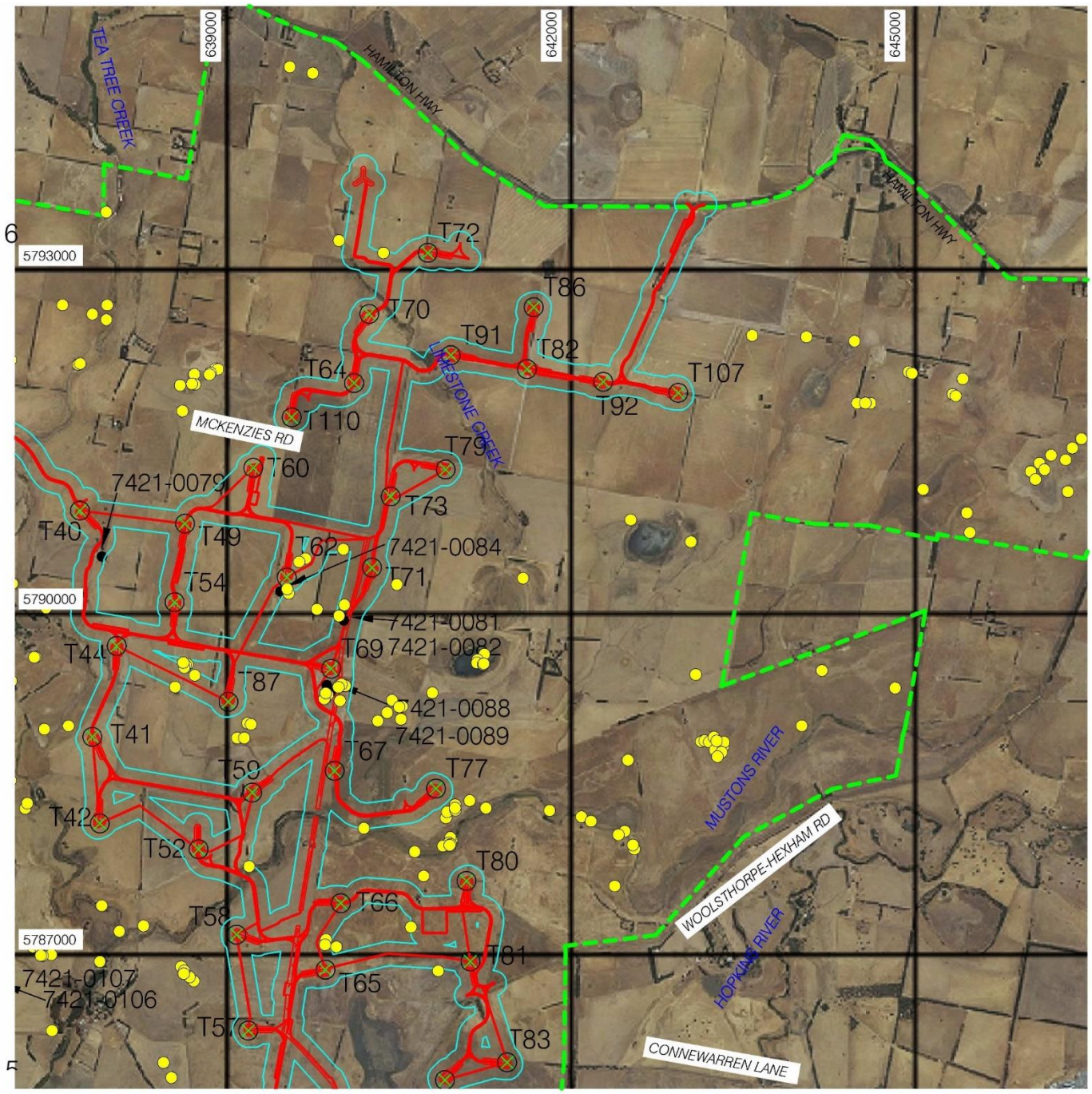



## Legend:

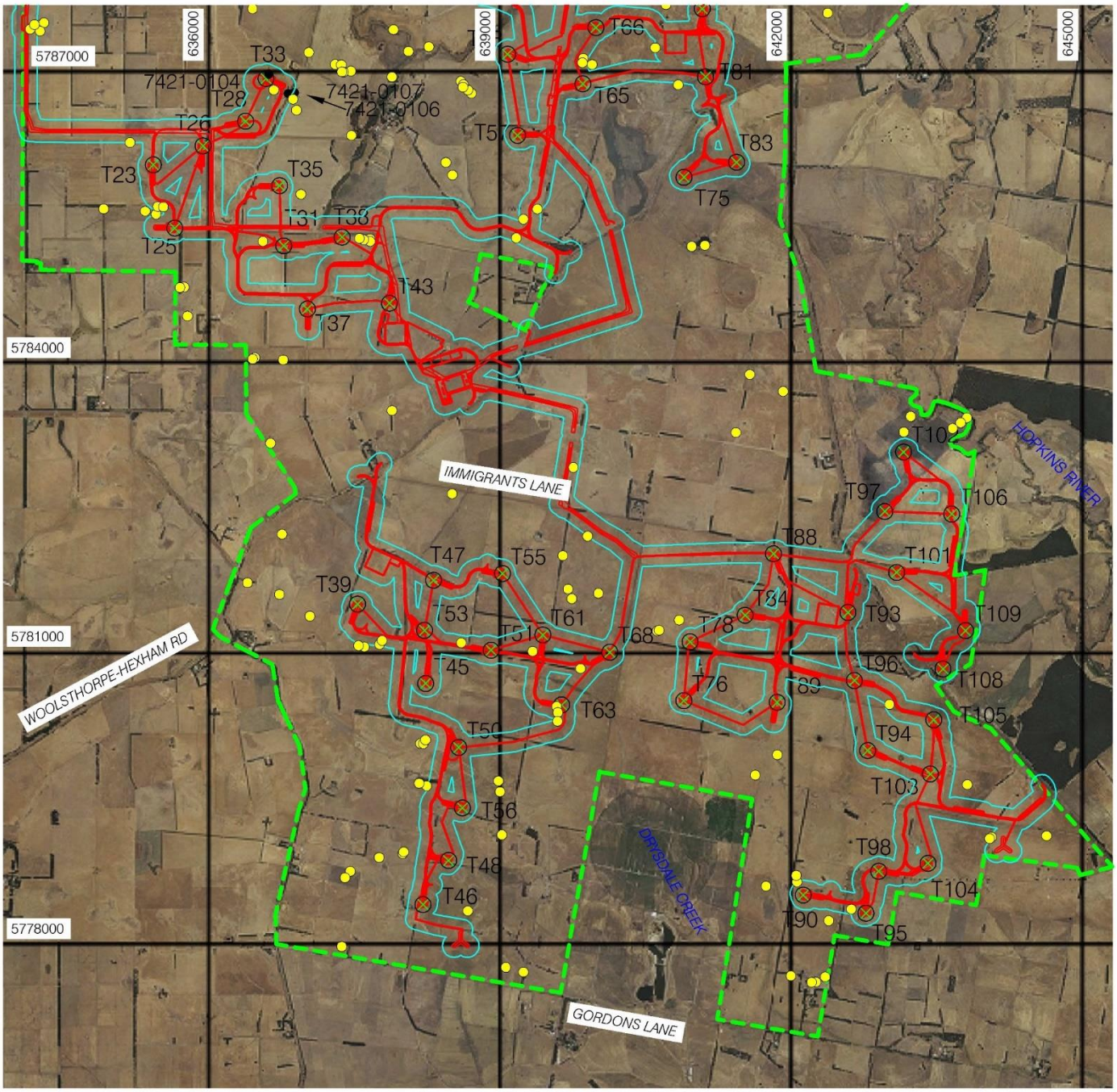
- Activity Area Boundary
  16,103 hectares (approx)
- Area of Works (100m buffer)
- Infrastructure
- Turbine
- Meterological (MET) Mast
- Artefact Scatter
- Earth Feature; Mound
- Earth Feature
  VAHR 7421-xxxx
- Possible Mound

N
GDA94
MGA Zone 54

**Map 3b LiDAR Mounds (Northwest)**




**Map 3c LiDAR Mounds (Northeast)**




Department of Jobs, Precincts and Regions

## Legend:

Activity Area Boundary
16,103 hectares (approx)

Turbine
Meterological (MET) Mast

Artefact Scatter
Earth Feature; Mound
Earth Feature
VAHR 7421-xxxx

Possible Mound

0 1000 2000
Scale of Metres

N
GDA94
MGA Zone 54

**Map 3d LiDAR Mounds (South)**

### 6.1.9 Desktop Assessment Predictive Model and Areas of Archaeological Potential

Desktop information is summarised below and is used to identify areas of archaeological potential according to landform and place-type (Table 8). These areas of archaeological potential are modelled in Maps 4a-d.

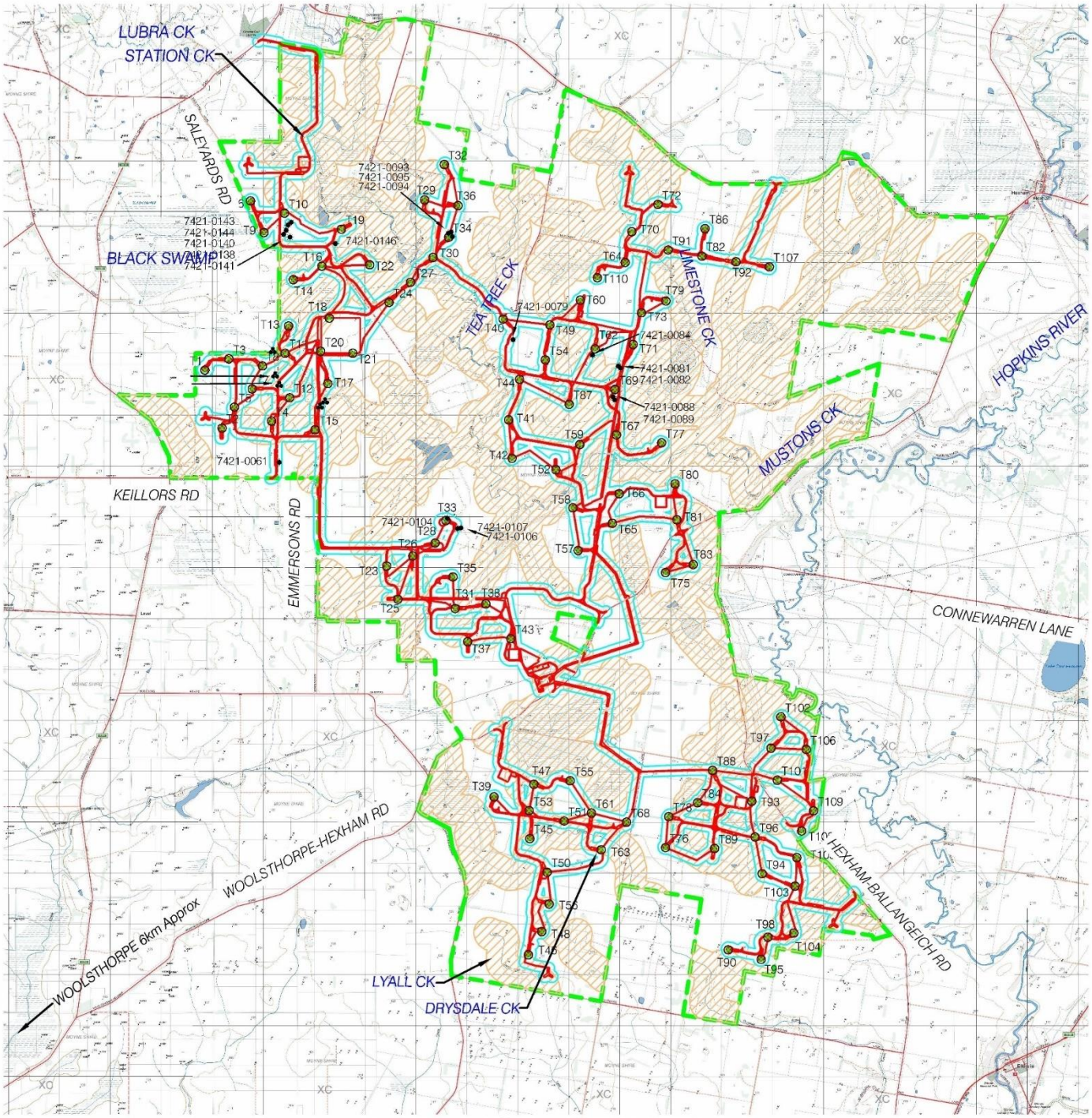
- There are 326 registered Aboriginal places in the geographic region dominated by mounds, artefact scatters and LDADs and Aboriginal scar trees (see Table 6). There are a small number of other place-types including soil deposits, hearths, Aboriginal ancestral remains and Aboriginal cultural places.
- There are 114 registered Aboriginal places in the activity area comprising 83 mounds (73%), 30 artefact scatters (26%) and one soil deposit (1%) (see Table 7).
- The majority of places were recorded in the 1970s and 1980s. There has been very little investigation in the activity area since then. The most recent investigations are associated with nearby wind farm transmission lines and other power utilities.
- Mounds have a relatively strong relationship to waterways with 65% found within 300m. Larger mounds tend to be in closer proximity to waterways and swamp outlets.
- Mounds tend to be located on low rises and undulations (65%) with fewer located on the plain / floodplain (32%).
- Mounds (71%) are often associated with charcoal, burnt stone and clay lumps. No mounds in the geographic region have had ancestral remains. Ancestral remains have been found on mounds in Victoria but is very rare.
- The integrity of mounds may be significantly affected by decades of ploughing and animal pest management.
- Stone artefact scatters are also found in close association with waterways with (87%) within 100m; however, this result is skewed by the predominance of survey along the margins of waterways rather than on the plains. If stone artefacts are found, they may have the following characteristics:
    - Primary form: dominated by angular fragments and flakes with smaller components of cores, blades and tools.
    - Raw material: dominated by quartz followed by silcrete and other raw material types.
    - Density: typically low density unless associated with sand dunes (lunettes).
    - Artefact depth: maximum depth 30cm in brown clayey silt or silty clay profiles. Depth may be deeper in sandy profiles.
- Aboriginal scar trees may be found on any mature indigenous trees that remain, in particular, Red Gums.
- Aboriginal ancestral remains are possible, but considered unlikely, to be found on dunes, lunettes or sandsheets because none have been registered on ACHRIS in the geographic region on these landforms. Furthermore, no part of the disturbance footprint traverses these landforms which negates this risk. Wind farm infrastructure is more than 400m from any dune, lunette or sandsheet landforms.
- There are two historic references within the activity area. Consultation with TOs may result in additional historic references associated with the project.

The potential of the activity area to contain Aboriginal cultural heritage is attested to by the large number of previously registered sites. Permanent potable water along perennial rivers, creeks and swamps would have been optimal locations to camp and access

riverine, lacustrine and plains resources. Aboriginal place distribution is expected to reflect this distribution of resources with larger, more complex and a higher density of mounds and artefact scatters along the margins of the Hopkins River and Mustons Creek. This complexity and density will reduce along more ephemeral creeks, drainage lines and freshwater meadows, swamps and marshes. In these locations smaller and fewer mounds mound may be present along with smaller, low density artefact scatters. The plains are likely to contain a low density of stone artefacts that reflect hunting and gathering forays associated with occasional toolkit maintenance and repair. Based on these site prediction statements the following areas of archaeological potential have been identified and are modelled in Maps 4a-d.

**Table 11 Desktop Assessment Predictive Model and Areas of Archaeological Potential**

| Landform / Location | Archaeological Potential | Details |
|---|---|---|
| Land within 100m of waterways, floodplain terraces and swamps | Stone artefact scatters<br>High | Stone artefact scatters are typically found within 100m of waterways and swamps in a surface and subsurface context. Stone artefacts are typically found up to 30cm in depth in clayey silt or silty clay A-horizons. |
| Rises and plain within 300m of waterways and swamps | Mounds<br>Moderate to High | Mounds are typically found within 300m of waterways and swamps. Larger mounds and mound clusters may be associated with major swamp outlets and major waterways. Smaller mounds in fewer numbers may be associated with intermittent creeks, drainage lines and ephemeral freshwater meadows, swamps and marshes. The majority of mounds are associated with charcoal, burnt stone and clay lumps. Ploughing and pest management may have dispersed or destroyed mounds. |
| Remnant mature indigenous trees | Aboriginal Scar Trees<br>Moderate | Scarred trees have been identified where mature Red Gums remain. |
| Dunes, lunettes, deep sandy profiles | Aboriginal ancestral remains<br>Low | Aboriginal ancestral remains are possible, but considered unlikely, to be present in deeper sandy soil profiles such as dunes and lunettes because none are registered on ACHRIS in the geographic region on these landforms. No part of the disturbance footprint traverses any landform with sandy profiles which are more than 400m from any infrastructure. |
| Activity area | Ancestral remains, stone features, earth features, shell middens, quarries, rock art<br>Low | No mounds in the geographic region have had ancestral remains. Ancestral remains have been found on mounds in Victoria but is very rare. All other place types have low potential to be present. They are either absent in the geographic region or found in low numbers. |




Aerial Photograph Courtesy of DPI Website 2013

Activity Area Boundary
16,103 hectares (approx)

Area of Works (100m buffer)

Infrastructure

Turbine

Meterological (MET) Mast

Artefact Scatter

Earth Feature; Mound

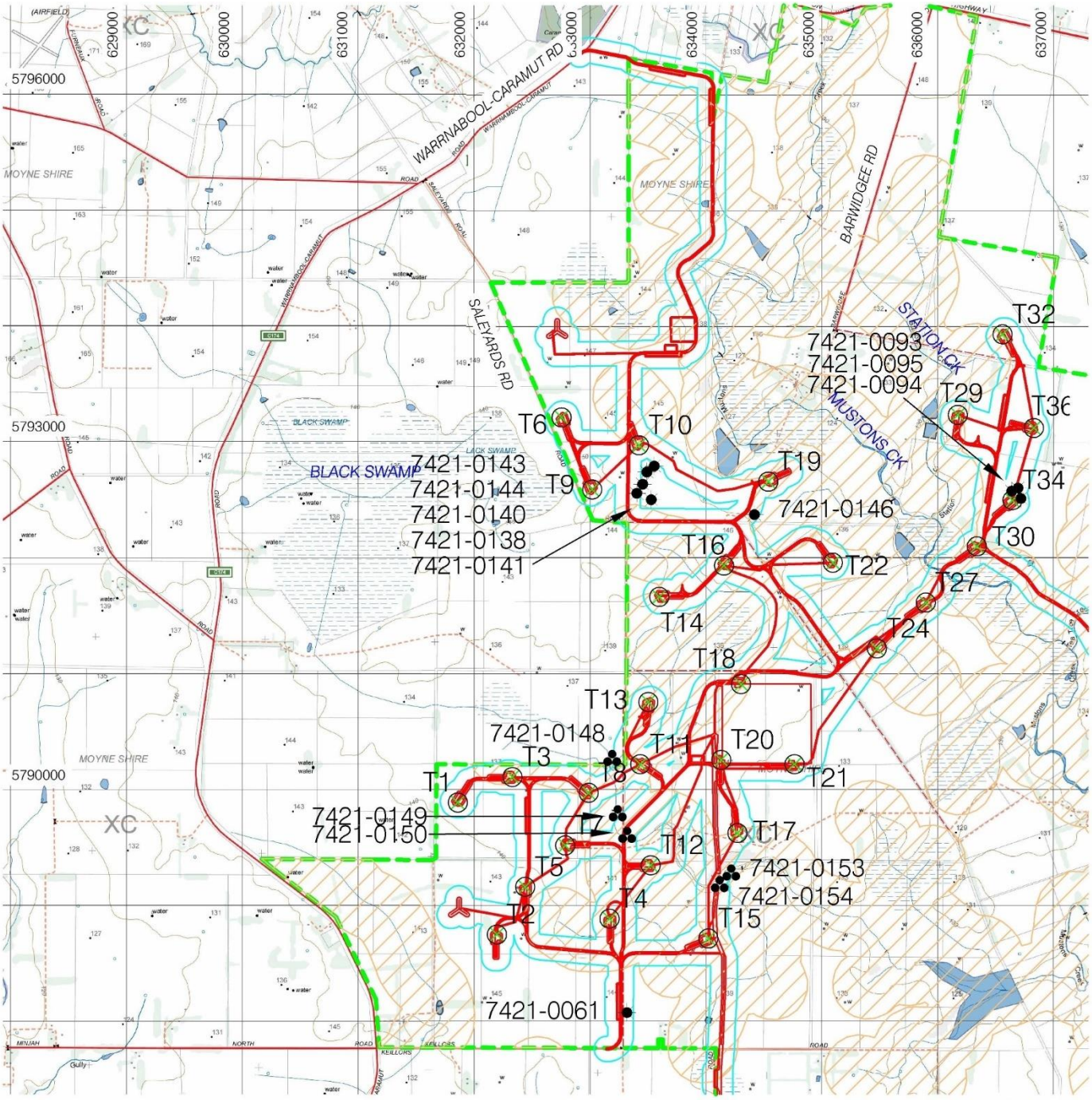
Earth Feature
VAHR 7421-xxxx

Archaeological Potential

0 1 2 3
Scale of Kilometres

N
GDA94
MGA Zone 54

**Map 4a Desktop Assessment Predictive Model and Areas of Archaeological Potential**




Department of Jobs, Precincts and Regions

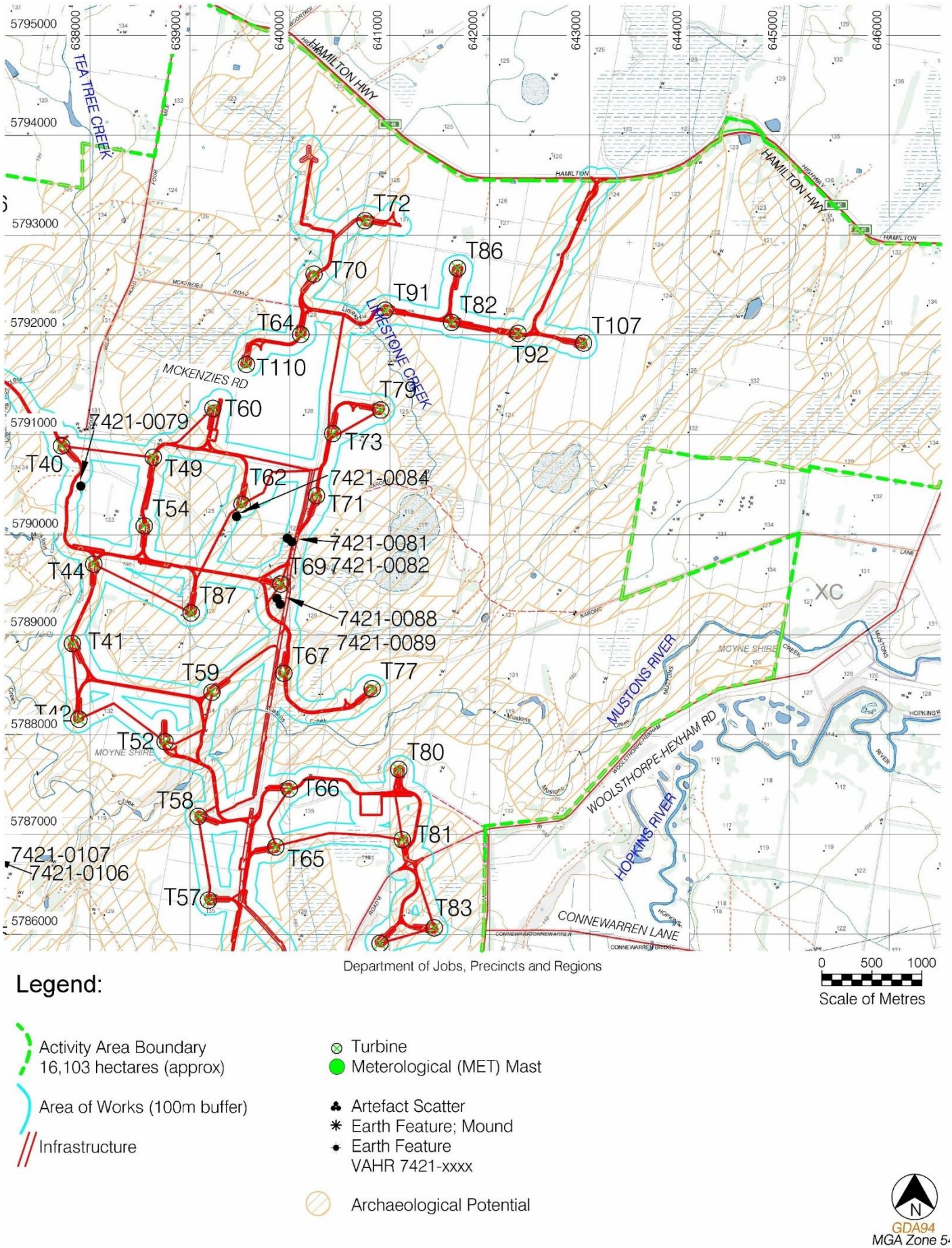
0 500 1000
Scale of Metres

## Legend:

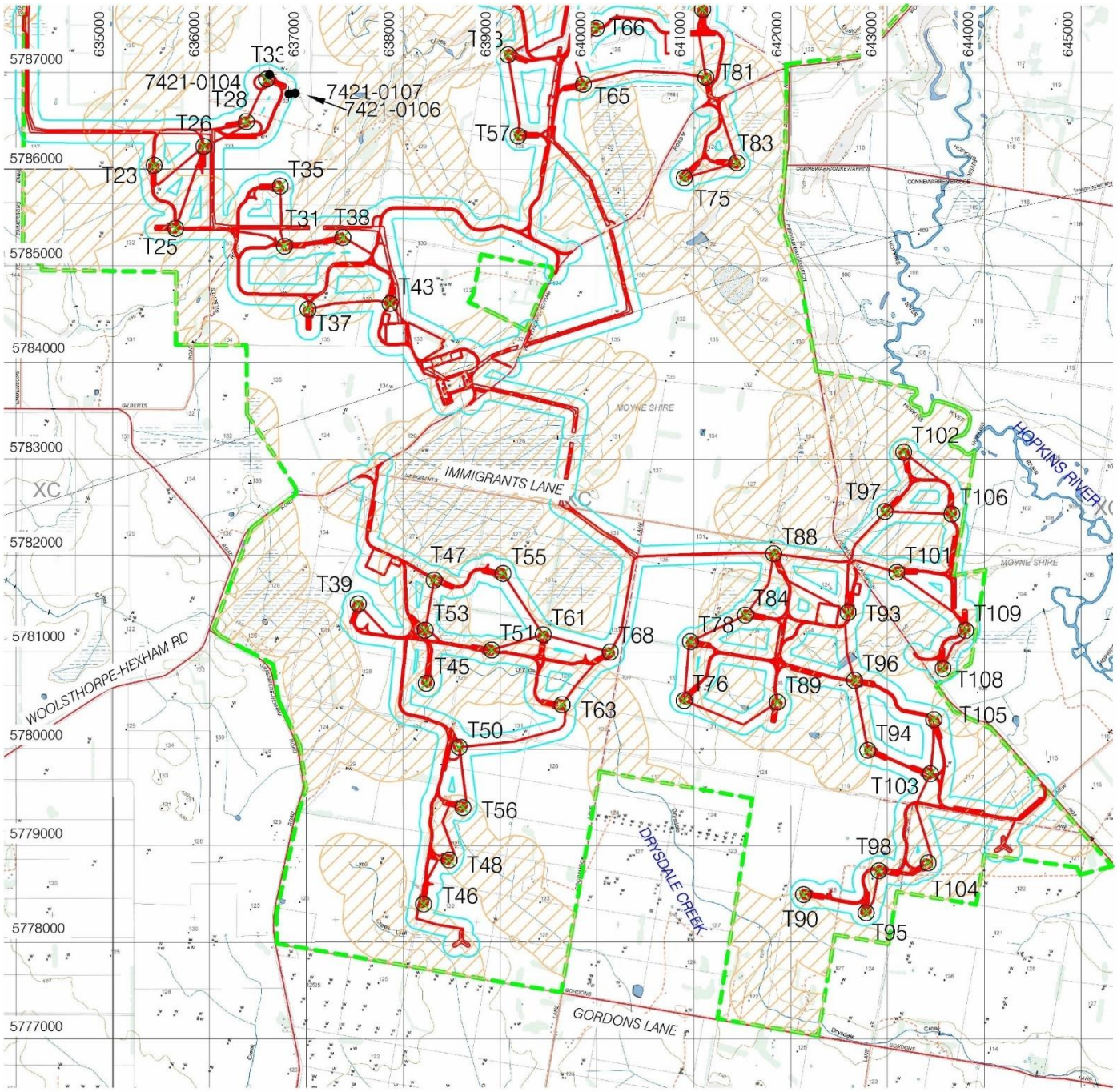
- Activity Area Boundary 16,103 hectares (approx)
- Area of Works (100m buffer)
- Infrastructure
- Turbine
- Meterological (MET) Mast
- Artefact Scatter
- Earth Feature; Mound
- Earth Feature VAHR 7421-xxxx
- Archaeological Potential

N
GDA94
MGA Zone 54

**Map 4b Desktop Assessment Predictive Model and Areas of Archaeological Potential (Northwest)**




**Map 4c Desktop Assessment Predictive Model and Areas of Archaeological Potential (Northeast)**




Department of Jobs, Precincts and Regions

**Legend:**

Activity Area Boundary
16,103 hectares (approx)

Turbine
Meterological (MET) Mast

Artefact Scatter
Earth Feature; Mound
Earth Feature
VAHR 7421-xxxx

Archaeological Potential

0 1000 2000
Scale of Metres

N
GDA94
MGA Zone 54

**Map 4d Desktop Assessment Predictive Model and Areas of Archaeological Potential (South)**

## 6.2 Standard Assessment

### 6.2.1 Methodology

Two phases of standard assessment were conducted (Map 5a):

- Phase 1 was conducted in 2019 based on v165 of the wind fam layout.
- Phase 2 was conducted in 2025 based on v183 of the wind farm layout.

The ground survey was conducted in a systematic manner and in accordance with proper archaeological practice. A pedestrian survey was conducted (Burke & Smith 2004: 66-69) in order to assess 100% of the ground disturbance footprint. Land within 100m of sites recorded within 100m of the ground disturbance footprint were also surveyed. Land beyond these areas was not subject to survey.

All areas were examined to determine areas of good ground surface visibility and / or moderate and above potential archaeological sensitivity for Aboriginal places. The systematic pedestrian survey comprehensively sampled all micro-landform patterns, elements and attributes.

The assessment of sensitive landforms is particularly relevant for stone artefact scatters and mounds. The fieldworkers examined the ground surface for the following evidence that mounds may be present: micro-topographic circular or oval features up to 50cm in height, charcoal staining, dark or greasy sediments, lumps of burnt clay or stone; shells, animal bones and stone artefacts; rabbit burrows; or circular vegetation features (eg, circular patches of capeweed). At previously recorded site locations, all the ground between the recorded location and the ground disturbance footprint was examined and land within a 100m radius. The radius of 100m was considered appropriate taking into consideration that when information on site cards was available, a comparison of the site card information and ACHRIS showed that the site locations had a tolerance of approximately 25m (eg, VAHR 7421-0081 and associated mound sites). In the Phase 2 survey, the results of the LiDAR analysis (see Section 6.1.8) were utilized to examine any potential mound sites within 100m of the ground disturbance footprint.

Detailed notes were taken, including descriptions of landform elements, ground surface visibility, ground disturbance, geology, geomorphology, vegetation, water sources and areas with archaeological potential.

Survey Areas (SA) are shown on Map 5b. The Phase 1 standard assessment was conducted on the v165 wind farm layout and the Phase 2 standard assessment was conducted on the v183 wind farm layout (Map 5a). Prior to the Phase 2 standard assessment a GAP analysis of both wind farm layouts was conducted to identify areas that were not surveyed in Phase 1.

The activity area was divided in SAs based on wind farm layout, land parcels and landform (Map 5b). As previously stated, the entire SAs were not subject to pedestrian survey, with survey limited to the ground disturbance footprint and land within 100m of previously recorded sites within 100m of the ground disturbance footprint.

**Table 12 Survey Areas**

| Survey Area | Description |
|---|---|
| SA1: northwest of the activity area | This SA comprises the volcanic plain along Mustons Creek and west of Tea Tree Creek. Tea Tree Creek and Station Creek to the west drain land north of Mustons Creek. An unnamed drainage line also drains land in the northwest of the activity area. |
| SA2: centre of the activity area | This SA comprises the volcanic plain west of Mustons Creek in the central part of the activity area. Two unnamed creek lines drain the plain northwards to Mustons Creek. |
| SA3: south of the activity area | Hopkins River runs along part of the eastern boundary of the SA. The headwaters of Lyall Creek and Drysdale Creek drain the plain to the south. |
| SA4: northeast of the activity area | This SA comprises the volcanic plain in the northeast of the activity area, including land south of the Hamilton Highway, north of Mustons Creek and east of Tea Tree Creek, and land south of Mustons Creek near the intersection of Woolsthorpe-Hexham Road and Hexham-Ballangreich Roads. The plain is drained by Limestone Creek and various unnamed natural and artificial drainage lines. |

Effective survey coverage was estimated for each survey area by taking into consideration archaeological visibility. Archaeological visibility refers to the amount of the ground surface that is clearly visible for inspection. The greater the ground surface visibility, the more effective are surveys. Examples of high surface visibility are vehicular and pedestrian tracks, sand dune blow outs (100% per $m^2$); and examples of poor visibility are areas of heavy vegetation cover (0-10% per $m^2$). Unfortunately, it is often the case that highly visible Aboriginal places are also often highly disturbed. High ground surface visibility is therefore often related to the amount of disturbance that has occurred. This disturbance may be caused by human activity (such as drainage lines, vehicle tracks), by stock (overgrazing, tracks), or by natural processes (wind or water erosion). The level of ground surface visibility is typically assessed as follows:

| | |
|---|---|
| 0% | No visible ground surface |
| 0 – 10% | Very poor |
| 10 – 30% | Poor |
| 30 – 50% | Fair |
| 50 – 70% | Good |
| 70 – 90% | Very good |
| 90 – 100% | Excellent |

### 6.2.2 Ground Surface, Mature Trees, Caves, Rock Shelters and Cave Entrances

The survey examined the ground surface in the ground disturbance footprint. All mature trees were inspected for evident of the presence or absence of Aboriginal cultural scars. No caves, rock shelters or cave entrances were identified. The ground surface at registered and potential mound site locations identified in the LiDAR analysis was examined for evidence using the criteria provided above in Section 6.2.1.

### 6.2.3 Fieldwork

The Phase 1 standard assessment was conducted by representatives from Tardis and EMAC and Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) from 24 June to 18 July 2019. The fieldwork was conducted when both EMAC and GMTOAC had RAP applications over the project area.

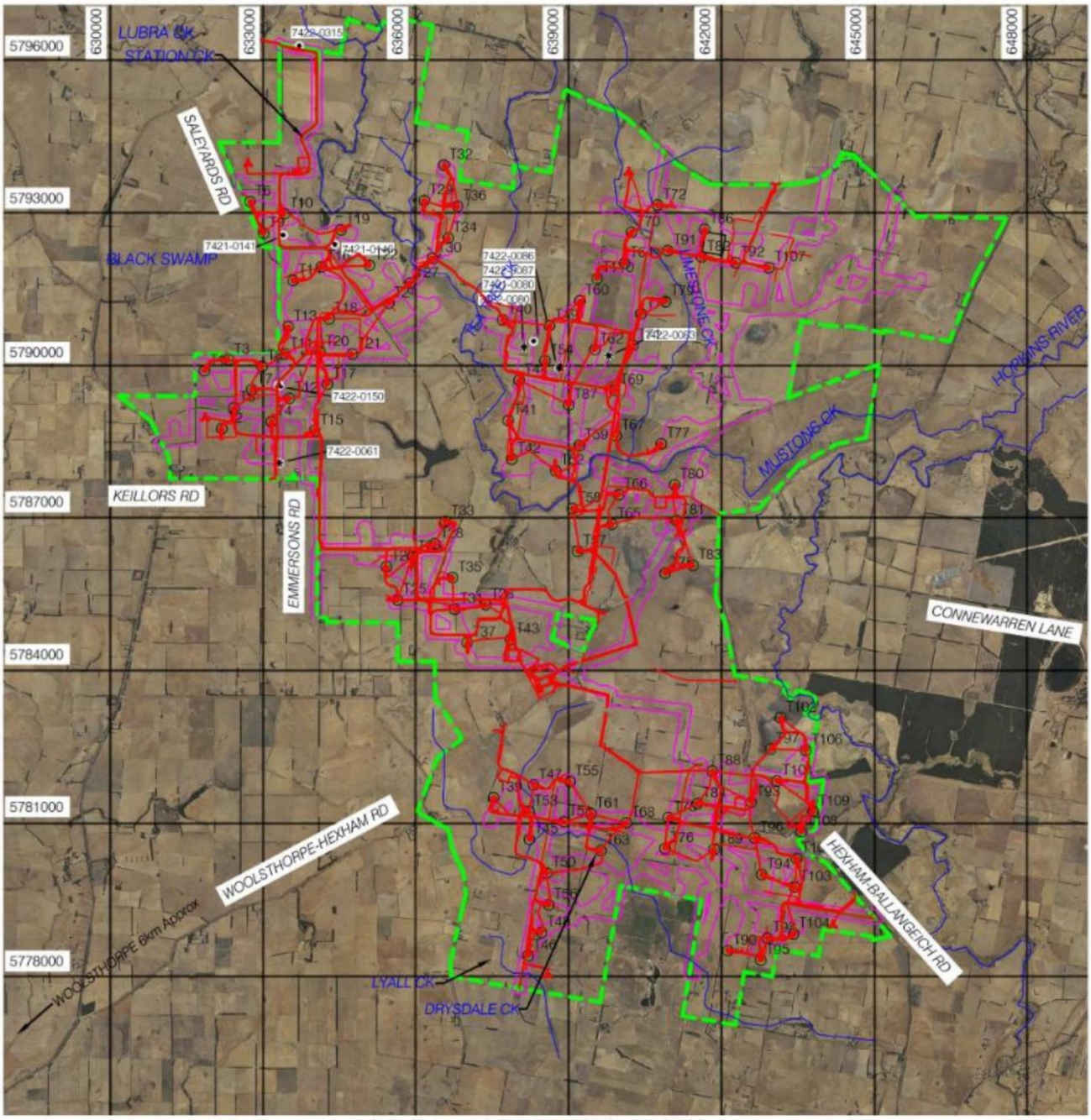
The Phase 2 standard assessment was conducted by representatives from Tardis and EMAC from 20 June to 17 July 2025. Subsequent to the Phase 1 standard assessment, EMAC was appointed the Registered Aboriginal Party for the entire activity area.

### 6.2.4 Obstacles

In Phase 1 there were no physical obstacles encountered during the survey. However, poor ground surface visibility reduced the effectiveness of the survey to identify surface Aboriginal cultural heritage such as stone artefacts and mound components, if present.

In Phase 2 extended drought in the region meant that ground surface visibility was often excellent, aiding the effectiveness of the survey to identify surface Aboriginal cultural heritage such as stone artefacts and mound components (eg, soil colour changes, charcoal, clay lumps, stone artefacts, etc), if present. However, recent heavy showers made access planning difficult at times.

During both Phase 1 and Phase 2, when poor ground surface visibility was encountered, it was due to grass cover. Typically, the grass was very short and was no obstacle to identifying microtopography indicative of mounds. Even when the visibility was fair or above, there was usually sufficient ground surface for a micro-inspection to determine the presence or absence of mound components or stone artefacts (see above Section 6.2.1).




Aerial Photograph Courtesy of DPI Website 2013

Legend:

Activity Area - Wind Farm
16,103 hectares (approx)

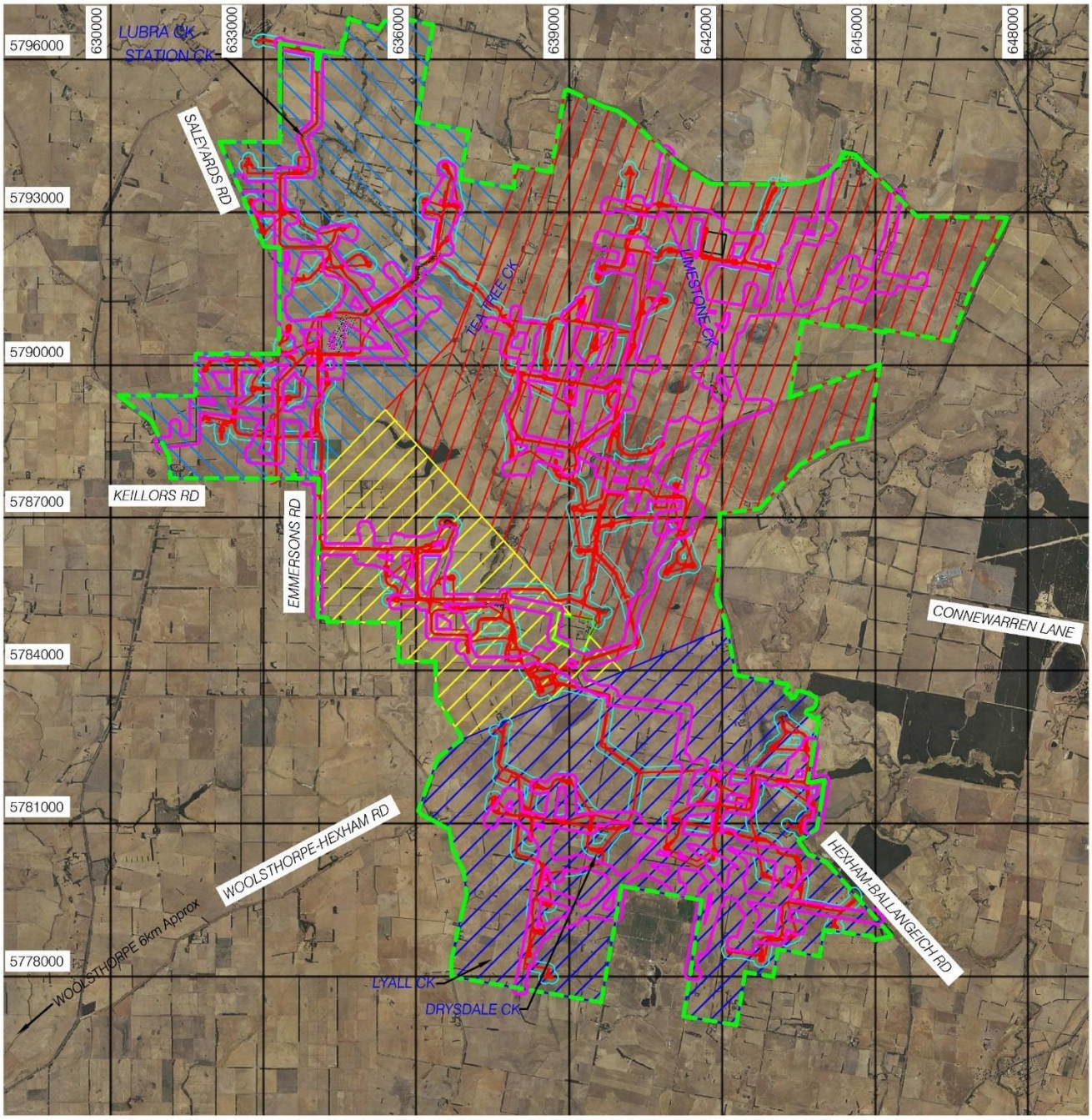
2019 Footprint

2025 Infrastructure

0 1 2 3
Scale of Kilometres

N
GDA94
MGA Zone 54

**Map 5a Phase 1 and Phase 2 Survey Areas**




Aerial Photograph Courtesy of DPI Website 2013

Legend:

Activity Area - Wind Farm
16,103 hectares (approx)

2019 Footprint

2025 Infrastructure

Survey Unit 1

Survey Unit 2

Survey Unit 3

Survey Unit 4

0 1 2 3
Scale of Kilometres

N
GDA94
MGA Zone 54

**Map 5b Survey Areas**

### 6.2.5 Results

#### Phase 1 – 2019

No new Aboriginal places were found. Several previously recorded Aboriginal places were inspected and are detailed in the relevant SA described below. Ground surface visibility was generally poor across the entire activity area with patches of excellent visibility in disturbed areas. These areas included, for example, recently ploughed paddocks, exposed ground along access tracks and areas exposed by stock trampling (eg tracks, gates & rubs). Ground surface visibility and effective survey coverage is summarised as follows:

**Table 13a Phase 1: Survey Areas & Effective Survey Coverage**

| Survey Area | Ground Surface Visibility | Effective Survey Coverage |
|---|---|---|
| SA1: northwest of activity area ~21.1% of activity area | <5% | <5% |
| SA2: centre of activity area ~11.4% of activity area | <5% | <5% |
| SA3: south of activity area ~25.4% of activity area | <1% | <1% |
| SA4: northeast of activity area ~42.1% of activity area | <5% | <5% |

#### Phase 2 – 2025

No new Aboriginal cultural heritage was identified. A total of 41 locations identified by the LiDAR model were inspected.

**Table 13b Phase 2: Survey Areas & Effective Survey Coverage**

| Survey Area | Ground Surface Visibility | Effective Survey Coverage |
|---|---|---|
| SA1: northwest of activity area ~21.1% of activity area | <40% | 10% |
| SA2: centre of activity area ~11.4% of activity area | <50% | 10% |
| SA3: south of activity area ~25.4% of activity area | <70% | 20% |
| SA4: northeast of activity area ~42.1% of activity area | <50% | 10% |

#### 6.2.5.1 Survey Area 1 – Northwest of Mustons Creek

*Phase 1 – 2019*

The land comprises the volcanic plain along Mustons Creek in the northwestern corner of the activity area. This SA includes wind farm infrastructure north of Mustons Creek and west of Tea Tree Creek. Station Creek and Tea Tree Creek drain land north of Mustons Creek. An unnamed drainage line also drains land west of Mustons Creek and has several artefact scatters and a few mounds recorded along its margins. Access roads include Saleyards Road from the north off Warrnambool-Caramut Road, and Keillors Road and Emersons Road from the west also off Warrnambool-Caramut Road.

Access tracks will follow existing farm tracks where appropriate. These farm tracks are typically formed dirt roadways with graded earthen invert drains on both sides. The access tracks sometimes follow the western terrace of Mustons Creek and traverse slightly elevated areas with basalt floaters. Typically, the elevated areas are low relief and not very rocky; therefore, are not prominent enough to be classified as stony rises.

At the mound cluster north and east of Saleyards Road, the majority of the ground surface has been ploughed. Limited unploughed areas with basalt floaters remain. The registered location of the mound cluster was intensively surveyed but no evidence of the mounds was found.

Photo 1

SA1: view along access track, facing south. Note track is formed with earthen inverts along both sides. Excellent ground surface visibility along track, very poor in paddocks.

Photo 2

SA1 view toward Mustons Creek, facing southeast. Note excellent visibility on track which is raised and formed. There is a rocky outcrop (red arrow) on the edge of the terrace of Mustons Creek.

Photo 3

SA1: intensive survey of rocky outcrop on edge of terrace of Mustons Creek also shown in the distance on Photo 5 above.

Photo 4

SA1: typical wind turbine location in flat paddock, facing west. Note the furrows from ploughing for pasture improvement. Stone aggregation has likely also occurred as there is a small pile of basalt floaters in the background right of the picture (red arrow).

Photo 5

SA1: basalt floaters and aggregated basalt boulders on level plain at the location of mound cluster north and east of Saleyards Road, facing north.

Photo 6

SA1: VAHR 7421-0147 location, facing north. (Note aggregated stone on right.)

Photo 7

SA1: basalt floaters outcropping in paddock, facing north. Muston Creek is in the background.

Photo 8

SA1: view of drainage line, facing southeast.

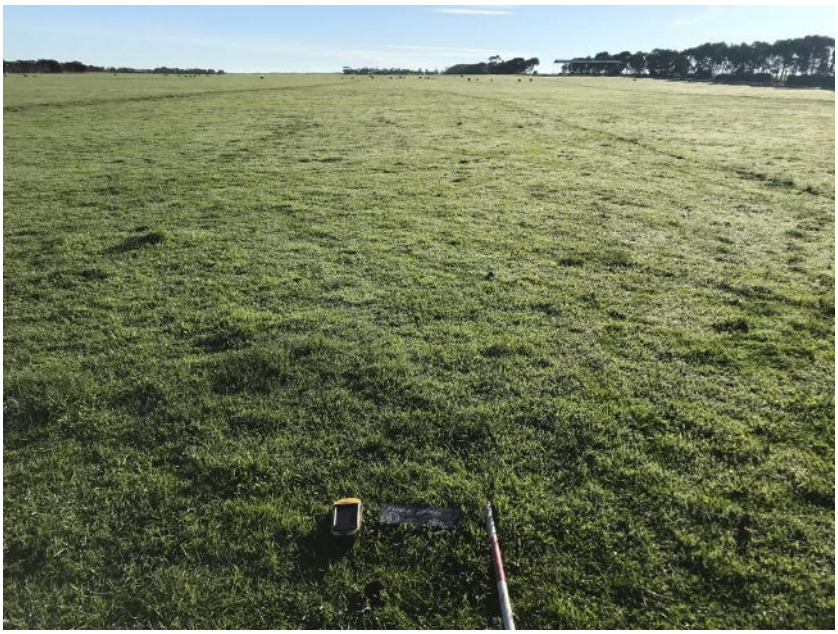


Photo 9

SA1: registered location of mound VAHR 7421-0090. located north of Mustons Creek and west of Tea Tree Creek. Note flat featureless plain.

Photo 10

SA1: registered location of mound VAHR 7421-0093 north of Mustons Creek and west of Tea Tree Creek. Note flat featureless plain and patch of excellent ground surface visibility from stock trampling.

Photo 11

SA1: proposed turbine location immediately north of the track crossing Mustons Creek and on the terrace of Mustons Creek.

Photo 12

SA1: north terrace of Mustons Creek, facing north.

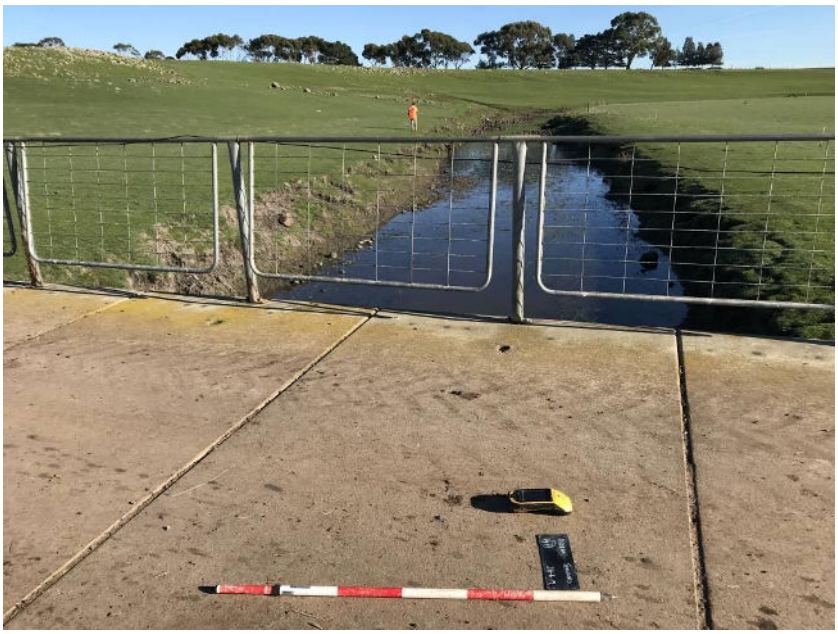


Photo 13

SA1: Mustons Creek crossing facing west.

Photo 14

Mustons Creek crossing, facing south.

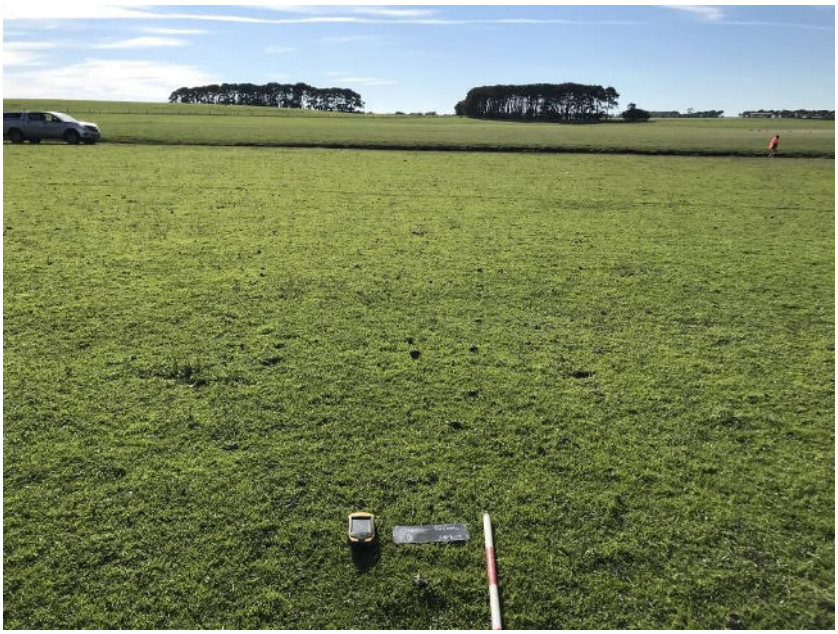


Photo 15

SA1: view of recorded location of artefact scatter VAHR 7421-0127 situated south of Mustons Creek crossing and on the western or southern bank, facing north.

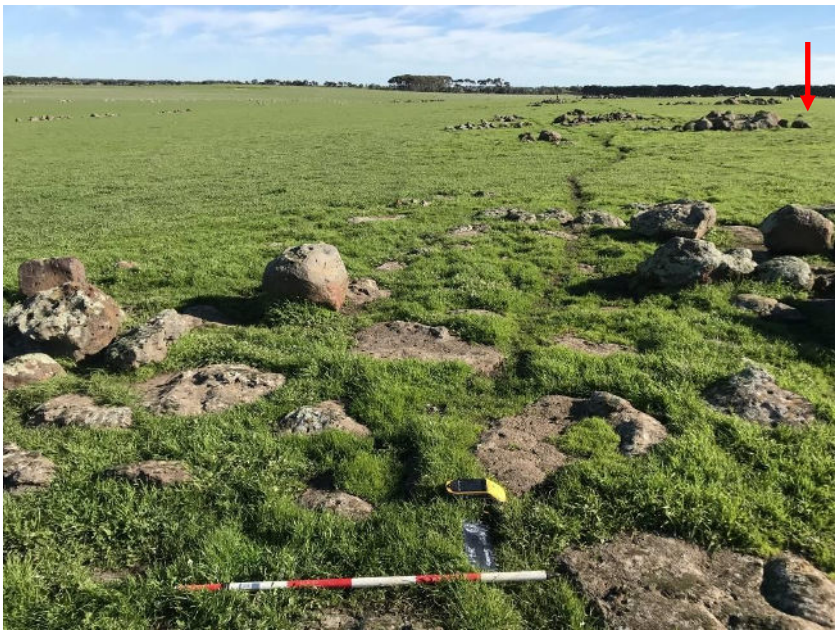


Photo 16

SA1: basalt outcropping along the northern upper slope margins of a former meadow / marsh which is located west of Mustons Creek, facing west. Note there is some stone aggregation in the background in the right of picture (red arrow).

Photo 17

SA1: view of former meadow / marsh from basalt outcrop, facing south.

Photo 18

SA1: mounds and drainage in former meadow / marsh at the southern end of Saleyards Road.

## Phase 2 – 2025

Ground surface visibility during the assessment ranged from fair to very good. Visibility was enhanced in pastured paddocks due to short vegetation cover maintained by livestock grazing and low rainfall, while crop paddocks were recently ploughed and seeded. The survey included an examination of 14 landscape features identified in the LiDAR report from LaTrobe University. Additionally, the assessment visited 14 new turbine locations, 2 meteorological (MET) mast locations, and the sites designated for one site compound, one concrete batching compound, and one quarry. No surface artifacts were recorded during this assessment.

Photo 19

SA1: proposed MET tower, northwest corner of the activity area. Very good GSV across a stony rise.

Photo 20

SA1: location of possible mound 82, identified by the LiDAR model. A thorough search did not reveal any evidence of a mound. GSV was very good. Determined to be a low relief stony outcrop.

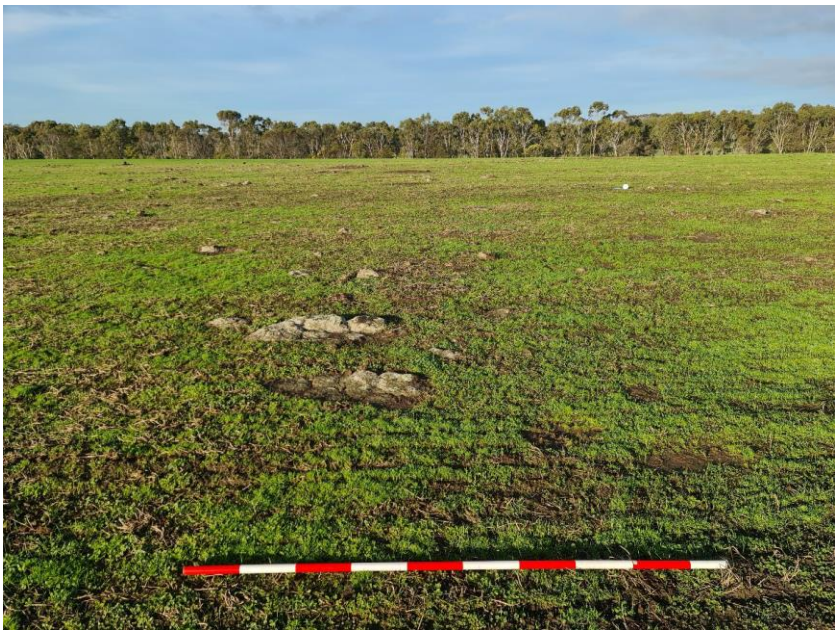


Photo 21

SA1: location of possible mound 44, identified by the LiDAR model. A thorough search did not reveal any evidence of a mound. GSV was very good in this location. Determined to be a low relief stony outcrop.

Photo 22

SA1: proposed location of Turbine 6. Freshly sown crop, GSV between rows was very good.

Photo 23

SA1: proposed location of Turbine 16. Drought affected crop, GSV was very good.

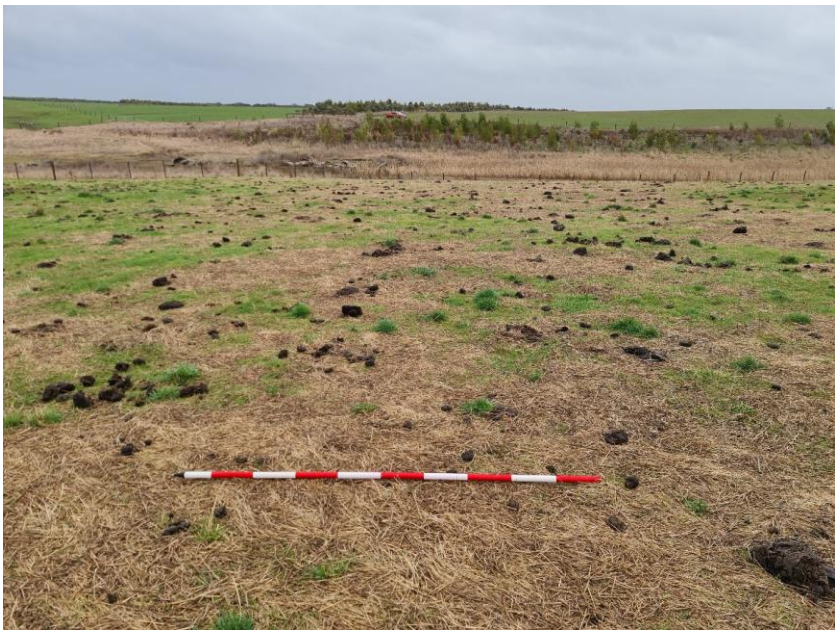


Photo 24

SA1: proposed location where the northwestern overhead lines will cross Mustons Creek. Drought affected crop, GSV was fair.

Photo 25

SA1: proposed location of the quarry. Stony rise throughout the whole paddock, GSV was good across the site, ranging from fair to excellent.

Photo 26

SA1: Location of possible mound 113, north of Turbine 11, GSV was very good. The ground was churned by cattle, and no evidence for a mound was observed.

Photo 27

SA1: location of possible mound 127, north of Turbine 17, GSV was very good. No evidence for a mound was observed. The location was identified as a stony rise.

Photo 28

SA1: location of a possible mound 117, corner of Emmersons and Keilors Rds. GSV was fair. No evidence for a mound was observed. The next 4 photos relate to a cluster in the same location.

Photo 29

SA1: Location of a possible mound 136. GSV was very good. No evidence for a mound was observed. Close-up of a feature in the landscape seen above.

Photo 30

SA1: Location of a possible mound 133. GSV was good. No evidence for a mound was observed.

Photo 31

SA1: location of a possible mound 135. GSV was fair. No evidence for a mound was observed. Close-up of a feature in the landscape seen above.

### 6.2.5.2 Survey Area 2 – Centre of the Activity Area

#### Phase 1 – 2019

The land comprises the volcanic plain to the west and south of Mustons Creek in the central part of the activity area. The SA is accessed to the north by Emersons Road off Keillor Road and to the south by Woolsthorpe-Hexham Road. No wind farm infrastructure is in close proximity to Mustons Creek with the closest turbine more than 1,000m to the south. There are two unnamed creek lines that drain the plain northwards to Mustons Creek. There are no large or deep former freshwater meadows, marshes or swamps in this SA.

The plain is typically flat. Ground surface visibility ranged from very poor to excellent. Excellent ground surface visibility was encountered along formed tracks and in ploughed fields. The fields have suffered disturbance typical for paddock improvement which has included the removal of basalt floaters and subsequent ploughing. The majority of the SA was subject to ploughing and ground surface visibility was dependent on the level of pasture grass cover.

Photo 32

SA2: example of excellent ground surface visibility in a ploughed paddock, facing north.

Photo 33

SA2: example of very good ground surface visibility at a proposed turbine location, facing west.

Photo 34

SA2: very good ground surface visibility in a ploughed paddock at a proposed turbine location.

Photo 35

SA2: ploughed paddock with good ground surface visibility, facing north.

Photo 36

SA2: very poor ground surface visibility in paddock. Note humps and hollows (bedding) ground treatment to mitigate waterlogging of soils.

Photo 37

SA2: basalt floaters outcropping along the proposed powerline route, facing east.

Photo 38

SA2: stone aggregation and good ground surface visibility at a stock watering trough.

Photo 39

SA2: view along powerline route toward drainage line, facing west.

Photo 40

SA2: example of stone aggregation from paddock improvement.

Photo 41

SA2: basalt floaters in the paddock for the proposed terminal station to connect to the overhead transmission line.

## Phase 2 – 2025

Ground surface visibility during the survey varied from poor to excellent. Excellent visibility was found along formed tracks and in recently ploughed fields. The fields showed evidence of extensive disturbance, including the removal of basalt floaters and subsequent ploughing for paddock improvement. This stage of the survey focused on specific infrastructure developments and features identified through LiDAR data. The team visited 7 of the features identified in the LiDAR data, as well as 4 new turbine locations, a concrete batching compound, a site compound, the location of the battery, and the substation.

Photo 42

SA2: location of possible mound 213, South of Turbine 33. GSV was very good. The dark soil colour appears to be associated with the removal of basalt floaters across this low profile basalt exposure.

Photo 43

SA2: location of possible mound 165, south of Turbine 23. GSV was very good. No evidence for a mound was observed.

Photo 44

SA2: proposed location of Turbine 35. Freshly sown beans, GSV was excellent.

Photo 45

SA2: access route between Turbine 37 and Turbine 43, GSV was very good.

Photo 46

SA2: proposed location of overhead powerlines north of Turbine 43. Drought affected crop, GSV was very good.

Photo 47

SA2: proposed location of the concrete batching compound, directly south of Turbine 43. Low profile basalt exposure, GSV was very good.

Photo 48

SA2: rock dump of basalt at the proposed location access off Woolsthorpe-Hexham Rd, to the substation. GSV was fair.

Photo 49

SA2: proposed access from Woolsthorpe-Hexham Rd to the overhead powerlines at Turbine 43, GSV was very good.

Photo 50

SA2: location of possible mound 333, west of the Coomete access gate. GSV was very good. No evidence for a mound was observed, substantial stony rise.

Photo 51

SA2: Location of possible mound 335, west of the Coomete access gate. GSV was very good. No evidence for a mound was observed, substantial stony rise.

Photo 52

SA2: Location of possible mound 334, west of the Coomete access gate. GSV was very good. No evidence for a mound was observed, substantial stony rise.

Photo 53

SA2: large agricultural drain across the floodplain at the proposed location of the substation. GSV was fair.

#### 6.2.5.3 Survey Area 3 – South of the Activity Area

##### Phase 1 – 2019

The land comprises the volcanic plain in the south of the activity area. The SA is accessed to the north from Woolsthorpe-Hexham Road, to the east from Hexham-Ballangreich Road and to the south from Cooramook Lane off Gordons Lane, and to the west off Grassmere-Hexham Road. Immigrants Lane runs east to west across the northern part of the SA. Hopkins River runs along part of the eastern boundary of this SA with the closest turbine approximately 500m to the west. The headwaters of Lyall Creek and Drysdale Creek drain the plain to the south and out of the activity area.

Ground surface visibility was typically poor with occasional patches of good to excellent ground surface visibility in ploughed paddocks, along access tracks and at windrows. Gilgai were identified in some paddocks (eg Photo 57) evidence by numerous small mounds and hollows across the paddock and are clearly not of Aboriginal origin.

Photo 54

SA3: powerline alignment passes along the northern margins of a low-lying possible former freshwater meadow, facing south.

Photo 55

SA3: stony rise overlooking low-lying floodplain, facing west.

Photo 56

SA3: example of artificial drainage line cut to drain low-lying land.

Photo 57

SA3: example of very poor ground surface visibility in paddock with gilgai, facing north.

Photo 58

SA3: access track facing west.

Photo 59

SA3: undulating land north of Lyall Creek, facing west.

Photo 60

SA3: pugged ground surface on the floodplain north of Drysdale Creek, facing north. Elevated land is in the background.

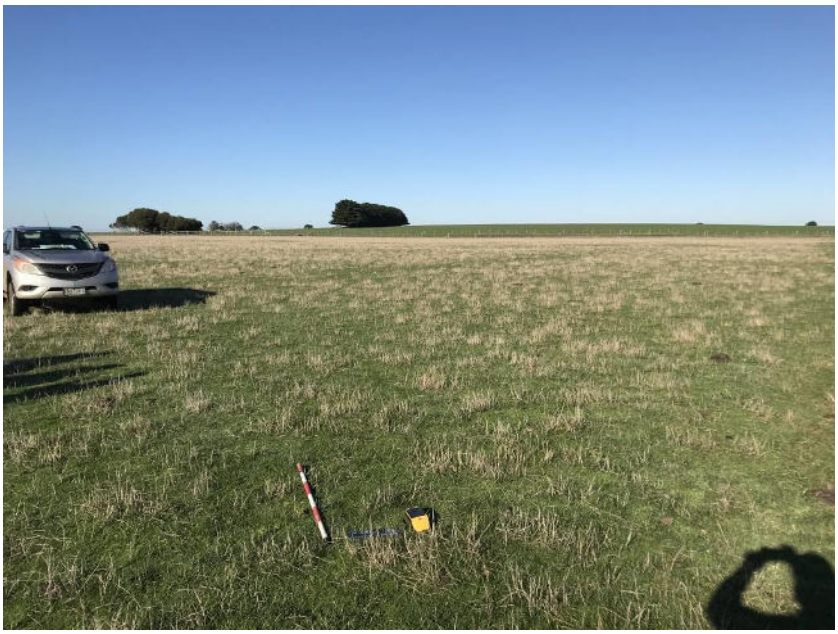


Photo 61

SA3: view of rise in background, facing south.

Photo 62

SA3: Red Gum on floodplain between Hexham-Ballangeich Road and Hopkins River

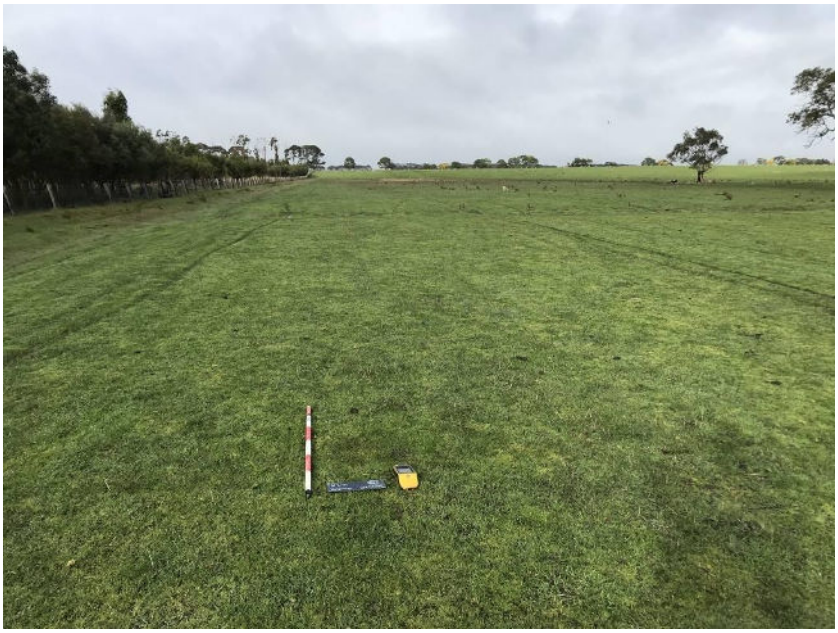


Photo 63

SA3: floodplain in the foreground and elevated land in the background, facing south.

Photo 64

SA3: plain under crop with elevated land in the background, facing west.

Photo 65

SA3: flooded access track east of Cooramook Lane, facing south.

Photo 66

SA3: basalt outcropping along access track east of Cooramook Lane, facing north.

## Phase 2 – 2025

Ground surface visibility was generally good to very good, with the poor visibility only in areas located in the marshes adjacent to the Hopkins River. The survey focused on new infrastructure, visiting a concrete batching compound, a site compound, 21 turbine locations, and 2 MET masts. Furthermore, 6 features identified in the LiDAR data were examined during the assessment.

Photo 67

SA3: location of possible mound 336, adjacent to the overhead powerlines, between Woolsthorpe-Hexham Rd and Immigrants Ln. GSV was very good. No evidence for a mound was observed, low profile basalt exposure.

Photo 68

SA3: proposed alignment of the overhead powerlines to the southern segment of the project, south of the possible mound 336. GSV was very good.

Photo 69

SA3: proposed location of Turbine 96, south of Turbine 88. Drought affected grasses, recently ploughed. GSV was good.

Photo 70

SA3: access from Immigrants Ln to proposed locations of Turbines 97 and 102. GSV was very good to excellent.

Photo 71

SA3: proposed location of Turbine 109, east of Hexham-Ballangeich Rd. On the flood plains west of Hopkins River. Small gilgai or crabholing visible with micro-mounds across the surface. GSV was fair.

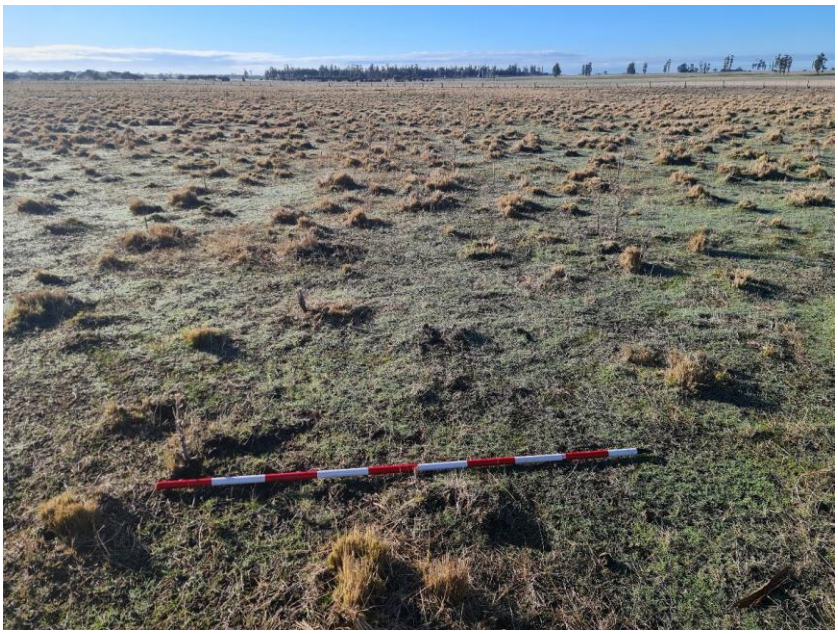


Photo 72

SA3: proposed location of Turbine 108, east of Hexham-Ballangeich Rd. On the flood plains west of Hopkins River. GSV was fair.

Photo 73

SA3: access from Hexham-Ballangeich Rd to proposed locations of Turbines 94 and 103. Recently ploughed, GSV was very good to excellent.

Photo 74

SA3: proposed location of Turbine 103, south of Hexham-Ballangeich Rd, and Turbine 96. Small gilgai or crabholing visible with micro-mounds across the surface. GSV was good.

Photo 75

SA3: location of possible mound 459, adjacent to the MET mast. GSV was good. No evidence for a mound was observed.

Photo 76

SA3: proposed location of MET mast, north of Gordons Ln. GSV was good.

Photo 77

SA3: location of possible mound 344, adjacent to Turbine 63. GSV was good. No evidence for a mound was observed.

Photo 78

SA3: location of proposed concrete batching compound, south of Immigrants Ln. freshly ploughed and seeded, GSV was very good to excellent.

#### 6.2.5.4 Survey Area 4 – Northeast of the Activity Area

##### Phase 1 – 2019

A large proportion of the SA has been subject to improvement. The low-lying land including any former freshwater meadows, marshes or swamps have been drained. Paddocks have had basalt floaters removed and ploughed for crops including animal fodder. There are limited areas of unmodified ground.

Ground surface visibility was generally poor due to grass and crops in paddocks. Good to excellent ground surface visibility was encountered where paddocks were recently ploughed or crops were not fully grown.

Photo 79

SA4: cropped paddock south of Mustons Creek at proposed turbine location, facing north.

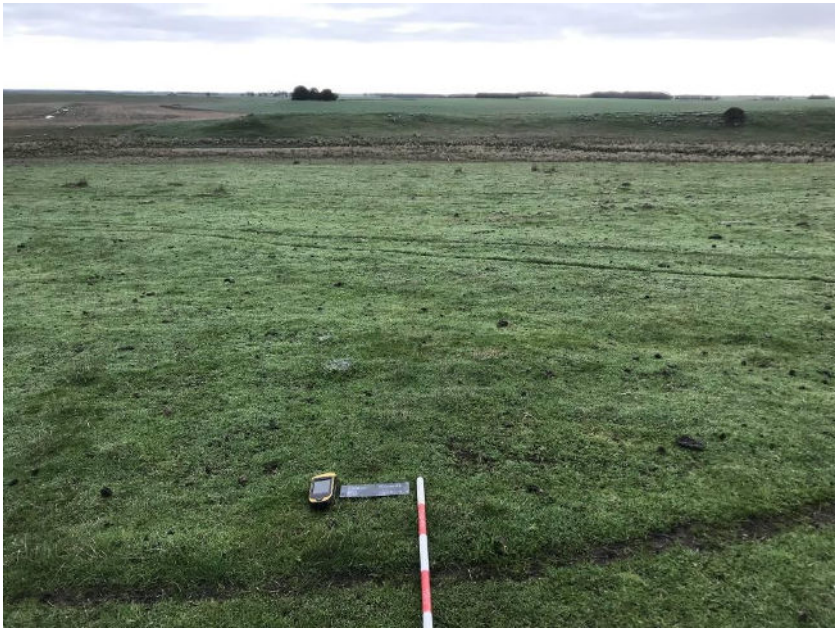


Photo 80

SA4: Gentle slope between the access track to the south and Mustons Creek to the north which is in the background.

Photo 81

SA4: mound VAHR 7421-0080 recorded east of Mustons Creek below confluence with Tea Tree Creek, facing north.

Photo 82

SA4: view upstream along Mustons Creek from proposed turbine location. Note stone aggregation in the foreground and the terrace in the background.

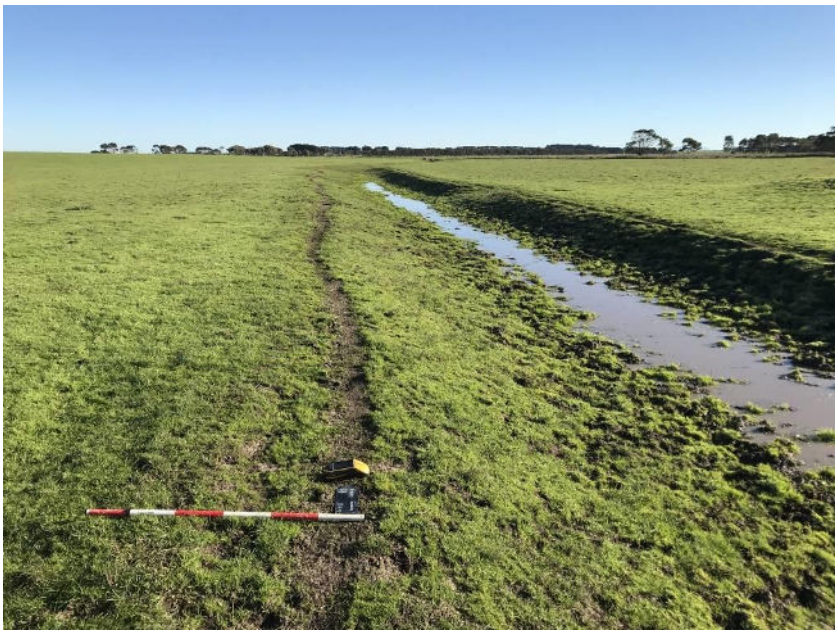


Photo 83

SA4: view of artificial drain and floodplain. Excellent ground surface visibility along a stock track.

Photo 84

SA4: turbine on elevated land adjacent to drainage line, facing north.

Photo 85

SA4: mature Red Gum near a proposed turbine location.

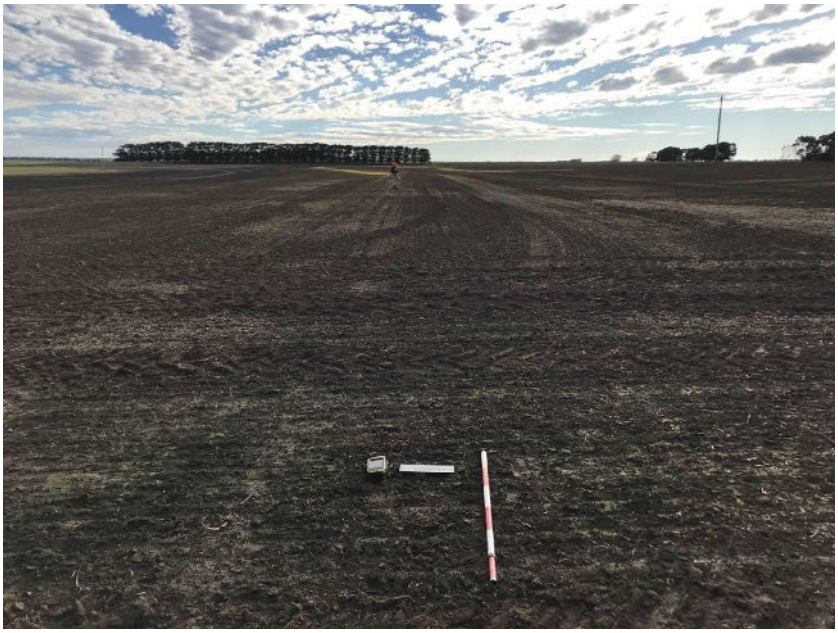


Photo 86

SA4: example of excellent ground surface visibility in recently ploughed paddock off Narong Lane and east of Limestone Creek, facing north.

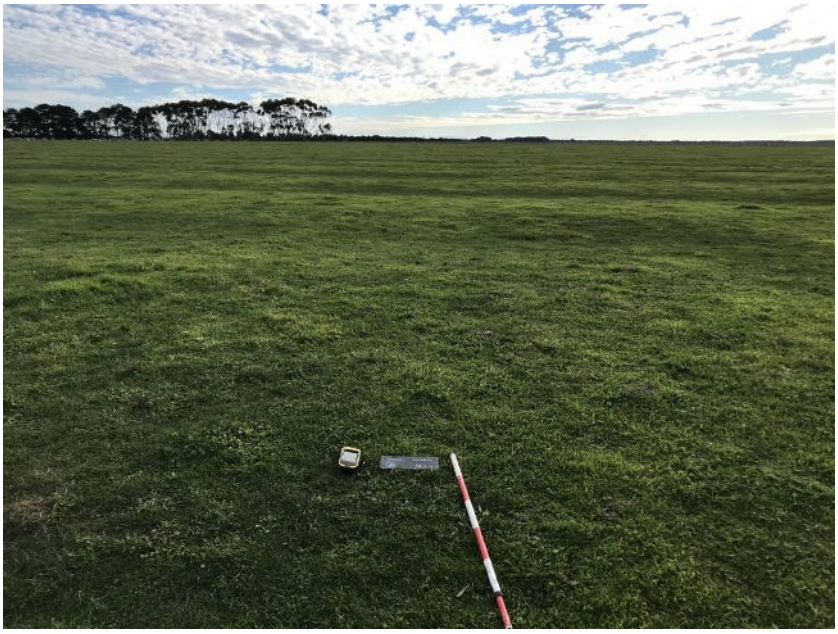


Photo 87

SA4: humps and hollows (bedding) in paddock north of Narong Lane and east of Limestone Creek, facing north.

Photo 88

SA4: proposed access track west of Limestone Creek, facing south. GSV very good to excellent.

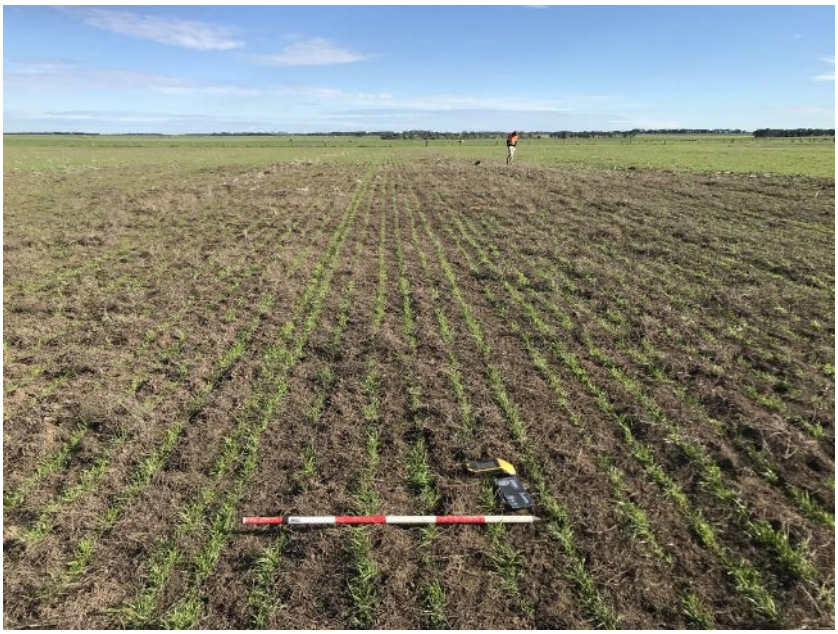


Photo 89

SA4: proposed turbine location west of Limestone Creek, facing west. Good ground surface visibility due to ploughing.

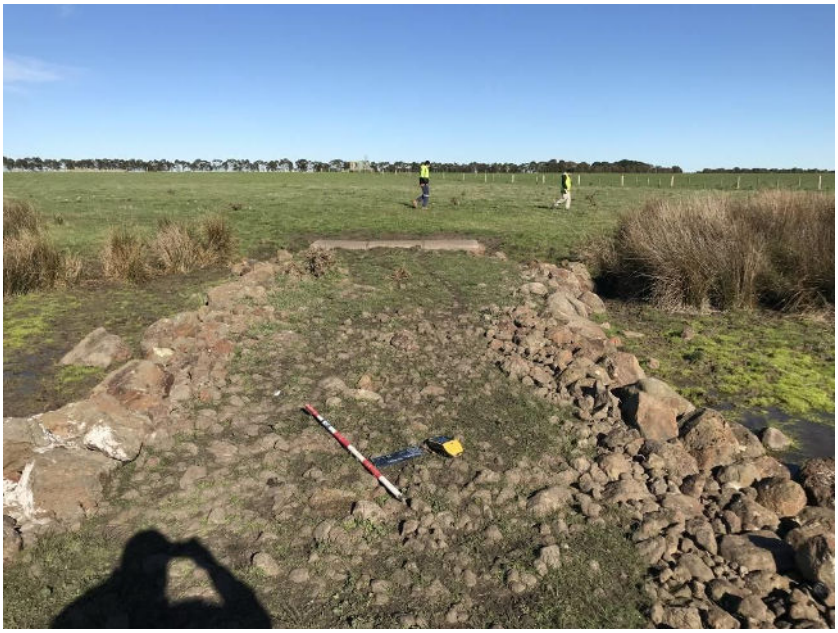


Photo 90

SA4: stone ford across Limestone Creek, facing southwest.

Photo 91

SA4: proposed turbine location on the flat volcanic plain, east of Tea Tree Creek and south of the Hamilton Highway, facing north. Note the excellent ground surface visibility.

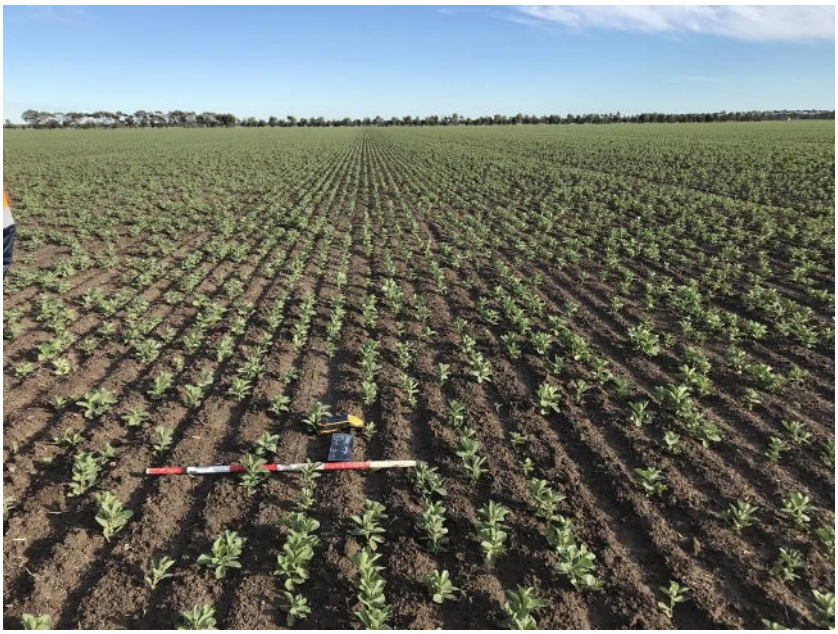


Photo 92

SA4: proposed compound area 1,000m south of Hamilton Highway and 1,000m east of Limestone Creek, facing west. Note the excellent ground surface visibility.

## Phase 2 – 2025

Ground surface visibility during the survey was considered fair, a condition attributed to below-average rainfall. This assessment focused on documenting new infrastructure and key features identified from previous LiDAR data. The survey team visited a total of 23 turbine locations, one site compound, and one MET mast. Additionally, 17 specific features identified in the LiDAR data were examined.

### Photo 93

SA4: proposed location of Turbine 57. GSV was very good to excellent.

### Photo 94

SA4: proposed laydown area, adjacent to Turbine 80. GSV was fair.

Photo 95

SA4: proposed location of Turbine 80. GSV was very good.

Photo 96

SA4: location of possible mound 331. GSV was good. No evidence for a mound was observed, appears to be a rock dump from early land clearing.

Photo 97

SA4: location of possible mound 327, near to where access routes will cross Mustons Ck. GSV was fair.

Photo 98

SA4: proposed location of Turbine 52. Freshly ploughed and seeded, GSV was very good.

Photo 99

SA4: location of possible mound 309. GSV was poor. Observable features include a slight mound, changes in soil consistency, and vegetation.

Photo 100

SA4: location of possible mound 313. GSV was poor to good. Location appears to be a stone aggregation.

Photo 101

SA4: location of possible mound 315. GSV was poor. Appears to be a small cluster of basalt adjacent to possible mound 313.

Photo 102

SA4: location of possible mound 316. GSV was poor to good. Location appears to be a stony rise, could even be a result of land clearing.

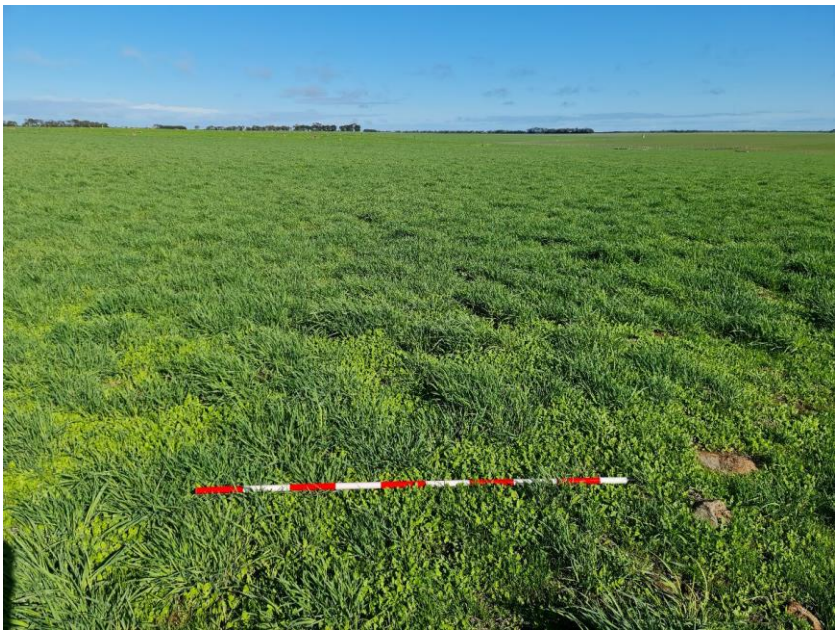


Photo 103

SA4: location of possible mound 317. GSV was poor. Appears to be a small cluster of basalt adjacent to possible mound 316.

Photo 104

SA4: location of possible mound 349. GSV was good. No evidence for a cultural mound was observed.

### 6.2.6 Standard Assessment Predictive Model and Areas of Archaeological Potential

#### Phase 1 – 2019

No new Aboriginal cultural heritage was found which could be attributed partially to generally poor ground surface visibility. Nonetheless, the standard assessment was able to identify landform and assess them in relation to strategic values in order to determine whether they had low, moderate or high archaeological potential.

Based on the results of the desktop and standard assessment, it was predicted that mounds and stone artefact sites were the most likely Aboriginal place type to be present. Other Aboriginal place types are considered unlikely to be present, that is, there is only low potential for them to be present. All mature indigenous trees were inspected for Aboriginal cultural scars, but no cultural scars were identified. There was no evidence of stone features (stone arrangements, grinding grooves, etc), and dunes (eg, lunettes) for Aboriginal burial, freshwater middens, stone quarries, rock art, etc.

#### Phase 2 – 2025

The Phase 2 standard assessment was focussed specifically on areas where the windfarm infrastructure has been relocated since the 2019 standard assessment. Land use within the survey area is dominated by modern farming practices, which have remained largely unchanged since the 2019 assessment. The land is primarily used for grazing, with some paddocks freshly ploughed and seeded for improved pasture. Ground surface visibility was generally fair to very good, assisted by short vegetation cover maintained by livestock grazing and low rainfall, as well as recent ploughing or seeding of some crops. These conditions provided better than expected ground surface visibility for the identification of surface cultural heritage material.

Natural gilgai mounds were observed (eg Photo 57) and are clearly not of Aboriginal origin and supports the idea that some mound features in the activity area may be attributed to gilgai processes which Williams herself acknowledge. Gilgai are formed by the swelling and shrinking of expansive clays in response to changes in moisture content.

The floodplains of Mustons Creek, Station Creek, Tea Tree Creek, and Hopkins River have been significantly altered by ongoing agricultural activity. Seasonal ploughing has transformed the landscape, reducing the prominence of many minor landforms. This ground disturbance has likely had a significant impact on the integrity and distribution of any potential surface archaeology, as ploughing will often lead impact the dispersal of material throughout the plough zone.

During the assessment, 41 features identified in the LiDAR data were investigated. Ground-truthing revealed that many of these features were not likely cultural mounds but rather natural formations such as stony rises or low-profile basalt exposures. In other instances, soil discoloration was observed, which appeared to be attributed to the removal of large basalt floaters (which results in subsoil being thrown up onto the surface, similar to soil throw when trees fall) or extensive agricultural earth-moving activities. A smaller number of the investigated points corresponded to rock dumps, likely created during land clearing since historic occupation. Additionally, many of the identified points appeared to be a single point chosen of a series of waves across the ground surface, which are likely associated with natural pedological processes. One location, encompassing two mound features, appears likely to satisfy the attributes of a cultural mound based on microtopography only. Given the large-scale land use practices in place, it is not unexpected that many of the locations identified by the LiDAR data did not show any evidence for the remains of cultural mounds.

The lack of any newly identified surface artefacts is likely a result of several factors, including the long history of intensive land use and agricultural disturbance, particularly ploughing, but also irrigation practices. While the potential for subsurface material remains, the consistent churning of the topsoil has effectively blurred the boundaries of any potential archaeological features and dispersed any surface artefacts that may have once been present.

## Summary

The results of the combined standard assessments means that the desktop site prediction statements can be refined. Although ground surface visibility varied widely throughout the activity area, where fair and above ground surface visibility was encountered, some surface evidence for mounds could be expected to be present and detected during the ground surface survey. Ground surface visibility was sufficient throughout the activity area to identify micro-topographic evidence for mounds, if any height remained. Despite generally good ground surface visibility, no stone artefacts or evidence of mounds (eg, darker sediments, dispersed clay balls, bone, mollusc shells, or heat-treated stone artefacts) were found in the ground disturbance footprint.

A number of factors can be proposed to account for no unequivocal surface evidence being detected.

1. The linear nature of the ground disturbance footprint, the avoidance of previously registered sites, and the general avoidance of land within 200m of waterways may have reduced the likelihood of surface stone artefacts and mounds being present.
2. Areas of very poor to poor ground surface visibility may have obscured stone artefacts and evidence of mounds.

3. Historical land use, in particular, ploughing for the planting of crops and pasture improvement, may have dispersed the evidence of mounds making them harder to detect even when fair to excellent ground surface visibility was encountered during the ground survey.

Areas of archaeological potential comprise the following:

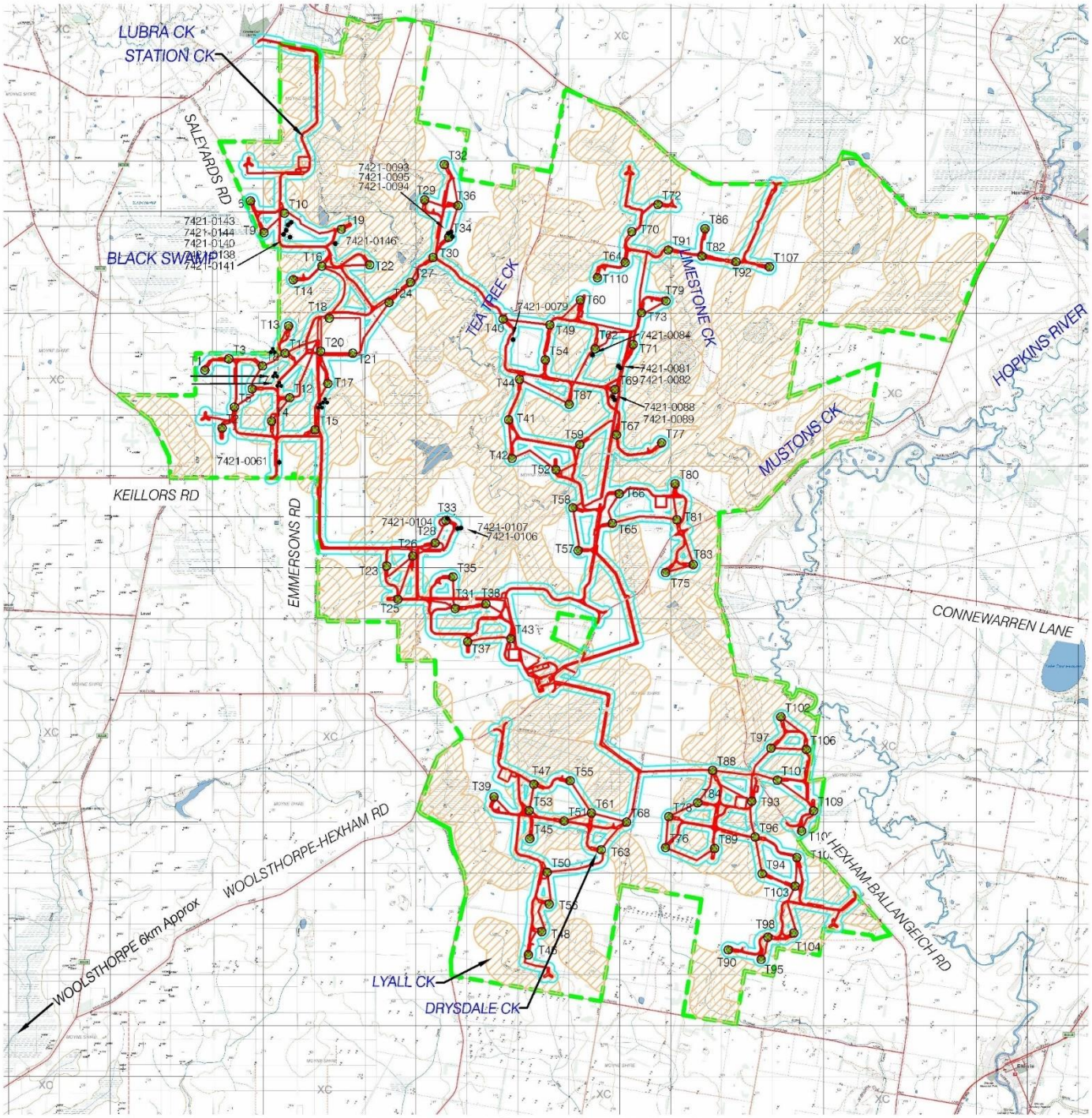
1. Previously recorded stone artefact scatters.
2. Previously recorded cultural mounds.
3. Terraces and any associated stony rises along Hopkins River, Mustons Creek, Station Creek, Tea Tree Creek, Lyall Creek and Drysdale Creek.
4. Elevated land, such as ridgelines, stony rises and stony outcrops.

Based on the desktop and standard assessments, the following predictive model has identified the following areas of archaeological potential:

**Table 14 Standard Assessment Predictive Model and Areas of Archaeological Potential**

| Aboriginal Cultural Heritage | Landform / Location Archaeological Potential | Details |
|---|---|---|
| Stone artefacts | Registered sites<br>High | Registered stone artefact sites are considered to have high potential for additional stone artefacts unless demonstrated otherwise by complex assessment. No registered stone artefact site locations are to be impacted by the project. |
| | Terraces and any associated stony rises along waterways<br>High | The main waterways that drain the volcanic plains likely provided potable water during periods of rainfall and locations for Aboriginal groups to conduct activities that result in the discard of stone artefacts (eg, repairing hunting toolkits). Terraces and any associated stony rises above the floodplains would have been optimal locations because they would have been drier and afford views across the landscape. |
| | Stony rises & stony ridgelines above floodplains (eg proposed quarry)<br>Moderate to High | Stony rises and stony ridgelines above floodplains would have provided elevated dry locations with views across floodplains. These were good locations to observe the surrounding landscape for game and to repair hunting toolkits. |
| | Stony outcrops<br>Moderate | Stony outcrops with low elevation may have provided local dry areas to conduct short term events such as incidental toolkit repair and maintenance. |
| | Floodplains<br>Low | Floodplains were not optimal locations for camping or long-term visits. They were likely locations traversed while Aboriginal groups were travelling from one location to another. However isolated stone artefacts can be found in any landform, therefore these landforms are considered to have low archaeological potential for stone artefacts. |

| Aboriginal Cultural Heritage | Landform / Location Archaeological Potential | Details |
|---|---|---|
| | Level plain away from waterways<br>Low | The level plain away from waterways was not a optimal location for camping or long-term visits as it lacks resources such as potable water. However isolated stone artefacts can be found in any landform, therefore the level plain is considered to have low archaeological potential for stone artefacts. |
| Mounds | Registered sites<br>High | Registered sites are considered to have high potential for Aboriginal cultural heritage typically associated with mounds unless demonstrated otherwise by complex assessment |
| | LiDAR anomalies<br>Low | The LiDAR investigation identified anomalies that may be mound sites. The locations inspected during the standard assessment phase 2 found no surface evidence of mounds. They are unlikely to be mounds unless demonstrated otherwise by complex assessment. |
| | Low rises and undulations<br>Low | In the geographic region, a higher proportion of mounds have been recorded on low rises and undulation compared to the plain / floodplain landform. During the standard assessment no evidence of mounds was found on low rises or undulations and therefore these landforms are considered to have low archaeological potential for mounds. However, due to variable ground surface visibility encountered during the ground survey and historical land use practices (eg ploughing), dispersed evidence of mounds may still be present in the ground disturbance footprint. |
| | Floodplains<br>Low | In the geographic region, a lower proportion of mounds were recorded on floodplains. During the standard assessment, no evidence of mounds was found on the floodplains and therefore these landforms are considered to have low archaeological potential for mounds. However, due to variable ground surface visibility encountered during the ground survey and historical land use practices (eg ploughing), dispersed evidence of mounds may still be present in the ground disturbance footprint. |
| Stone arrangements | Tributaries draining to the main waterways<br>Low | The likelihood of further arrangements being identified is low however, as this form of cultural heritage would likely have already been previously identified or have been destroyed by stone removal and aggregation by historic land use practices. |
| Scarred trees | Remnant mature indigenous trees<br>Low | All mature indigenous trees within the infrastructure footprint were inspected for Aboriginal cultural scarring, but no new trees were identified. |
| Ancestral remains | Dunes, lunettes, sandsheets & mounds<br>Low | No evidence of dunes, lunettes or sand sheets were identified during the standard assessment because they are more than 400m from any infrastructure. Due to variable ground surface visibility, it is possible that unidentified dispersed mounds may be associated with Ancestral remains, although the potential is considered low. |




Aerial Photograph Courtesy of DPI Website 2013

Activity Area Boundary
16,103 hectares (approx)

Area of Works (100m buffer)

Infrastructure

Turbine

Meterological (MET) Mast

Artefact Scatter

Earth Feature; Mound

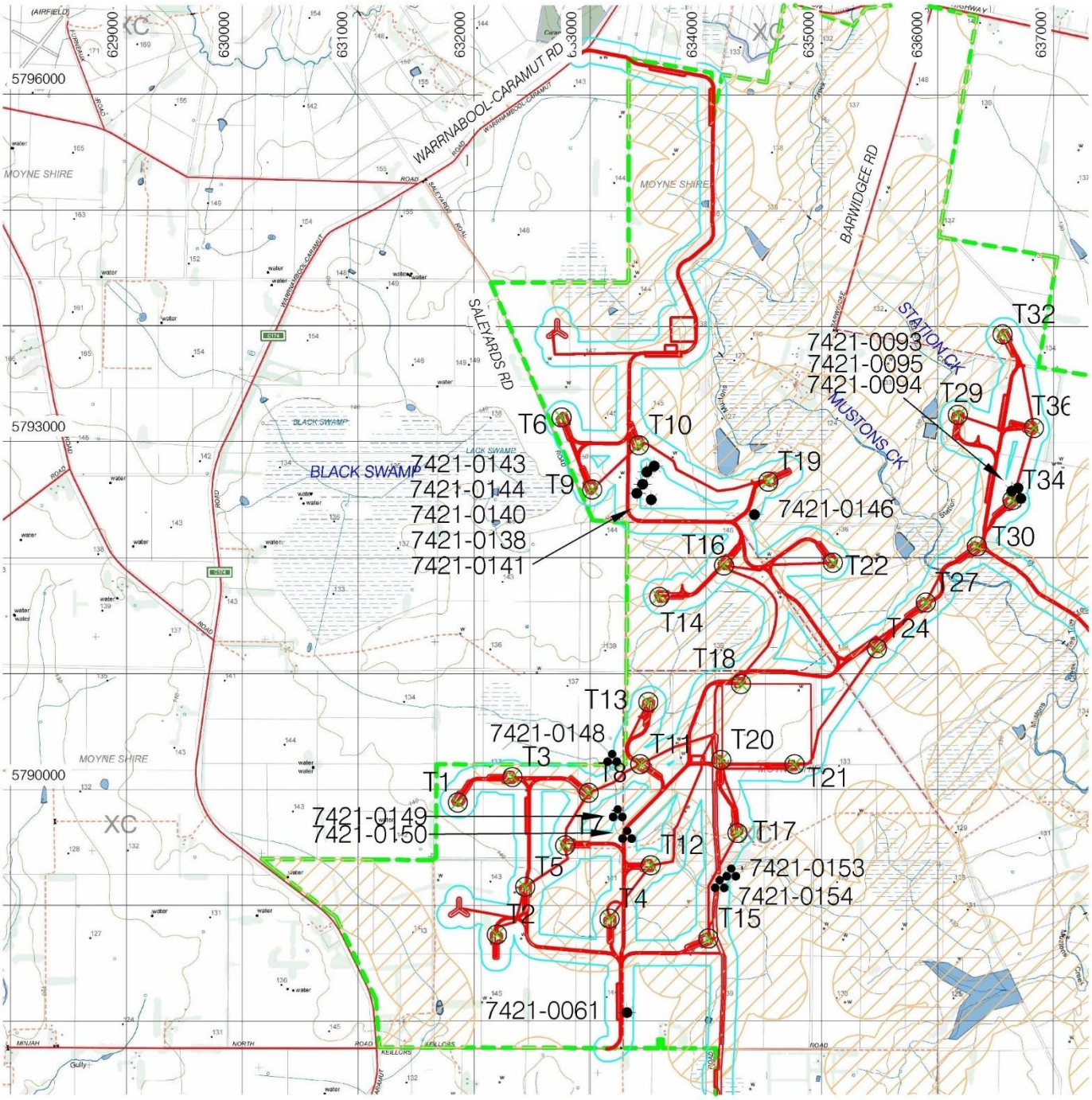
Earth Feature
VAHR 7421-xxxx

Archaeological Potential

0 1 2 3
Scale of Kilometres

N
GDA94
MGA Zone 54

**Map 6a Standard Assessment Predictive Model and Areas of Archaeological Potential**




Department of Jobs, Precincts and Regions

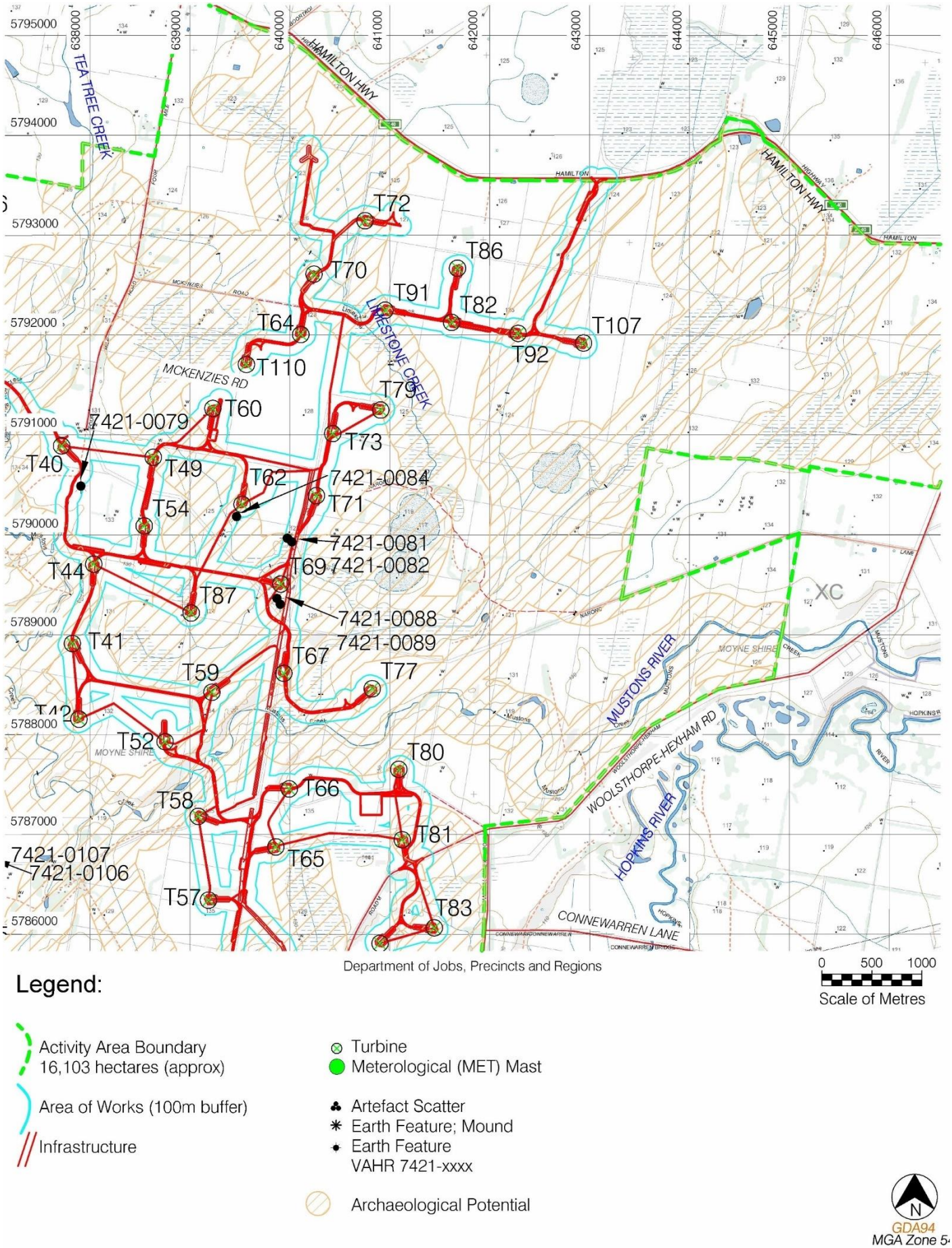
0 500 1000
Scale of Metres

## Legend:

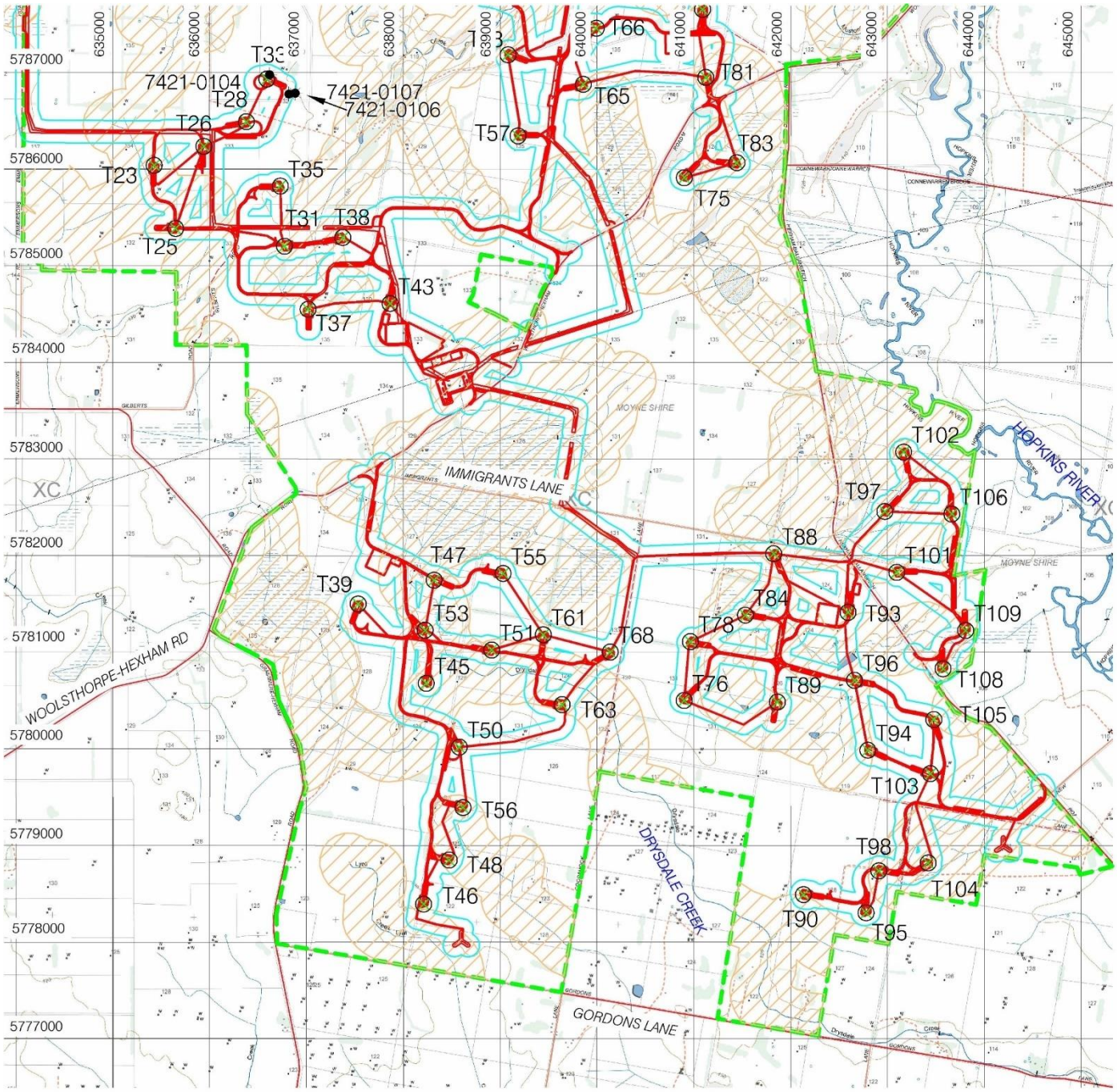
- Activity Area Boundary 16,103 hectares (approx)
- Area of Works (100m buffer)
- Infrastructure
- Turbine
- Meterological (MET) Mast
- Artefact Scatter
- Earth Feature; Mound
- Earth Feature VAHR 7421-xxxx
- Archaeological Potential

N
GDA94
MGA Zone 54

**Map 6b Standard Assessment Predictive Model and Areas of Archaeological Potential (Northwest)**




**Map 6c Standard Assessment Predictive Model and Areas of Archaeological Potential (Northeast)**




Department of Jobs, Precincts and Regions

**Legend:**

0 1000 2000
Scale of Metres

Activity Area Boundary
16,103 hectares (approx)

Turbine
Meterological (MET) Mast

Artefact Scatter
Earth Feature; Mound
Earth Feature
VAHR 7421-xxxx

Archaeological Potential

N
GDA94
MGA Zone 54

**Map 6d Standard Assessment Predictive Model and Areas of Archaeological Potential (South)**

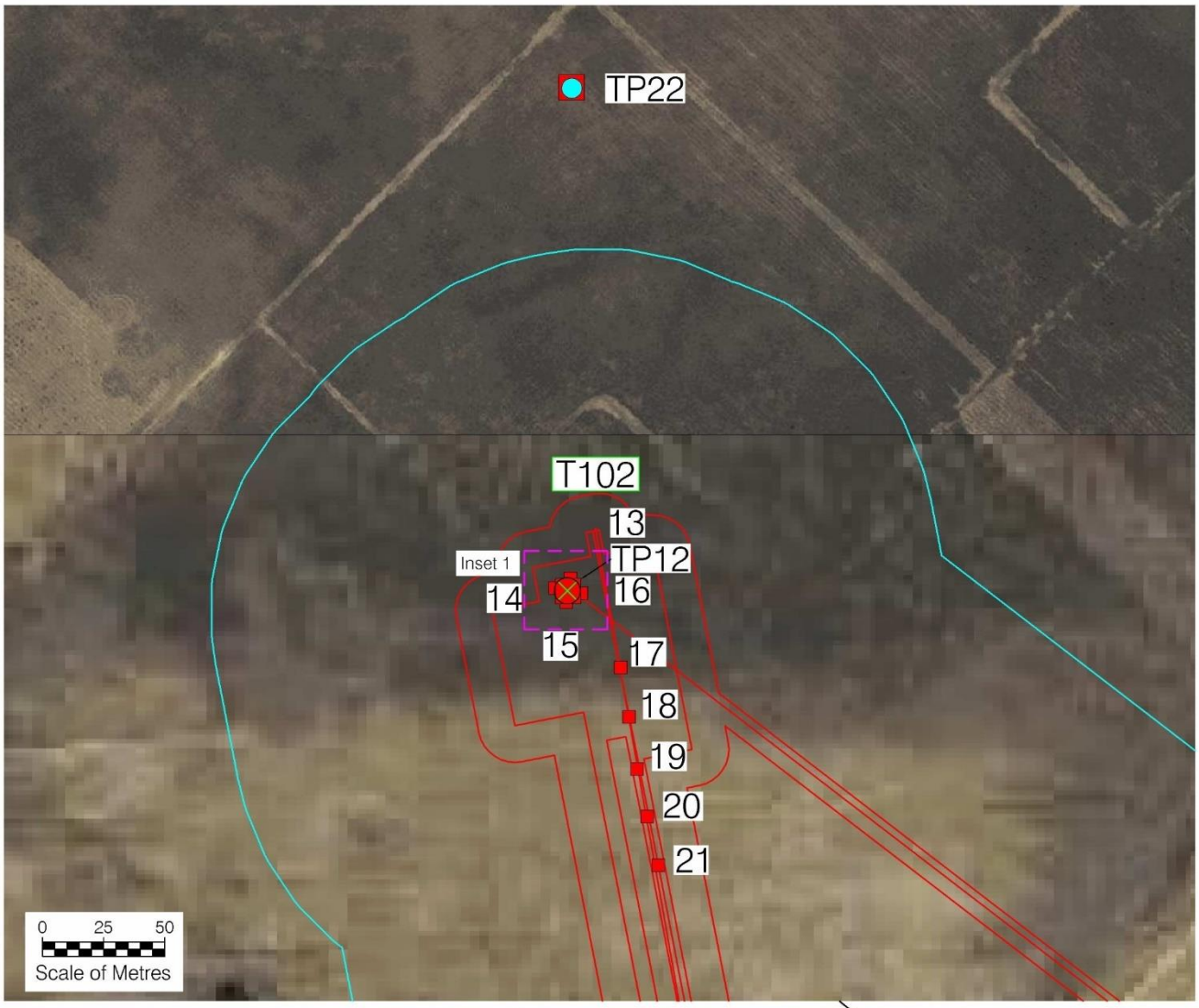
## 6.3 Complex Assessment

A complex assessment (subsurface testing excavations) was conducted over four weeks from 18 August to 12 September 2025.

### 6.3.1 Aims and Methodology

The aim of the complex assessment was to test the conclusions of the LiDAR investigation and the standard assessment site predictions by conducting a program of hand excavated 1m x 1m test pits (TPs) and 0.5m x 0.5m shovel test pits (STPs) at several locations as follows:

1. Excavations at turbine T102 (TP12 & STPs13-16), access track (STPs14-21) and possible mound to the north (TP22) (Map 7a). The excavations test the potential for mounds based on the LiDAR investigation and the level plain landform.
2. Excavations at turbine T38 (TP23 & STPs24-27, possible mounds to the east (TPs28-31) and access track to the east (STPs32-37) (Map 7b). The excavations test the potential for mounds based on the LiDAR investigation and the level plain landform.
3. Excavations at turbine T33 (TP44 & STPs45-48), access track (STPs49-59) (Map 7c). The excavations test the potential for mounds based on the LiDAR investigation and the level plain landform.
4. Excavations at turbine T27 (TP67 & STPs68-71) and T30 (TP111 & STPs107-110) and access track (STPs72-06) (Map 7d). The excavations test the terrace and floodplain landform at the most strategic waterway in the activity area, Mustons Creek.
5. Excavations at the proposed quarry (TP1 & STPs2-40) (Map 7d). The excavation tested the stony ridgeline / rises landform, swale and surrounding floodplain.




Aerial Photograph Courtesy of DPI Website 2013

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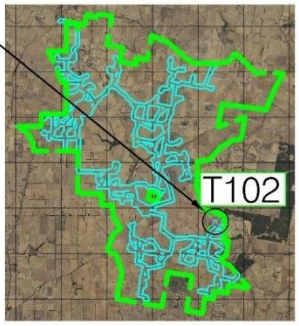
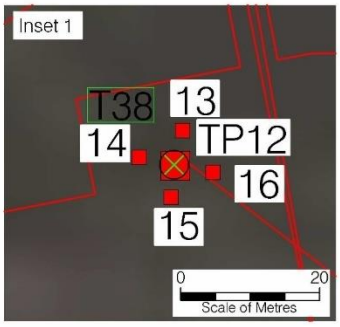
MGA Zone 54



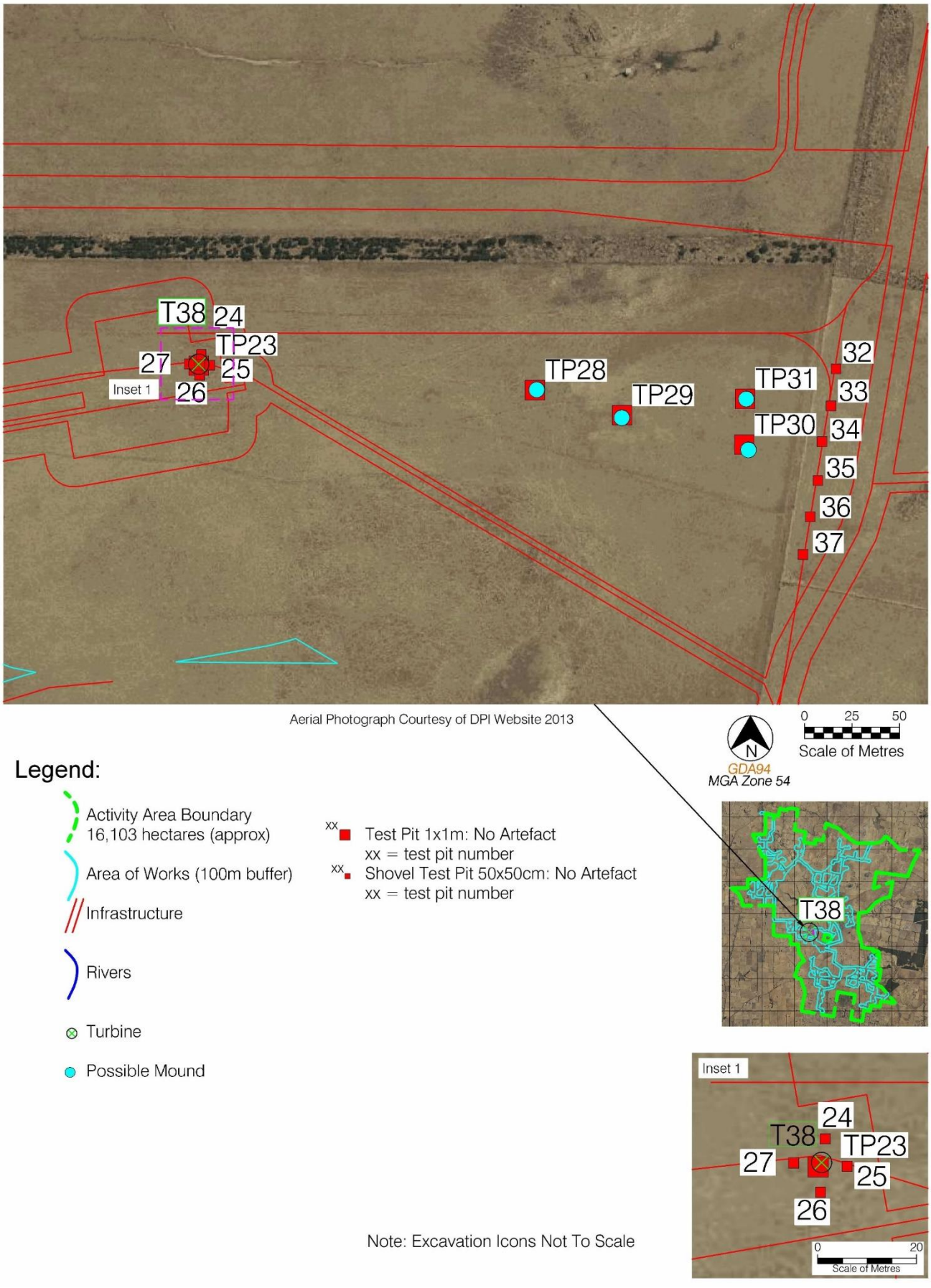

Legend:

- Activity Area Boundary 16,103 hectares (approx)
- Area of Works (100m buffer)
- Infrastructure
- Rivers
- Turbine
- Possible Mound
- xx ■ Test Pit 1x1m: No Artefact xx = test pit number
- xx ■ Shovel Test Pit 50x50cm: No Artefact xx = test pit number

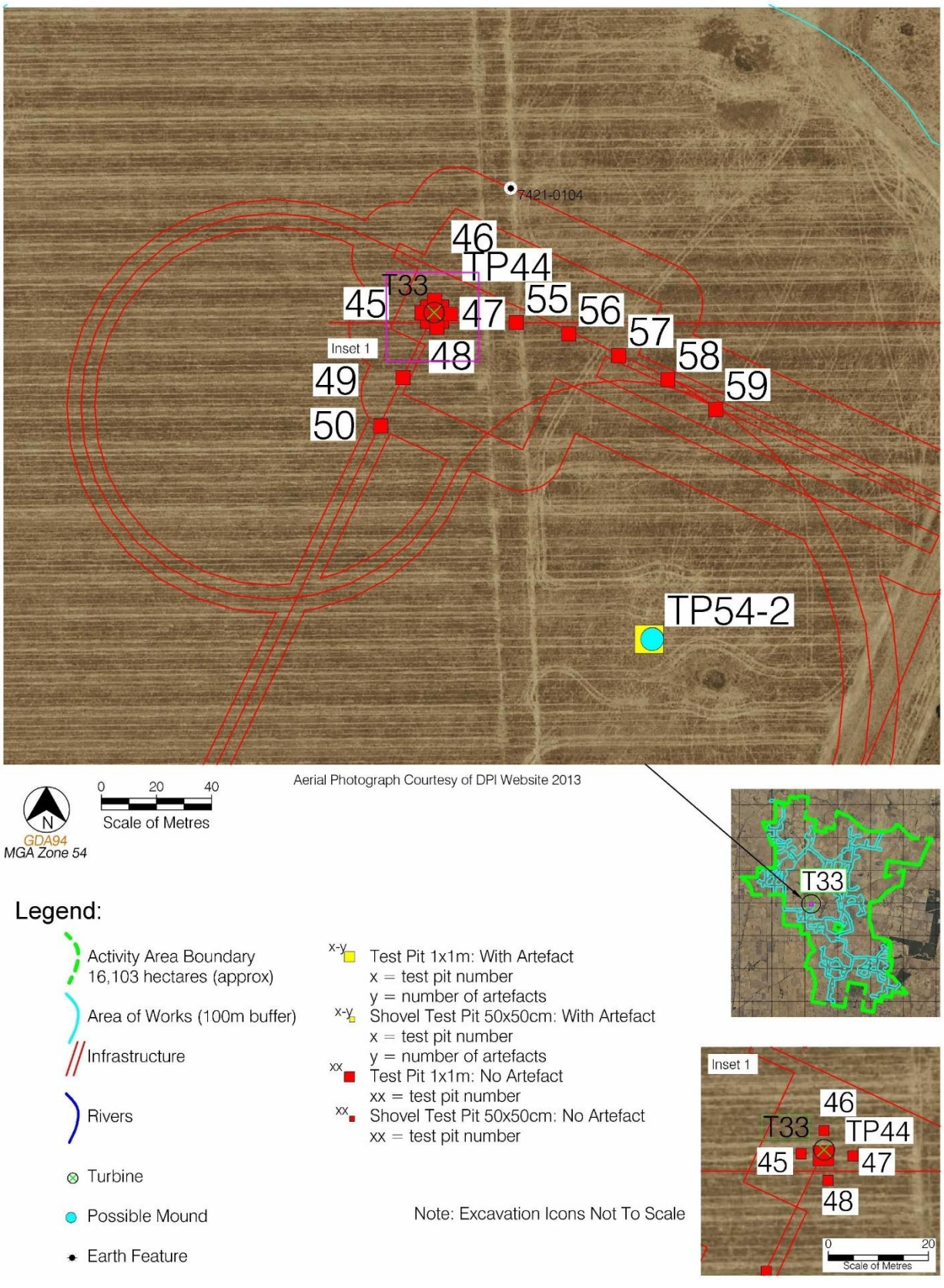
Note: Excavation Icons Not To Scale



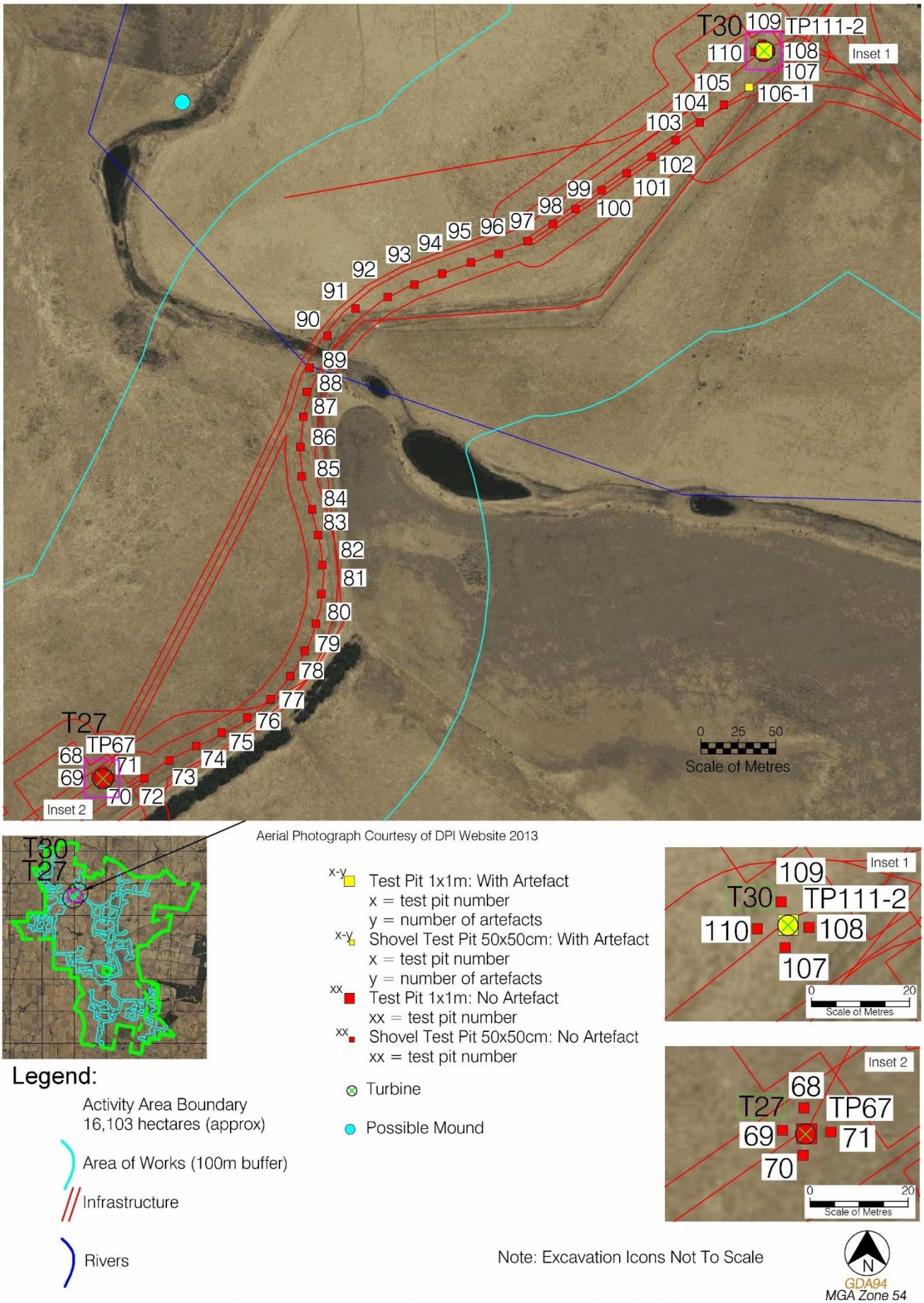

**Map 7a Excavations at Turbine T102**



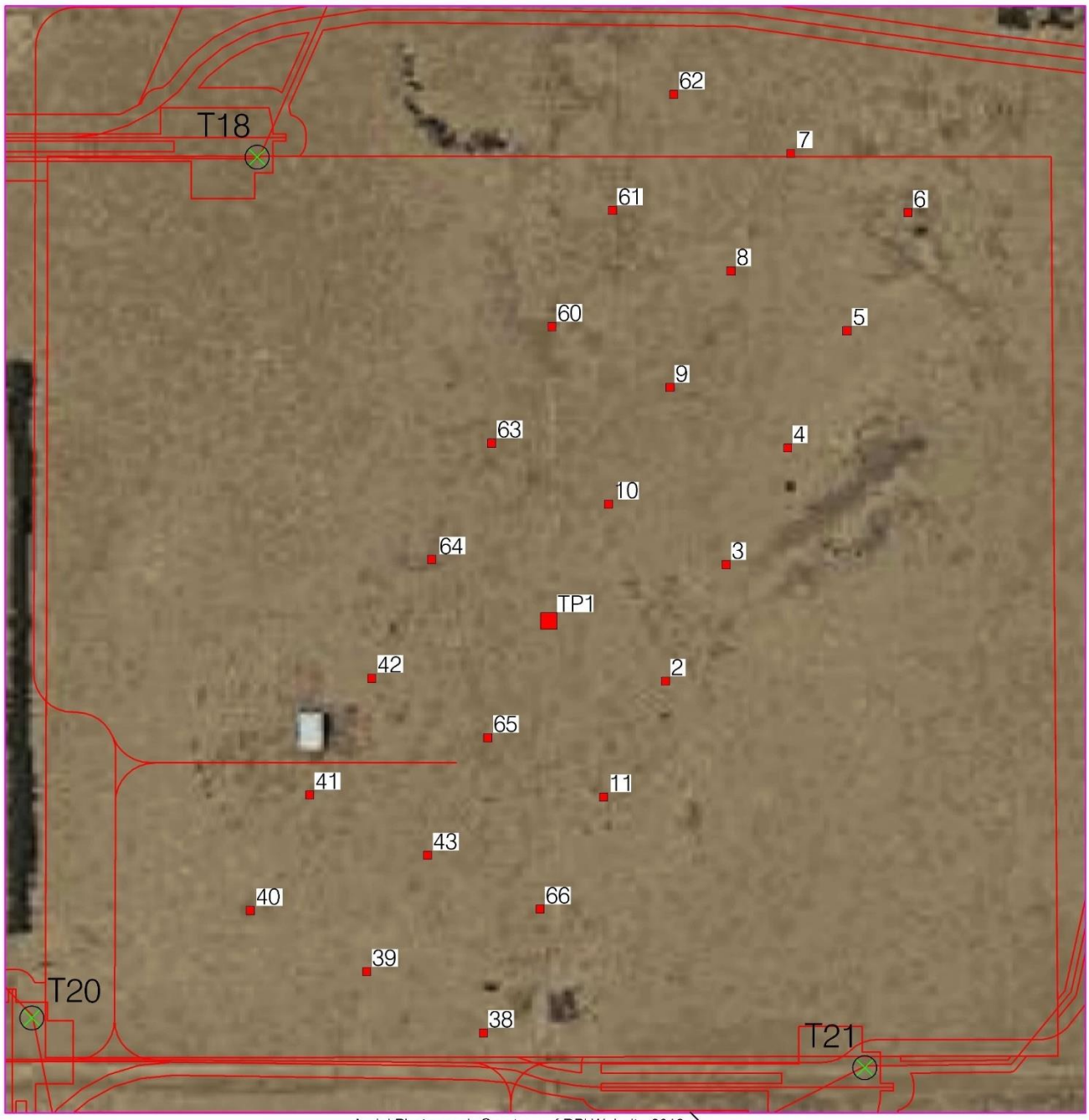

**Map 7b Excavations at Turbine T38**




**Map 7c Excavations at Turbine T33**




**Map 7d Excavations at Turbines T27 & T30**




Aerial Photograph Courtesy of DPI Website 2013

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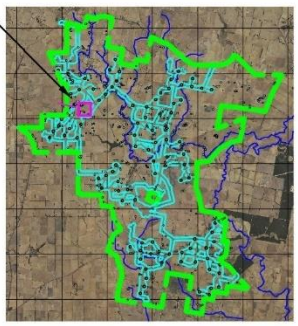
GDA94
MGA Zone 54

0 50 100
Scale of Metres

Legend:

- Activity Area Boundary 16,103 hectares (approx)
- Area of Works (100m buffer)
- Infrastructure
- Rivers
- Turbine
- Possible Mound
- x-y Test Pit 1x1m: With Artefact; x = test pit number; y = number of artefacts
- x-y Shovel Test Pit 50x50cm: With Artefact; x = test pit number; y = number of artefacts
- xx Test Pit 1x1m: No Artefact; xx = test pit number
- xx Shovel Test Pit 50x50cm: No Artefact; xx = test pit number
- Grid: 50m Spacing

Note: Excavation Icons Not To Scale



**Map 7e Excavations at Proposed Quarry**

### 6.3.2 Results

#### 6.3.2.1 Excavations

A total of 12 TPs and 99 STPs were excavated (Maps 7a-e; Table 15) comprising 36.75m2.

**Table 15 Excavations and Stone Artefacts**

| Excavation | Extent (m2) | No of Artefacts | Density |
|---|---|---|---|
| TP01 | 1 | – | – |
| STP2 | 0.25 | – | – |
| STP3 | 0.25 | – | – |
| STP4 | 0.25 | – | – |
| STP5 | 0.25 | – | – |
| STP6 | 0.25 | – | – |
| STP7 | 0.25 | – | – |
| STP8 | 0.25 | – | – |
| STP9 | 0.25 | – | – |
| STP10 | 0.25 | – | – |
| STP11 | 0.25 | – | – |
| TP12 | 1 | – | – |
| STP13 | 0.25 | – | – |
| STP14 | 0.25 | – | – |
| STP15 | 0.25 | – | – |
| STP16 | 0.25 | – | – |
| STP17 | 0.25 | – | – |
| STP18 | 0.25 | – | – |
| STP19 | 0.25 | – | – |
| STP20 | 0.25 | – | – |
| STP21 | 0.25 | – | – |
| TP22 | 1 | – | – |
| TP23 | 1 | – | – |
| STP24 | 0.25 | – | – |
| STP25 | 0.25 | – | – |
| STP26 | 0.25 | – | – |
| STP27 | 0.25 | – | – |
| TP28 | 1 | – | – |
| TP29 | 1 | – | – |
| TP30 | 1 | – | – |
| TP31 | 1 | – | – |
| STP32 | 0.25 | – | – |
| STP33 | 0.25 | – | – |
| STP34 | 0.25 | – | – |
| STP35 | 0.25 | – | – |
| STP36 | 0.25 | – | – |
| STP37 | 0.25 | – | – |
| STP38 | 0.25 | – | – |
| STP39 | 0.25 | – | – |

| Excavation | Extent (m2) | No of Artefacts | Density |
|---|---|---|---|
| STP40 | 0.25 | – | – |
| STP41 | 0.25 | – | – |
| STP43 | 0.25 | – | – |
| TP44 | 1 | – | – |
| STP45 | 0.25 | – | – |
| STP46 | 0.25 | – | – |
| STP47 | 0.25 | – | – |
| STP48 | 0.25 | – | – |
| STP49 | 0.25 | – | – |
| STP50 | 0.25 | – | – |
| STP51 | 0.25 | – | – |
| STP52 | 0.25 | – | – |
| STP53 | 0.25 | – | – |
| TP54 | 1 | 2 | 2 |
| STP55 | 0.25 | – | – |
| STP56 | 0.25 | – | – |
| STP57 | 0.25 | – | – |
| STP58 | 0.25 | – | – |
| STP59 | 0.25 | – | – |
| STP60 | 0.25 | – | – |
| STP61 | 0.25 | – | – |
| STP62 | 0.25 | – | – |
| STP63 | 0.25 | – | – |
| STP64 | 0.25 | – | – |
| STP65 | 0.25 | – | – |
| STP66 | 0.25 | – | – |
| TP67 | 1 | – | – |
| STP68 | 0.25 | – | – |
| STP69 | 0.25 | – | – |
| STP70 | 0.25 | – | – |
| STP71 | 0.25 | – | – |
| STP72 | 0.25 | – | – |
| STP73 | 0.25 | – | – |
| STP74 | 0.25 | – | – |
| STP75 | 0.25 | – | – |
| STP77 | 0.25 | – | – |
| STP78 | 0.25 | – | – |
| STP79 | 0.25 | – | – |
| STP80 | 0.25 | – | – |
| STP81 | 0.25 | – | – |
| STP82 | 0.25 | – | – |
| STP83 | 0.25 | – | – |
| STP84 | 0.25 | – | – |
| STP85 | 0.25 | – | – |
| STP86 | 0.25 | – | – |
| STP87 | 0.25 | – | – |

| Excavation | Extent (m2) | No of Artefacts | Density |
|---|---|---|---|
| STP88 | 0.25 | – | – |
| STP89 | 0.25 | – | – |
| STP90 | 0.25 | – | – |
| STP91 | 0.25 | – | – |
| STP92 | 0.25 | – | – |
| STP93 | 0.25 | – | – |
| STP94 | 0.25 | – | – |
| STP95 | 0.25 | – | – |
| STP96 | 0.25 | – | – |
| STP97 | 0.25 | – | – |
| STP98 | 0.25 | – | – |
| STP99 | 0.25 | – | – |
| STP100 | 0.25 | – | – |
| STP101 | 0.25 | – | – |
| STP102 | 0.25 | – | – |
| STP103 | 0.25 | – | – |
| STP104 | 0.25 | – | – |
| STP105 | 0.25 | – | – |
| STP106 | 0.25 | 1 | 4 |
| STP107 | 0.25 | – | – |
| STP108 | 0.25 | – | – |
| STP109 | 0.25 | – | – |
| STP110 | 0.25 | – | – |
| TP111 | 1 | 2 | 2 |
| Totals | 36.75 | 5 | 2.22 |

Photo 105

TP22 after excavation at possible mound (Map 7a).


Photo 106

TP28 after excavation of possible mound (Map 7b).


Photo 107

TP29 after excavation at possible mound (Map 7b).


Photo 108

TP30 after excavation at possible mound (Map 7b).


## Photo 109

TP31 after excavation at possible mound (Map 7b).


## Photo 110

TP54 after excavation at possible mound (Map 7c).

## Photo 111

TP54 stone artefacts.


Photo 112

STP106 after excavation. (Map 7d).

Photo 113

STP106 stone artefact.

3


Photo 114

TP111 after excavation (Map 7d).

Photo 115
TP111 stone artefacts.

Photo 116

View from TP111 on slope of terrace facing toward the crest of terrace.

Photo 117

View along proposed access track to Mustons Creek from general location of STP106.

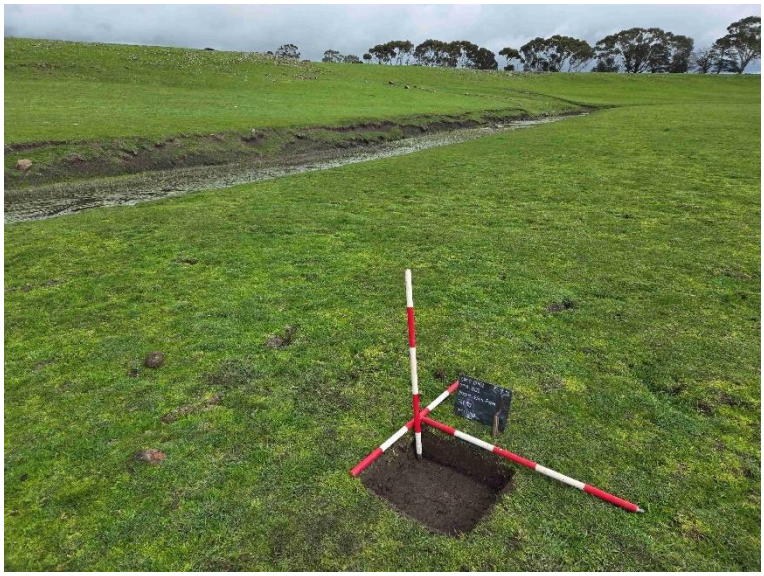


Photo 118

View from STP90 showing the relationship of Mustons Creek, its floodplain and terrace.

Photo 119

View from STP84 to Mustons Creek showing the relationship to its terraces and floodplain.

Photo 120

General location of TP54 during the standard assessment showing the stone outcrop / basalt floaters.

Photo 121

Proposed quarry showing stony ridgelines and swale.

Photo 122

Proposed quarry site showing basalt floaters on ridgeline surface.

### 6.3.2.2 Excavation Profiles and Stone Artefacts

Excavations at possible mound locations identified in the LiDAR analysis found no evidence to indicate they were anthropogenic accumulations (eg, clay balls, charcoal sediments, bone, etc; see above TP22, TP28-TP31, TP54 in **Photos 105-110**). All the sediment profiles are natural in origin. The maximum depth of excavation was 41cm. The profiles were as follows.

#### TP22

1. 0-8cm firm brown silt 7.5YR 4/4
2. 8-21cm firm brown silty clay 7.5YR 3/4
3. 21-41cm firm dark greyish brown silty clay 7.5YR 3/2
4. 41cm+ firm greyish brown clay 7.5YR 3/2

#### TP28

1. 0-22cm firm dark brownish grey clayey silt 7.5YR 3/3
2. 22-30cm firm brown ironstone lens 7.5YR 3/2

3. 30cm+ strong dark brownish grey clay 7.5YR 3/2

TP29

1. 0-19cm firm dark brownish grey clayey silt 7.5YR 3/3
2. 19-21cm firm brown ironstone lens 7.5YR 3/2
3. 21cm+ strong dark brownish grey clay 7.5YR 3/2

TP30

1. 0-21cm firm dark brownish grey clayey silt 7.5YR 3/3
2. 21-27cm firm brown ironstone lens 7.5YR 3/2
3. 27cm+ strong dark brownish grey clay 7.5YR 3/2

TP31

1. 0-25cm firm dark brownish grey clayey silt 7.5YR 3/3
2. 25-30cm firm brown ironstone lens 7.5YR 3/2
3. 30cm+ strong dark brownish grey clay 7.5YR 3/2

Five stone artefacts were recovered from TP54 (n=2) (Photos 110 & 111), STP106 (n=1) (Photos 112 & 113) and TP111 (n=2) (Photos 114 & 115) in a total area of 2.25m2. Stone artefact densities are very low with an average of 2.22 per m2. All the stone artefacts were recovered from 10cm to 15cm depth from brown to yellowish brown silty clay. The sediment profiles were:

TP54

1. 0-2cm firm brown silt 7.5YR 3/4
2. 2-17cm very firm yellowish brown silty clay 7.5YR 4/4
3. 17-32cm firm dark brown silty clay 7.5YR 4/8
4. 32cm+ firm yellowish grey clay 7.5YR 8/2

STP106

1. 0-2cm firm dark brown silt 7.5YR 4/8
2. 2-29cm firm brown silty clay 7.5YR 3/4
3. 29-31cm+ very firm dark greyish brown clay & basalt cobbles 7.5YR 4/2

TP111

1. 0-2cm firm brown silt 7.5YR 3/4
2. 2-20cm very firm brown silty clay 7.5YR 3/4
3. 20-30cm+ very firm dark yellowish brown clay 7.5YR 4/4

Raw material was silcrete (n=2) and quartz (n=3). Primary form comprised flakes (n=4) and a blade (n=1). No formal tools were identified.

Three stone artefacts were found in STP106 (n=1) and TP111 (n=2) were found on the slope of the northern terrace of Mustons Creek. None were found on the southern terrace.

Two stone artefact found in TP54 was found on the stony outcrop / area of basalt floaters (Photo 110) at one of the locations identified in the LiDAR investigation as being a likely mound.

#### 6.3.2.3 Mounds

The project has been designed to avoid previously registered mound sites and possible mound sites identified in the LiDAR investigation. To test the results of the LiDAR investigation, excavations were conducted at several locations where the possible mounds were identified in proximity to the ground disturbance footprint and comprised TP22 (Map 7a), TPs28-31 (Map 7b) and TP54 (Map 7c). STPs were also excavated along disturbance footprints to test whether there was any evidence of mounds nearby (eg, STPs32-37, Map 7b; STPs49-50 & STPs55-59, Map 7c).

No evidence for mounds (eg, dark charcoal stained sediments, dispersed clay balls, bone, mollusc shells or heat-treated stone artefacts) was identified. Although a stone artefact was recovered from TP54 (Photo 260), it was associated with a generic stone outcrop / basalt floaters with no evidence to suggest a cultural mound accumulation.

The complex assessment has demonstrated that LiDAR is likely only a useful technique in specific landscape contexts where mounds sites preserve sufficient attributes which enable them to be identified (eg, relief). It is apparently not particularly successful in the current project. This is attributed to historic landuse which has likely ploughed out mounds. However, due to variable ground surface visibility encountered during the ground survey and historical land use practices (eg ploughing), dispersed evidence of mounds may still be present in the ground disturbance footprint.

### 6.3.3 Site Predictive Model Statements

The results of the complex assessment are considered in relation to the site prediction model (Section 6.6.6; Table 14) as follows:

1. Three stone artefacts were found on the slope of the northern terrace of Mustons Creek. None were found on the southern terrace. Small numbers and low densities of stone artefacts are likely to be found on terraces of waterways in other parts of the activity area. Large dense stone artefact sites in other parts of the activity area on waterway terraces, if present, will be rare.
2. Two stone artefacts were found in association with a stony outcrop (ie TP54). Low numbers of stone artefacts may be present on stony outcrops in other parts of the activity area. Large dense stone artefact sites are unlikely to be present.
3. No stone artefacts were found on the stony ridgeline / rise at the proposed quarry. This is likely due to the lack of strategic resources (eg permanent potable water) in the immediate vicinity. However, since stone artefacts can be found in any landform context, low numbers of stone artefacts may be found on stony ridgelines and rises in other parts of the activity area.
4. No stone artefacts were found on the floodplains or level plains away from waterways. However, since small numbers of stone artefacts can be found in any landform context and stone artefacts sites have been recorded on the floodplains in the activity area, small numbers of stone artefacts may be found on floodplains and level plain away from waterways in other parts of the activity area.

5. No evidence of mounds was found during the standard or complex assessment. During the standard assessment fair to excellent ground surface visibility was encountered in sufficient parts of the disturbance footprint, so that if mounds were common in the disturbance footprint, then it would be expected that the standard assessment would find surface evidence of these mounds (not taking into account the two possible cultural mounds based on microtopography, see Section 6.2.6) such as charcoal staining, dark or greasy sediments, lumps of burnt clay or stone; shells, animal bones and stone artefacts; rabbit burrows; or circular vegetation features (eg, circular patches of capeweed). The complex assessment investigated eight possible mound locations identified by LiDAR but no evidence of mounds was found. Furthermore, excavations were conducted in the disturbance footprint in closest proximity to the possible mounds, and no evidence of mounds was found.
6. Despite the lack of evidence for mounds, variable ground surface visibility encountered during the ground survey and historical land use practices (eg ploughing), in particular in areas of very poor to poor ground surface visibility, dispersed evidence of mounds may still be present in the disturbance footprint.

### 6.3.4 Conclusions

The standard and complex assessment has shown that the disturbance footprint may impact stone artefact sites with low numbers and densities of stone artefacts. These stone artefact sites are considered to have low scientific (archaeological) significance. It is considered unlikely that large high density stone artefact sites will be impacted by the project.

No mounds were found during the standard and complex assessment. Two possible mounds were identified during the standard assessment on the basis of microtopography only. Despite this lack of mounds, due to the variable ground surface visibility encountered during the ground survey, it is still possible, albeit it with low potential, for mounds to still be present in the disturbance footprint. If present, these mounds will likely be highly degraded with mound materials dispersed by ploughing from historic landuse. These mounds are considered to have low scientific (archaeological) significance. It is considered unlikely that relatively undisturbed and intact mounds are present in the disturbance footprint.

No culturally modified (ie scar) trees were identified. No other site types are found in the activity area or are considered likely to be present (eg, human burials / remains; shell middens, quarries, stone arrangements, rock art, grinding grooves, etc).

## 6.4 Intangible Aboriginal Cultural Heritage

Consultation has occurred with EMAC and the proponent in relation to intangible Aboriginal cultural heritage values in the activity area.

In the activity area, no intangible Aboriginal places have been registered on the VAHR and none are currently in the process of registration. This means there is currently no intangible Aboriginal cultural heritage values to be managed through the CHMP process.

Other intangible Aboriginal cultural heritage values that are not managed through the CHMP process have been identified and include the Wedge-tailed eagle, the Southern Bent-wing bat and culturally significant flora, hydrology and ephemeral wetlands. EMAC has expressed concern on the impact of the project on the Wedge-tailed eagle, bat and the removal of native and pre-colonial vegetation.

The impact of the project on Wedge-tailed eagles was considered in the flora and fauna assessment for the project (Nature Advisory Appendix D Biodiversity and Habitat). A nest survey was conducted. A total of 10 nests and three potential nests were recorded. Three nests were outside the activity area. The number of nests suggest that more than one pair utilises the activity area for breeding.

The impact of the project on the Southern Bent-wing bat was considered in a bat assessment (Nature Advisory Appendix D1 Bat Impact Assessment). The survey for bats identified calls from nine species of bates. Seven of the bats were common, widely distributed species that are not listed under State or Federal conservation legislation. Two species were listed threatened bats: the SBWB and YBSB.

The impact on native flora was considered in the flora and fauna assessment (Nature Advisory Appendix D Biodiversity and Habitat: 46, Table 8). 4.977 hectares of assumed *Seasonal Herbaceous Wetlands of the Temperate Lowland Plain* (SHWTLP) (EPBC Act: Critically Endangered). 0.585 hectares (Geelong) or 0.591 hectares (Portland) of *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) (EPBC Act: Critically Endangered). 0.352 hectares of *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* (GEWVVP) (EPBC Act: Critically Endangered). 0.849 hectares (Geelong) or 0.894 hectares (Portland) of *Western (Basalt) Plains Grasslands Community* (W(B)PGC) (FFG Act: Listed). EMAC has advised and that any removal should be minimised and when unable to be avoided that EMAC be appropriately consulted.

EMAC is also developing potential ongoing management of intangible Aboriginal cultural heritage values for wind farm projects with EMAC On Country Guardians, including ongoing monitoring of the impact of projects on intangible Aboriginal cultural heritage values. The proponent is supportive of this development and how such a strategy could be effectively implemented.

The project has developed a mitigation approach to intangible Aboriginal cultural heritage values as follows (further details are available in the relevant Nature Advisory impact assessments):

### Wedge-tailed Eagle (WTE):

1. Applying a 500m buffer from blade tips, overhead powerline infrastructure and project-related buildings around identified nest sites as avoidance.
2. Protection of existing nests to maintain existing known eagle populations to limit encroachments of young or neighbouring pairs more susceptible to collision strikes.
3. Monitoring surveys of known and any incidentally recorded WTE nests will be undertaken prior and during the early part of WTE breeding season to determine whether nests are active. Where possible, construction activities may be modified to reduce or avoid disturbance within 500m of active nests until any chicks have

fledged. The typical WTE breeding season is generally June to October, depending on conditions. Incubation lasts for approx. 45 days.

4. A Bird and Bat Adaptive Management Plan (BBAMP) has been produced which will implement post construction monitoring to assess the effectiveness of mitigation measures and identify potential impacts on bird and bat species once the wind farm becomes operational. The data collected will provide insights into changes in species behaviour, species-specific risks, and support the development of adaptive management strategies.
5. Pest Management Plan to keep pest populations controlled including animal carcass removal aiming to limit opportunistic eagle scavenging in high-risk impact areas and proximity to turbines.
6. Develop "On Country Guardians" with EMAC to engage with and support eagle mitigations.

### Southern Bent-wing Bat (SBWB):

1. Wind turbine blades will be at least 40m above the ground.
2. Avoiding areas with higher recorded activity.
3. Micro-siting turbines to avoid high quality habitat within 269m of a proposed wind turbine and minimising medium and lower quality habitat with this distance of a wind turbine blade.
4. Increasing the wind turbine cut-in wind speed for many wind turbines.
5. Implementing wind turbine blade feathering to prevent "free spinning" below cut-in wind speeds.
6. Investigate the feasibility of acoustic deterrents.
7. If mortality is recorded, enhanced mitigation measure will be put in place.
8. Offset residual impacts by considering options to contribute to SBWB research and improved management.
9. Implement Bam Plan which outlines monitoring protocols and responsibilities, trigger responses to a listed species being impacted by the wind farm and reporting requirement.
10. Monitor with mortality surveys, bat detectors and GHFF surveys.

### Native vegetation, culturally significant vegetation and hydrology:

1. A placement of a 100-metre buffer around all DEECA-mapped wetlands to exclude WTG. This area was selected as a means of avoiding:
    a. Physical disturbance to wetlands and their fringes; and
    b. Limit surface water runoff, and entrained sediment loads reaching these ephemeral wetlands from construction works zones.
2. Inclusion of a 100-metre buffer around watercourses including Mustons Creek, Drysdale Creek and smaller drainages, to prevent:
    a. Unnecessary disturbance to the watercourses or their banks; and
    b. Limit potential downstream effects from construction activities such as sedimentation of water.
3. Ephemeral drainage lines were buffered by 30 metres to:
    a. Limit physical disturbance to the drainage line; and
    b. Limit surface water runoff and entrained sediment loads reaching these ephemeral drainages from construction work zones.

4. Watercourse crossings have been minimised through the siting of the accessways. The proposed crossings are necessary to provide access to infrastructure and will prevent vehicles being diverted onto public roads. Other key design measures for watercourse crossings include:
    a. Permanent surface structures designed to maintain existing overland flow paths and not cause increased upstream flood levels; and
    b. Waterway crossings will be designed to accommodate a 1 in 10 ARI design criteria.
5. Re-alignment and micro-siting of infrastructure has avoided most of the native vegetation within the development footprint; and
6. Re-alignment and micro-siting of infrastructure has avoided much of the GEWVVP and NTGVVP within the development footprint.
7. After updated surveys of all native vegetation within the Project study area in June 2025, following updates to the Wind Farm layout (v183.6), some new impacts to native vegetation were noted. Wind Prospect adjusted the footprint (v183.7) to avoid most new occurrences of native vegetation and TECs.
8. During early design iterations, road upgrades proposed along Hexham-Ballangeich Road were projected to incur a high level of impact to NTGVVP and GEWVVP. Wind Prospect, along with Ratio Traffic Consultants, re-examined the road upgrade requirements, in particular regarding width of stormwater drains, and necessity of certain site entrances along this road. In August 2025, as a result, two site access locations which crossed areas of NTGVVP and GEWVVP were removed, with a new access location located to avoid native vegetation. As a result, impacts to NTGVVP and GEWVVP have been reduced along Hexham-Ballangeich Road, by avoiding approximately 3km of roadside. Road upgrade area width could not be reduced.
9. The number of site access points was reduced from 10 down to 8 through consolidation. As a result, impacts to native vegetation, which included areas of NTGVVP and GEWVVP, were reduced.
10. Where turbines are proposed within areas of assumed SHWTLP, impacts have been reduced by removing two laydown areas and co-locating cables and tracks.
11. Where the internal transmission line crosses patches of native vegetation without trees or shrubs, the line will be strung from either end, avoiding impacts to native vegetation.
12. Develop “On Country Guardians” with EMAC to collaborate on native vegetation and flora assessment to help management mitigation measures, impacts or offsets.

## 6.5 Future Assessment

After consultation with EMAC, additional complex assessment for CHMP 19602 is anticipated. Any additional complex assessment is not required to assess the likely impacts of the project on tangible Aboriginal cultural heritage.

Intangible Aboriginal cultural heritage will be managed in consultation with EMAC. If any intangible Aboriginal cultural heritage places are identified in the subsequent CHMP assessment, they will be managed in the CHMP. The other intangible Aboriginal cultural heritage values, that is, WTE, SBWB, native vegetation, cultural significant vegetation and hydrology, will be managed in consultation with EMAC, as outlined in this impact assessment.

## 6.6 Existing Conditions and Key Issues

The existing conditions and key issues are:

### Tangible Aboriginal cultural heritage.

1. There is potential for direct impact on tangible Aboriginal places in the project area where ground disturbance will occur.
2. Although there are no registered stone artefacts sites recorded in the disturbance footprint and none were discovered during the assessment, the development may impact as yet unknown stone artefact sites. These sites will likely have low numbers and densities of stone artefacts and have low scientific significance.
3. Although there are no registered mound sites recorded in the disturbance footprint and none were discovered during the assessment, the development may impact as yet unknown mound sites. These sites are likely to have been disturbed by historical land use, will be in areas that had very poor to poor ground surface visibility, and will likely be dispersed and have low scientific significance.
4. No indirect impacts are likely to occur.

### Intangible Aboriginal cultural heritage.

1. There are no intangible Aboriginal places registered on the VAHR and none were identified during the CHMP assessment conducted to date. Any intangible Aboriginal places subsequently registered on the VAHR will be managed in the CHMP process.
2. Other intangible Aboriginal cultural heritage values have been identified and include the WTE, SBWB, native vegetation, cultural significant vegetation and hydrology. These values will be actively managed in consultation with EMAC.

# 7 IMPACT ASSESSMENT

## 7.1 Impact Pathways

The impact pathways are the impacts that the various phases of the project may potentially have on tangible and intangible Aboriginal cultural heritage and are presented in Table 16. CHMP 19602 is currently in preparation and is the standard control to manage the initial risk. The consequences and likelihood used in the risk rating takes into account the approval of CHMP 19602 before any planning permit is granted. The project is also in continuing consultation with EMAC in regards to intangible Aboriginal cultural heritage values.

**Table 16 Impact Pathways**

| | | Initial Risk | | |
|---|---|---|---|---|
| Project Phase | Impact | Consequence | Likelihood | Risk Rating |
| Planning | CHMP has not assessed the activity area sufficiently to identify and manage tangible and intangible Aboriginal places. | Negligible | Rare | Negligible |

| | | Initial Risk | | |
|---|---|---|---|---|
| Project Phase | Impact | Consequence | Likelihood | Risk Rating |
| | Consultation with EMAC has not been sufficient to manage intangible Aboriginal cultural heritage values. | Negligible | Rare | Negligible |
| Pre-construction Activities | Tangible Aboriginal cultural heritage is harmed by field assessment, eg, geotechnical excavations. | Low | Unlikely | Low |
| | Intangible Aboriginal places and cultural heritage values is harmed by field assessment, eg, geotechnical excavations. | Low | Unlikely | Low |
| Construction Activities / earthworks | Earth works harm registered tangible Aboriginal places that must not be harmed pursuant to the Conditions in the approved CHMP. | Low | Unlikely | Low |
| | Earth works harm unidentified tangible Aboriginal places and are managed pursuant to the Contingency Plan in the approved CHMP. | Moderate | Possible | Medium |
| | The activity harms intangible Aboriginal places identified and managed in the CHMP. | Negligible | Rare | Negligible |
| | The activity harms intangible Aboriginal heritage values identified outside the CHMP process and managed in consultation with EMAC. | Negligible | Rare | Negligible |
| Operation & Maintenance | Operation harms registered or unidentified tangible Aboriginal places. | Negligible | Rare | Negligible |
| | Operation harms intangible Aboriginal places identified and managed in the CHMP. | Negligible | Rare | Negligible |
| | Operation harms intangible Aboriginal heritage values identified outside the CHMP process and managed in consultation with EMAC. | Negligible | Rare | Negligible |
| Decommissioning | Works harm registered tangible Aboriginal places during removal of all above ground equipment, restoration of all areas associated with the project and revegetation. | Negligible | Rare | Negligible |
| | Works harm intangible Aboriginal places identified in the CHMP. | Negligible | Rare | Negligible |
| | Works harm intangible Aboriginal cultural heritage values identified outside the CHMP process and managed in consultation with EMAC. | Negligible | Rare | Negligible |

### 7.1.1 Planning Phase

There are no known activities that will harm tangible Aboriginal cultural heritage apart from any future fieldwork assessment for CHMP 19602. Harm to Aboriginal cultural heritage is permitted during the preparation of a CHMP in order to identify the extent, nature and significance of Aboriginal places that may be impacted by the project and must be managed appropriately under any approved CHMP. For this reason, the impact to Aboriginal cultural heritage during the preparation of CHMP 19602 is not considered in the risk assessment. The risk to tangible Aboriginal cultural heritage is assessed as negligible.

Intangible Aboriginal cultural heritage is currently being managed in consultation with EMAC. There are no known activities in the planning phase that will harm intangible Aboriginal places within the CHMP process or Aboriginal cultural heritage values outside the CHMP process. The risk to intangible Aboriginal places and intangible Aboriginal cultural heritage values is assessed as negligible.

### 7.1.2 Pre-Construction Activities Phase

Pre-construction activities that involve ground disturbance, such as geotechnical investigations using boring or trenching, may harm tangible Aboriginal cultural heritage. Any excavation may harm surface and subsurface stone artefacts and mound sites; however, this risk is limited by the discrete and localised nature of the works. The risk is elevated if excavation occurs in areas identified in the CHMP assessment having moderate to high archaeological potential or within 50 metres of previously registered Aboriginal places. If there is Aboriginal cultural heritage within any area that may be harmed by pre-construction activities, these activities cannot be undertaken without prior authorisation under the Act.

Intangible Aboriginal cultural heritage will be managed in consultation with EMAC. There are no known activities in the pre-construction activities phase that will harm intangible Aboriginal places within the CHMP process or Aboriginal cultural heritage values outside the CHMP process. The risk to intangible Aboriginal places and intangible Aboriginal cultural heritage values is assessed as low.

### 7.1.3 Construction Phase

Construction includes a large area of earth works that have potential to impact tangible Aboriginal cultural heritage. The impact on tangible Aboriginal cultural heritage will be managed and controlled by approved CHMP 19602. In relation to registered Aboriginal places, relevant Conditions will prescribe how harm to registered Aboriginal places must be avoided, or where harm is unable to be avoided, how harm can be minimised or managed (eg, salvaged). CHMP 19602 will also include Conditions requiring all relevant personnel to have a cultural heritage induction.

Earth works may also impact unknown or unregistered Aboriginal places, for example, previously unrecorded subsurface stone artefacts. CHMP 19602 will include a Contingency Plan which manages the discovery of Aboriginal cultural heritage.

No registered intangible Aboriginal places are registered on the VAHR. If any intangible Aboriginal places are registered during the ongoing CHMP process, they will be managed and controlled by approved CHMP 19602.

Intangible Aboriginal cultural heritage values in relation to WTE, SBWB, native vegetation, culturally significant vegetation and hydrology have been assessed and will be managed in consultation with EMAC. The project has developed a mitigation approach to intangible Aboriginal cultural heritage values (Section 6.4).

### 7.1.4 Operation and Maintenance Phase

The operation and maintenance of the project is unlikely to require any works that will impact any registered or unidentified tangible Aboriginal places.

No registered intangible Aboriginal places are registered on the VAHR. If any intangible Aboriginal places are registered during the ongoing CHMP process, they will be managed and controlled by approved CHMP 19602.

Intangible Aboriginal cultural heritage values in relation to WTE, SBWB, native vegetation, culturally significant vegetation and hydrology have been assessed and will be managed in consultation with EMAC. The project has developed a mitigation approach to intangible Aboriginal cultural heritage values (Section 6.4).

### 7.1.5 Decommissioning Phase

The decommissioning phase of the project is unlikely to involve works that will require disturbing ground in areas that were previously undisturbed by the construction, and operation and maintenance phases of the project. This means the works are unlikely to impact any registered or unidentified tangible Aboriginal places.

No registered intangible Aboriginal places are registered on the VAHR. If any intangible Aboriginal places are registered during the ongoing CHMP process, they will be managed and controlled by approved CHMP 19602.

Intangible Aboriginal cultural heritage values in relation to WTE, SBWB, native vegetation, culturally significant vegetation and hydrology have been assessed and will be managed in consultation with EMAC. The project has developed a mitigation approach to intangible Aboriginal cultural heritage values (Section 6.4).

## 7.2 Cumulative Impact Pathway

The estimated impacts on tangible Aboriginal places in the geographic region are presented in Table 17. The cumulative impact of potential harm to Aboriginal places in the project area are assessed taking into consideration the estimated impacts on Aboriginal places in the geographic region and the impact on Aboriginal places in the project area.

**Table 17 Estimated Impacts on Aboriginal Places in the Geographic Region**

| Aboriginal Place Type | Total Harm Permitted | Partial Harm Permitted | No Harm Permitted | Salvage Required | No CHMP Harmed | No CHMP Unharmed |
|---|---|---|---|---|---|---|
| Mound | – | – | – | – | – | 182 |
| Hearth | – | – | – | – | – | 1 |
| Soil Deposit | – | – | – | – | – | 5 |
| Artefact Scatter* | 2 | 1 | | 1 | 1 | 82 |
| LDAD | 1 | – | 3 | 1 | – | 5 |
| Scarred tree | – | – | 1 | – | – | 37 |
| Ancestral remains | – | – | – | – | – | 1 |
| Aboriginal cultural place | – | – | – | – | – | 1 |
| Stone feature | – | – | – | – | – | 1 |

CHMPs in the geographic region are associated mainly with utilities including power stations (Shell & Wines 2008), wind farms (Kirkwood 2009; Wood et al 2022; Wood et al 2023) and transmission lines (Murphy & Rymer 2016; Carr 2017). Two CHMPs found no Aboriginal places (Kirkwood 2009; Murphy & Rymer 2016) while the other four found Aboriginal places (Shell & Wines 2008; Carr 2017; Wood et al 2022; Wood et al 2023).

Table 17 shows the majority of Aboriginal places in the geographic region have not been impacted by development. Aboriginal places are still impacted by current land uses, primarily by ploughing for agriculture. CHMPs have permitted total harm at only three and partial harm at one Aboriginal place. Salvage has been required at two of the four Aboriginal places. No harm has been permitted at four sites. One artefact scatter, VAHR 7421-0113 [Connewarren Park 1], has been impacted by a change of land use from grazing / agriculture to forestry.

The data shows that the archaeological cumulative impact of development by utilities and wind farms is low. Wind farms, in particular, have the capacity to design out impacts to Aboriginal places. This is more difficult for utilities where infrastructure typically is constrained by easements and there is less flexibility to design out impacts to Aboriginal places. The CHMPs that have permitted harm to Aboriginal places have been utilities, eg, pipelines and power lines, as opposed to wind farms. Total harm was permitted at VAHR 7421-1096 [Stony Creek Tributary 1] and VAHR 7421-0198 [Stony Creek 11] in CHMP 10377 (Shell & Wines 2008) for the Mortlake Power Station gas pipeline. Total harm at VAHR 7421-0232 [Salt Creek LDAD 1] was permitted in CHMP 14295 (Carr 2017) for the Salt Creek Wind Farm power transmission line only because it was deemed that the complex assessment had harmed the Aboriginal place in its entirety.

In CHMP 12658 (Wood et al 2022) for the Mount Fyans Wind Farm partial harm was permitted at intangible Aboriginal place VAHR 7422-0581 [Boorug & Mondilibi Landscape Ridge] only for the purposes of upgrading an existing track, otherwise no other harm was permitted., VAHR 7422-0581 [Boorug & Mondilibi Landscape Ridge] has been impacted (see above). There are no registered intangible Aboriginal places in the activity area, therefore, the cumulative impact is assessed as low.

RAPs typically assign high cultural and spiritual significance to Aboriginal places. This means the RAPs assessment cultural and spiritual cumulative impact of a development on Aboriginal places will unlikely correspond to the assessment of archaeological cumulative impact including that presented above because. EMAC have advised the proponent of their concern on the cumulative negative effects on wind farm projects (see Section 5.4).

The cumulative impact of large projects in the geographic region on intangible Aboriginal cultural heritage values outside the CHMP process is difficult to estimate because not all of these values appear to have been considered for these projects. Previous consultation with RAPs or Traditional Owner Groups (TOGs) have typically been in relation to the cultural value of tangible Aboriginal places in CHMPs. RAPs and TOGs typically assign high cultural value to all tangible and intangible Aboriginal places and Aboriginal cultural values. The impact of the project on intangible Aboriginal cultural heritage values have been assessed by commissioning reports on flora and fauna (see Section 6.4) and proposing mitigation measures. The Nature Advisory report notes that it was difficult to quantify the operational cumulative impact of wind farms as there is a lack of available data of operational wind farms on biodiversity (p140). Potential effects included possible barrier effects and collision of bats and avifauna with wind turbines. This means an assessment on the intangible Aboriginal cultural heritage values for the SBWB and WTE is also difficult to assess. It is assumed that any harm to the SBWB and WTE will have a negative cumulative impact. The cumulative impact on native vegetation is assisted by data on the removal of vegetation for construction. Native vegetation will be removed by the project and therefore it is assumed to have a negative cumulative impact on intangible Aboriginal cultural heritage values. This negative impact will be mitigated by environmental offsets.

## 7.3 Design Mitigation and Management Measures

### 7.3.1 Design Mitigation

The windfarm layout footprint has been developed by avoiding registered Aboriginal places and minimising layout encroachment on legislated areas of Aboriginal cultural heritage sensitivity. The location of previously registered Aboriginal places is considered to be accurate with a tolerance of about 25m (see Section 6.2.1). The assessment took into consideration older records by examining land in proximity to recorded locations and between these locations and the ground disturbance footprint. The proponent has also utilised the investigation to amend the wind farm layout to avoid the potential mound sites identified in the LiDAR investigation.

The continuing assessment for CHMP 19602 may identify new Aboriginal places. The wind farm layout can be modified to avoid harm to these Aboriginal places. If any critical infrastructure is unable to be moved (eg, quarry & waterway crossings), CHMP Conditions, in consultation with EMAC, can be formulated to minimise or manage harm. This process will reduce any cumulative impact the project may have on tangible Aboriginal cultural heritage values.

No intangible Aboriginal places have been registered in the activity area. If any intangible Aboriginal places are registered during the ongoing CHMP process, they will be managed and mitigated in approved CHMP 19602.

Intangible Aboriginal cultural heritage values in relation to WTE, SBWB, native vegetation, cultural significant vegetation and hydrology have been assessed and will be managed in consultation with EMAC. The wind farm layout design has been considered in relation to these values. The design will mitigate any cumulative impact to intangible Aboriginal cultural heritage values in the geographic region.

### 7.3.2 Management Measures

The standard control to avoid, minimise and manage impacts to tangible and intangible Aboriginal places for projects are the Conditions and Contingency Plan in CHMPs. These measures relate only to the project area itself, mainly during the construction phase of the project. The measures typically do not apply to the planning, pre-construction activity, operation and maintenance, or decommissioning phases. This is because the main impact to Aboriginal cultural heritage from most projects is during the construction phase.

In relation to intangible Aboriginal cultural heritage values, management measures outside the CHMP process can be implemented (see Section 6.4). These management measures are not typically found in CHMP Conditions and Contingency Plans.

#### 7.3.2.1 Planning Phase

The only impact to Aboriginal cultural heritage during the planning phase is the harm to tangible and intangible Aboriginal places by the fieldwork assessment for the CHMP. This is required to identify tangible and intangible Aboriginal places in the project area and manage them in the CHMP Conditions.

Intangible Aboriginal cultural heritage values can be assessed during the planning phase with no harm to these values. Appropriate management measures can then be formulated.

#### 7.3.2.2 Pre-Construction Activities Phase

Pre-construction activities, such as geotechnical investigations using boring or trenching, may harm tangible Aboriginal cultural heritage (Section 7.1.2) and is likely to be an offence under the Act if it occurs. Guidance for geotechnical investigations is provided by the Advisory Note *Geotechnical Investigations* available on the FP-SR website. The advice is applicable to any pre-construction activity that may harm Aboriginal cultural heritage. If there is Aboriginal places within any area that may be harmed by pre-construction activities, these activities cannot be undertaken without prior authorisation under the Act.

Before commencing the pre-construction activity that may harm Aboriginal places, the following management measures should be undertaken:

1. Consult with EMAC in relation to the pre-construction activity.
2. Consult with a Heritage Advisor who must check the VAHR for specific information relating to any registered Aboriginal places in the investigation area and assess the accuracy of the location for any registered Aboriginal places within 100m of the investigation area.

3. Consult with a Heritage Advisor on any additional appropriate management measures to ensure that the pre-construction activity complies with the Act and no harm occurs to registered Aboriginal places.

If Aboriginal places are discovered during any pre-construction activity, the following management measures should be undertaken:

1. Any activity that may harm the discovery must cease.
2. The discovery must be reported to EMAC and FP–SR.
3. If any suspected human remains are discovered, works must cease. The Victoria Police and State Coroner's Office must be notified. If there are reasonable grounds to believe the remains are Aboriginal, the Coronial Admissions and Enquires hotline must be contacted.
4. Before continuing the pre-construction activity, authorisation is required under the Act to harm the Aboriginal cultural heritage.

Intangible Aboriginal cultural heritage values such as WTE, SBWB, native vegetation, culturally significant vegetation and hydrology, are to be managed outside the CHMP process (see Section 6.4).

#### 7.3.2.3 Construction Phase

Management measures for Aboriginal places during the construction phase will be in the approved CHMP. All the Conditions must be complied with. The Contingency Plan manages potential issues including:

1. Specific management measures in the unlikely event that any Aboriginal places are discovered.
2. Any disputes, delays and other obstacles that may affect the project.
3. Reviewing compliance with the CHMP, Conditions and mechanisms for remedying con-compliance.
4. The notification of the discovery of Aboriginal places during the construction phase and requirement relating to the custody and management of any Aboriginal cultural heritage found during the construction phase.

The Conditions will include management measures such as mandatory cultural heritage awareness inductions, RAP inspections, notification of the commencement and conclusion of the construction phase and keeping a hard copy of the approved CHMP on site at all times.

Since the construction period is estimated to be approximately 24 months, additional management measures in the EMP to ensure compliance with the approved CHMP may be appropriate. This should comprise a review of the CHMP compliance checklist every two months. This review should be documented and signed off by the relevant site manager and be available to any Authorised Officer or Aboriginal Heritage Officer as authorised under section 165A and section 181(1)(b) of the Act, or any other representative of the RAP or FP–SR.

Intangible Aboriginal cultural heritage values such as WTE, SBWB, native vegetation, culturally significant vegetation and hydrology, are to be managed outside the CHMP process (see Section 6.4).

#### 7.3.2.4 Operation and Maintenance Phase

The operation and maintenance of the project is unlikely to require any works that will impact any registered or unidentified Aboriginal places. If there is any maintenance activity that may harm Aboriginal places outside the operational footprint, the following management measures should be undertaken:

Before commencing the maintenance activity that may harm Aboriginal places, the following management measures should be undertaken:

1. Check the VAHR for specific information relating to any Aboriginal places in the investigation area.
2. Consult with a Heritage Advisor on any additional appropriate management measures to ensure that the maintenance activity complies with the Act and no harm occurs to registered Aboriginal places.

If Aboriginal places are discovered during any maintenance activity, the following management measures should be undertaken:

5. Any activity that may harm the discovery must cease.
6. The discovery must be reported to EMAC and FP–SR.
7. If any suspected human remains are discovered, works must cease. The Victoria Police and State Coroner's Office must be notified. If there are reasonable grounds to believe the remains are Aboriginal, the Coronial Admissions and Enquires hotline must be contacted.
8. Before continuing the maintenance activity, authorisation is required under the Act to harm the Aboriginal place.

Intangible Aboriginal cultural heritage values such as WTE, SBWB, native vegetation, culturally significant vegetation and hydrology, are to be managed outside the CHMP process (see Section 6.4). The operation of the project is unlikely to harm any intangible Aboriginal cultural heritage values. In the unexpected event intangible Aboriginal cultural heritage is harmed (eg, bird strike), then the following management measures should be undertaken.

1. An incident report should be written up.
2. Contact and consult with the relevant RAP.
3. In consultation with the RAP, formulate measures to minimise the event happening in the future.

#### 7.3.2.5 Decommissioning Phase

The decommissioning phase of the project is unlikely to involve works that will require disturbing ground in areas that were previously undisturbed by the construction, and operation and maintenance phases of the project. This means the works are unlikely to impact any registered or unidentified tangible or intangible Aboriginal places or intangible

Aboriginal cultural heritage values. No additional management measures are considered necessary.

## 7.4 Assessment of Residual Impacts

The completion and implement of CHMP 19602, continued consultation with EMAC, design mitigation in Section 7.3.1 and additional management measures proposed in Section 7.3.2, means that the residual impacts in the various phases of the project on tangible and intangible Aboriginal places and intangible Aboriginal cultural heritage values is assessed as very low (Table 18).

## Table 18 Residual Impact Ratings

| Phase and Values | Impact Pathway | Mitigation and Management Measures | Residual Impact | Significance Rating |
|---|---|---|---|---|
| **Planning** | | | | |
| Tangible Aboriginal places | No direct or indirect impact apart from CHMP assessment. | Complete CHMP including additional complex assessment. | CHMP complex assessment may discover subsurface stone artefacts and to a lesser extent mounds in areas of very poor to poor ground surface visibility. | **Very low**<br>Tangible Aboriginal places are being assessed in the CHMP. |
| Intangible Aboriginal places | No direct or indirect impact apart from CHMP assessment. | Complete CHMP including additional complex assessment. | CHMP assessment may discover intangible Aboriginal places. | **Very low**<br>No intangible Aboriginal places are registered on the VAHR. |
| Intangible Aboriginal cultural heritage values | No direct or indirect impact. | Continue consultation with EMAC. | No residual impact. | **Very low**<br>Consultation is continuing with EMAC in relation to intangible Aboriginal cultural heritage values and management. |
| **Pre-Construction Activities** | | | | |
| Tangible Aboriginal places | Potential to harm unidentified tangible Aboriginal places. | Follow management measures, monitoring and reporting in **Section 7.3.2.2** and **8.2**. | Residual impact will be localised if Aboriginal place is discovered. | **Very low**<br>Potential impact has been mitigated by management measures. |
| Intangible Aboriginal places | Potential to harm unidentified intangible Aboriginal places. | Follow management measures, monitoring and reporting in **Section 7.3.2.2** and **8.2**. | Residual impact will be localised if Aboriginal place is discovered. | **Very low**<br>Potential impact has been mitigated by management measures. |
| Intangible Aboriginal cultural heritage values | No direct or indirect impact. | Follow management measures, monitoring and reporting in **Section 7.3.2.2** and **8.2**. | No residual impact. | **Very low**<br>Potential impact has been mitigated by management measures. |

| Phase and Values | Impact Pathway | Mitigation and Management Measures | Residual Impact | Significance Rating |
|---|---|---|---|---|
| **Construction** | | | | |
| Tangible Aboriginal places | Direct impact managed by CHMP.<br>No indirect impact. | Comply with CHMP Conditions and Contingency Plan.<br>Comply with additional management measures, monitoring and reporting in the EMP in **Section 7.3.2.3** and **8.3**. | Residual impact will be localised and any harm will be in compliance with the CHMP. | **Very low**<br>Any residual impact will be localised and any harm will be in compliance with the CHMP. |
| Intangible Aboriginal places | Direct impact managed by CHMP.<br>No indirect impact. | Comply with CHMP Conditions and Contingency Plan and additional management measures, monitoring and reporting in the EMP in **Section 7.3.2.3** and **8.3**. | No residual impact. | **Very low**<br>Intangible Aboriginal places will be managed in the CHMP and no harm is expected to occur. |
| Intangible Aboriginal cultural heritage values | No direct or indirect impact | Comply with management measures, monitoring and reporting in **Section 6.4** and **8.3**. | No residual impact. | **Very low**<br>Potential impact has been mitigated by management measures. |
| **Operation and Maintenance** | | | | |
| Tangible Aboriginal places | No indirect impact.<br>Very low potential for direct impact by maintenance activities. | Comply with management measures, monitoring and reporting in **Section 7.3.2.4** and **8.4**. | Residual impact will be localised and any direct impact mitigated by management measures. | **Very low**<br>Maintenance activities are considered unlikely to have potential to directly harm tangible Aboriginal places. |
| Intangible Aboriginal places | No indirect impact.<br>Very low potential for direct impact by operation. | Comply with management measures, monitoring and reporting in **Section 7.3.2.4** and **8.4**. | Residual impact will be localised and any direct impact mitigated by management measures. | **Very low**<br>Operation activities are considered unlikely to have potential to directly harm intangible Aboriginal places. |

| Phase and Values | Impact Pathway | Mitigation and Management Measures | Residual Impact | Significance Rating |
|---|---|---|---|---|
| Intangible Aboriginal cultural heritage values | No direct impact.<br>Very low potential for direct impact by operation | Comply with management measures, monitoring and reporting in Section 7.3.2.4 and 8.4. | Residual impact will be localised and any direct impact mitigated by management measures. | Very low<br>Operation activities are considered to have very low potential to directly harm intangible Aboriginal cultural heritage values. |
| Decommissioning | | | | |
| Tangible Aboriginal places | No direct or indirect impact. | No relevant management measures. | No residual impact. | Very low<br>Decommissioning activities are considered unlikely to directly harm tangible Aboriginal places. |
| Intangible Aboriginal places | No direct or indirect impact. | No relevant management measures. | No residual impact. | Very low<br>Decommissioning activities are considered unlikely to directly harm intangible Aboriginal places. |
| Intangible Aboriginal cultural heritage values | No direct or indirect impact. | No relevant management measures. | No residual impact. | Very low<br>Decommissioning activities are considered unlikely to directly harm Aboriginal cultural heritage values. |

# 8 MONITORING AND REPORTING

CHMP 19602 and the additional management measures (Section 7.3.2) presented in this report will effectively manage Aboriginal cultural heritage risk related to the project. The management measures include effective monitoring and reporting requirements.

## 8.1 Planning Phase

The only impact to Aboriginal cultural heritage during the planning phase is the harm to tangible or intangible Aboriginal places by the fieldwork assessment for the CHMP. This fieldwork is required to identify Aboriginal places in the project area and manage them effectively in the CHMP Conditions. No monitoring or reporting measures are required.

## 8.2 Pre-Construction Activities Phase

CHMP 19602 Conditions and Contingency Plan do not apply. Recommended management measures to manage risk are:

Before commencing any pre-construction activity that may harm tangible or intangible Aboriginal places, the following management measures should be undertaken:

1. Check the VAHR for specific information relating to any tangible and intangible Aboriginal places in the investigation area.
2. Consult with EMAC in relation to the pre-construction activity.
3. Consult with a Heritage Advisor on any additional appropriate management measures to ensure that the pre-construction activity complies with the Act and no harm occurs to registered tangible and intangible Aboriginal places.

If tangible or intangible Aboriginal places are discovered during any pre-construction activity, the following management measures should be undertaken:

1. Any activity that may harm the discovery must cease.
2. The discovery must be reported to EMAC and FP–SR.
3. If any suspected human remains are discovered, works must cease. The Victoria Police and State Coroner's Office must be notified. If there are reasonable grounds to believe the remains are Aboriginal, the Coronial Admissions and Enquires hotline must be contacted.
4. Before continuing the pre-construction activity, authorisation is required under the *Aboriginal Heritage Act 2006* to harm the Aboriginal place.

Additional management measures can be implemented for the management of intangible Aboriginal cultural heritage values (see Section 6.4).

## 8.3 Construction Phase

During the construction phase tangible and intangible Aboriginal places will be managed by CHMP 19602 and will include, but not necessarily be limited to:

1. Conditions
    a. Avoid harm to registered tangible and intangible Aboriginal places.

   b. Minimise and manage harm to registered tangible and intangible Aboriginal places where harm cannot be avoided.
   c. Cultural heritage awareness training before and during construction.
   d. RAP inspections before and during construction.
2. Contingency Plan
   a. Management of tangible and intangible Aboriginal places found during construction
   b. Reviewing compliance and mechanisms for remedying non-compliance with the CHMP

Additional management measures are recommended to monitor compliance with the CHMP Conditions and should include but not necessarily be limited to:

1. Every two months a review of the CHMP compliance checklist to ensure compliance with CHMP 19602 Conditions.
2. The review should be documented and signed-off by the relevant site manager.
3. The review document should be available to any Authorised Officer or Aboriginal Heritage Officer as authorised under section 165A and section 181(1)(b) of the Act, or any other representative of the RAP or FP–SR.

Additional management measures will be implemented for the management of intangible Aboriginal cultural heritage values as follows (see Section 6.4):

### Wedge-tailed Eagle (WTE):

1. Applying a 500m buffer from blade tips, overhead powerline infrastructure and project-related buildings around identified nest sites as avoidance.
2. Protection of existing nests to maintain existing known eagle populations to limit encroachments of young or neighbouring pairs more susceptible to collision strikes.
3. Monitoring surveys of known and any incidentally recorded WTE nests will be undertaken prior and during the early part of WTE breeding season to determine whether nests are active. Where possible, construction activities may be modified to reduce or avoid disturbance within 500m of active nests until any chicks have fledged. The typical WTE breeding season is generally June to October, depending on conditions. Incubation lasts for approx. 45 days.

### Southern Bent-wing Bat (SBWB):

1. Wind turbine blades will be at least 40m above the ground.
2. Avoiding areas with higher recorded activity.
3. Micro-siting turbines to avoid high quality habitat within 269m of a proposed wind turbine and minimising medium and lower quality habitat with this distance of a wind turbine blade.
4. Increasing the wind turbine cut-in wind speed for many wind turbines.
5. Implementing wind turbine blade feathering to prevent “free spinning” below cut-in wind speeds.
6. Investigate the feasibility of acoustic deterrents.
7. If mortality is recorded, enhanced mitigation measure will be put in place.

8. Offset residual impacts by considering options to contribute to SBWB research and improved management.
9. Implement Bam Plan which outlines monitoring protocols and responsibilities, trigger responses to a listed species being impacted by the wind farm and reporting requirement.
10. Monitor with mortality surveys, bat detectors and GHFF surveys.

Native vegetation, culturally significant vegetation and hydrology:

1. A placement of a 100-metre buffer around all DEECA-mapped wetlands to exclude WTG. This area was selected as a means of avoiding:
    a. Physical disturbance to wetlands and their fringes; and
    b. Limit surface water runoff, and entrained sediment loads reaching these ephemeral wetlands from construction works zones.
2. Inclusion of a 100-metre buffer around watercourses including Mustons Creek, Drysdale Creek and smaller drainages, to prevent:
    a. Unnecessary disturbance to the watercourses or their banks; and
    b. Limit potential downstream effects from construction activities such as sedimentation of water.
3. Ephemeral drainage lines were buffered by 30 metres to:
    a. Limit physical disturbance to the drainage line; and
    b. Limit surface water runoff and entrained sediment loads reaching these ephemeral drainages from construction work zones.
4. Watercourse crossings have been minimised through the siting of the accessways. The proposed crossings are necessary to provide access to infrastructure and will prevent vehicles being diverted onto public roads. Other key design measures for watercourse crossings include:
    a. Permanent surface structures designed to maintain existing overland flow paths and not cause increased upstream flood levels; and
    b. Waterway crossings will be designed to accommodate a 1 in 10 ARI design criteria.
5. Re-alignment and micro-siting of infrastructure has avoided most of the native vegetation within the development footprint; and
6. Re-alignment and micro-siting of infrastructure has avoided much of the GEWVVP and NTGVVP within the development footprint.
7. After updated surveys of all native vegetation within the Project study area in June 2025, following updates to the Wind Farm layout (v183.6), some new impacts to native vegetation were noted. Wind Prospect adjusted the footprint (v183.7) to avoid most new occurrences of native vegetation and TECs.
8. During early design iterations, road upgrades proposed along Hexham-Ballangeich Road were projected to incur a high level of impact to NTGVVP and GEWVVP. Wind Prospect, along with Ratio Traffic Consultants, re-examined the road upgrade requirements, in particular regarding width of stormwater drains, and necessity of certain site entrances along this road. In August 2025, as a result, two site access locations which crossed areas of NTGVVP and GEWVVP were removed, with a new access location located to avoid native vegetation. As a result, impacts to NTGVVP and GEWVVP have been reduced along Hexham-Ballangeich Road, by avoiding approximately 3km of roadside. Road upgrade area width could not be reduced.

9. The number of site access points was reduced from 10 down to 8 through consolidation. As a result, impacts to native vegetation, which included areas of NTGVVP and GEWVVP, were reduced.
10. Where turbines are proposed within areas of assumed SHWTLP, impacts have been reduced by removing two laydown areas and co-locating cables and tracks.
11. Where the internal transmission line crosses patches of native vegetation without trees or shrubs, the line will be strung from either end, avoiding impacts to native vegetation.

## 8.4 Operation and Maintenance Phase

CHMP 19602 Conditions and Contingency Plan do not apply. Recommended management measures to manage risk are:

Before commencing any maintenance activity that may harm tangible or intangible Aboriginal places, the following management measures should be undertaken:

1. Check the VAHR for specific information relating to any registered tangible or intangible Aboriginal place in the investigation area.
2. Consult with a Heritage Advisor on any additional appropriate management measures to ensure that the maintenance activity complies with the Act and no harm occurs to registered tangible or intangible Aboriginal places.

If any tangible or intangible Aboriginal place is discovered during any maintenance activity, the following management measures should be undertaken:

5. Any activity that may harm the discovery must cease.
6. The discovery must be reported to FP–SR.
7. If any suspected human remains are discovered, works must cease. The Victoria Police and State Coroner's Office must be notified. If there are reasonable grounds to believe the remains are Aboriginal, the Coronial Admissions and Enquires hotline must be contacted.
8. Before continuing the maintenance activity, authorisation is required under the Act to harm the Aboriginal place.

The management of intangible Aboriginal cultural heritage values will be subject to additional management measure as follows (see Section 6.4):

### Wedge-tailed Eagle (WTE):

1. Protection of existing nests to maintain existing known eagle populations to limit encroachments of young or neighbouring pairs more susceptible to collision strikes.
2. Implementation of the BAM Plan, with specific mitigation section for WTE provisioning for a collision investigation following mortality surveys, monitoring and reporting to continually adjust the adaptive management plan.
3. A Bird and Bat Adaptive Management Plan (BBAMP) has been produced which will implement post construction monitoring to assess the effectiveness of mitigation measures and identify potential impacts on bird and bat species once the wind farm becomes operational. The data collected will provide insights into

changes in species behaviour, species-specific risks, and support the development of adaptive management strategies.
4. Pest Management Plan to keep pest populations controlled including animal carcass removal aiming to limit opportunistic eagle scavenging in high-risk impact areas and proximity to turbines.
5. Develop "On Country Guardians" with EMAC to engage with and support eagle mitigations.

Southern Bent-wing Bat (SBWB):

1. Increasing the wind turbine cut-in wind speed for many wind turbines.
2. Implementing wind turbine blade feathering to prevent "free spinning" below cut-in wind speeds.
3. Investigate the feasibility of acoustic deterrents.
4. If mortality is recorded, enhanced mitigation measure will be put in place.
5. Implement Bam Plan which outlines monitoring protocols and responsibilities, trigger responses to a listed species being impacted by the wind farm and reporting requirement.
6. Monitor with mortality surveys, bat detectors and GHFF surveys.

Native vegetation, culturally significant vegetation and hydrology:

1. Develop "On Country Guardians" with EMAC to collaborate on native vegetation and flora assessment to help management mitigation measures, impacts or offsets.

## 8.5 Decommissioning Phase

The decommissioning phase of the project is unlikely to involve works that will require disturbing ground in areas that were previously undisturbed by the construction, and operation and maintenance phases of the project. This means the works are unlikely to impact any registered or unidentified tangible or intangible Aboriginal cultural heritage. No monitoring or reporting measures are considered necessary.

# 9 CONCLUSION

The project area contains significant Aboriginal cultural heritage values (Section 6). These values can be effectively managed by the CHMP process, design mitigation and additional management measures (Sections 7 & 8).

Wind farm projects provide a unique opportunity to investigate and discover Aboriginal cultural heritage in regional Victoria that would otherwise not be known. These projects are flexible and can typically avoid harm to the Aboriginal cultural heritage. Overall, this project will contribute to a better understanding of the Aboriginal cultural heritage of the region.

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# APPENDIX 1 – PREVIOUSLY REGISTERED ABOPRIGINAL PLACES WITHIN THE GEOGRAPHIC REGION

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7321-0007 | MINJAH NTH 1 | Earth Feature (Mound) |
| 7321-0008 | MINJAH NTH 2 | Earth Feature (Mound) |
| 7321-0009 | MINJAH NTH 3 | Earth Feature (Mound) |
| 7321-0033 | TULLIALIAN | Earth Feature (Mound) |
| 7321-0076 | GOODWOOD 1 | Earth Feature (Mound) |
| 7321-0077 | GOODWOOD 2 | Earth Feature (Mound) |
| 7321-0078 | SPRING CREEK 1 | Artefact Scatter |
| 7321-0184 | CARRAMAR | Earth Feature (Mound) |
| 7321-0185 | TATIARA | Earth Feature (Mound) |
| 7321-0186 | RO-1 | Scarred Tree |
| 7321-0187 | RO-2 | Scarred Tree |
| 7321-0188 | RO-3 | Scarred Tree |
| 7321-0189 | RO-4 | Scarred Tree |
| 7321-0190 | RO-5 | Scarred Tree |
| 7321-0195 | KULEAH 1 | Artefact Scatter |
| 7321-0196 | J AFFLECK 2-4 | Earth Feature (Mound) |
| 7321-0201 | MCWHINNEY 1 | Scarred Tree |
| 7321-0202 | MCWHINNEY 2 | Scarred Tree |
| 7321-0203 | J AFFLECK 1 | Earth Feature (Mound) |
| 7321-0275 | TATIARA 1 | Artefact Scatter |
| 7321-0283 | MATHISON 1 | Artefact Scatter |
| 7321-0284 | NORCKS 1 | Artefact Scatter |
| 7321-0286 | LOQUET COLLECTION | Object Collection |
| 7321-0302 | CRABBY MOUND | Earth Feature (Mound) |
| 7321-0304 | WHITEHEADS GRINDSTONE | Artefact Scatter |
| 7321-0307 | QUAMBY | Earth Feature (Mound) |
| 7321-0308 | UNION TREE 1 | Scarred Tree |
| 7321-0309 | UNION TREE 2 | Scarred Tree |
| 7321-0310 | WINDMILL | Earth Feature (Soil Deposit); Artefact Scatter |
| 7321-0311 | THE UNION | Artefact Scatter |
| 7321-0312 | DOUGLAS 1 | Artefact Scatter |
| 7321-0313 | VIN RICHARDSON 1 | Artefact Scatter |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7321-0314 | SPRING CREEK 2 | Artefact Scatter |
| 7321-0315 | SPRING CREEK 3 | Artefact Scatter |
| 7321-0316 | WHITEHEAD'S AXE | Artefact Scatter |
| 7321-0317 | SPRING CREEK 4 | Artefact Scatter |
| 7321-0319 | SPRING CREEK 5 | Artefact Scatter |
| 7321-0358 | SPRING CREEK 6 | Artefact Scatter |
| 7321-0359 | SPRING CREEK 7 | Artefact Scatter |
| 7321-0360 | MINJAH M-1 | Earth Feature (Mound) |
| 7321-0361 | MINJAH M-2 | Earth Feature (Mound) |
| 7321-0362 | MINJAH M-3 | Earth Feature (Mound) |
| 7321-0363 | MINJAH M-4 | Earth Feature (Mound) |
| 7321-0364 | MINJAH M-5 | Earth Feature (Mound) |
| 7321-0365 | MINJAH M-6 | Earth Feature (Mound) |
| 7321-0366 | MINJAH M-7 | Earth Feature (Mound) |
| 7321-0367 | MINJAH M-8-DOUGHNUT | Earth Feature (Mound) |
| 7321-0368 | MINJAH M-9 | Earth Feature (Mound) |
| 7321-0369 | MINJAH M-10 | Earth Feature (Mound) |
| 7321-0370 | MINJAH M-11 | Earth Feature (Mound) |
| 7321-0371 | MINJAH M-12 | Earth Feature (Mound) |
| 7321-0372 | MINJAH M-13 | Earth Feature (Mound) |
| 7321-0373 | MINJAH M-14 | Earth Feature (Mound) |
| 7321-0374 | MINJAH M-15 | Earth Feature (Mound) |
| 7321-0375 | MINJAH M-16 | Earth Feature (Mound) |
| 7322-0039 | MCARTHUR CK CLUSTER 4 | Earth Feature (Mound) |
| 7322-0040 | MCARTHUR CK CLUSTER 5 | Earth Feature (Mound) |
| 7322-0041 | MCARTHUR CK CLUSTER 3 | Earth Feature (Mound) |
| 7322-0042 | MCARTHUR CK CLUSTER 1 | Earth Feature (Mound) |
| 7322-0043 | MCARTHUR CK CLUSTER 6 | Earth Feature (Mound) |
| 7322-0044 | MCARTHUR CK CLUSTER 2 | Earth Feature (Mound) |
| 7322-0045 | MCARTHUR CK CLUSTER 7 | Earth Feature (Mound) |
| 7421-0014 | HEXHAM PARK 1 | Scarred Tree |
| 7421-0015 | HEXHAM PARK 2 | Scarred Tree |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7421-0016 | HEXHAM PARK 3 | Earth Feature (Mound) |
| 7421-0017 | HEXHAM PARK 4 | Earth Feature (Mound) |
| 7421-0018 | HEXHAM PARK 5 | Earth Feature (Mound) |
| 7421-0019 | HEXHAM PARK 6 | Scarred Tree |
| 7421-0020 | HEXHAM PARK 7 | Earth Feature (Mound) |
| 7421-0021 | KEILLOR 1 | Earth Feature (Mound) |
| 7421-0022 | KEILLOR 2 | Earth Feature (Mound) |
| 7421-0023 | KEILLOR 3 | Earth Feature (Mound) |
| 7421-0029 | TEA TREE CK SWAMP 1 | Earth Feature (Mound) |
| 7421-0030 | TEA TREE CK SWAMP 2 | Earth Feature (Mound) |
| 7421-0031 | TEA TREE CK SWAMP 3 | Earth Feature (Mound) |
| 7421-0032 | TEA TREE CK SWAMP 4 | Earth Feature (Mound) |
| 7421-0033 | TEA TREE CK SWAMP 5 | Earth Feature (Mound) |
| 7421-0034 | TEA TREE CK SWAMP 6 | Earth Feature (Mound) |
| 7421-0035 | TEA TREE CK SWAMP 7 | Earth Feature (Mound) |
| 7421-0036 | TEA TREE CK SWAMP 8 | Earth Feature (Mound) |
| 7421-0037 | TEA TREE CK SWAMP 9 | Earth Feature (Mound) |
| 7421-0038 | TEA TREE CK SWAMP 10 | Earth Feature (Mound) |
| 7421-0039 | TEA TREE CK SWAMP 11 | Earth Feature (Mound) |
| 7421-0040 | TEA TREE CK SWAMP 12 | Earth Feature (Mound) |
| 7421-0041 | TEA TREE CK SWAMP 13 | Earth Feature (Mound) |
| 7421-0042 | TEA TREE CK SWAMP 14 | Earth Feature (Mound) |
| 7421-0043 | TEA TREE CK SWAMP 15 | Earth Feature (Mound) |
| 7421-0044 | COOMETE FEEDING PADDOCK 1 | Earth Feature (Mound) |
| 7421-0045 | COOMETE FEEDING PADDOCK 2 | Earth Feature (Mound) |
| 7421-0046 | COOMETE FEEDING PADDOCK 3 | Earth Feature (Mound) |
| 7421-0047 | COOMETE FEEDING PADDOCK 4 | Earth Feature (Mound) |
| 7421-0048 | COOMETE FEEDING PADDOCK 5 | Earth Feature (Mound) |
| 7421-0049 | COOMETE FEEDING PADDOCK 6 | Earth Feature (Mound) |
| 7421-0050 | COOMETE FEEDING PADDOCK 7 | Earth Feature (Mound) |
| 7421-0051 | COOMETE FEEDING PADDOCK 8 | Earth Feature (Mound) |
| 7421-0052 | COOMETE FEEDING PADDOCK 9 | Earth Feature (Mound) |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7421-0053 | COOMETE FEEDING PADDOCK 10 | Earth Feature (Mound) |
| 7421-0054 | COOMETE FEEDING PADDOCK 11 | Earth Feature (Mound) |
| 7421-0055 | COOMETE FEEDING PADDOCK 12 | Earth Feature (Mound) |
| 7421-0056 | COOMETE FEEDING PADDOCK 13 | Earth Feature (Mound) |
| 7421-0057 | MERRANG 1 | Earth Feature (Mound) |
| 7421-0058 | BOONERAH 1 | Earth Feature (Mound) |
| 7421-0059 | BOONERAH 2 | Earth Feature (Mound) |
| 7421-0060 | KEILLOR 6 | Earth Feature (Mound) |
| 7421-0061 | KEILLOR 4 | Earth Feature (Mound) |
| 7421-0062 | WOORABINDA 1 | Earth Feature (Mound) |
| 7421-0063 | WOORABINDA 2 | Earth Feature (Mound) |
| 7421-0064 | WOORABINDA 3 | Earth Feature (Mound) |
| 7421-0065 | WOORABINDA 4 | Earth Feature (Mound) |
| 7421-0066 | GOOD 1 | Aboriginal Cultural Place |
| 7421-0068 | KAME 1 | Earth Feature (Mound) |
| 7421-0069 | NO.1 FORD, WOORABINDA 1 | Earth Feature (Mound) |
| 7421-0070 | NO.1 FORD, WOORABINDA 2 | Earth Feature (Mound) |
| 7421-0071 | NO.1 FORD, WOORABINDA 3 | Earth Feature (Mound) |
| 7421-0072 | NO.1 FORD, WOORABINDA 4 | Earth Feature (Mound) |
| 7421-0073 | NO.1 FORD, WOORABINDA 5 | Earth Feature (Mound) |
| 7421-0074 | NO.1 FORD, WOORABINDA 6 | Earth Feature (Mound) |
| 7421-0075 | NO.1 FORD, WOORABINDA 7 | Earth Feature (Mound) |
| 7421-0076 | NO.1 FORD, WOORABINDA 8 | Earth Feature (Mound) |
| 7421-0077 | HOLDING PADDOCK MND, WOORABINDA | Earth Feature (Mound) |
| 7421-0078 | FORD ISLAND MOUND | Earth Feature (Mound) |
| 7421-0079 | NO.1 ROBERTSON'S MOUND, WOORABINDA | Earth Feature (Mound) |
| 7421-0080 | MASTERS PDK MND, WOORABINDA | Earth Feature (Mound) |
| 7421-0081 | HAMILTON'S PDK, WOORABINDA 1 | Earth Feature (Mound) |
| 7421-0082 | HAMILTON'S PDK, WOORABINDA 2 | Earth Feature (Mound) |
| 7421-0083 | HAMILTON'S PDK, WOORABINDA 3 | Earth Feature (Mound) |
| 7421-0084 | HAMILTON'S PDK, WOORABINDA 4 | Earth Feature (Mound) |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7421-0085 | HAMILTON'S PDK, WOORABINDA 5 | Earth Feature (Mound) |
| 7421-0086 | SNIPE PDK, WOORABINDA 1 | Earth Feature (Mound) |
| 7421-0087 | SNIPE PDK, WOORABINDA 2 | Earth Feature (Mound) |
| 7421-0088 | MERRANG PDK, WOORABINDA 1 | Earth Feature (Mound) |
| 7421-0089 | MERRANG PDK, WOORABINDA 2 | Earth Feature (Mound) |
| 7421-0090 | CORROBOREE PDK CLUSTER 1 | Earth Feature (Mound) |
| 7421-0091 | CORROBOREE PDK CLUSTER 2 | Earth Feature (Mound) |
| 7421-0092 | CORROBOREE PDK CLUSTER 3 | Earth Feature (Mound) |
| 7421-0093 | CORROBOREE PDK CLUSTER 4 | Earth Feature (Mound) |
| 7421-0094 | CORROBOREE PDK CLUSTER 5 | Earth Feature (Mound) |
| 7421-0095 | CORROBOREE PDK CLUSTER 6 | Earth Feature (Mound) |
| 7421-0096 | L. CONNEWARREN 1 | Earth Feature (Mound) |
| 7421-0097 | L. CONNEWARREN 3 | Earth Feature (Mound) |
| 7421-0098 | L. CONNEWARREN 4 | Earth Feature (Mound) |
| 7421-0099 | L. CONNEWARREN 5 | Earth Feature (Mound) |
| 7421-0100 | L. CONNEWARREN 6 | Earth Feature (Mound) |
| 7421-0101 | COOMETE/MUSTONS CK MOUND | Earth Feature (Mound) |
| 7421-0102 | MERRANG 2 | Earth Feature (Mound) |
| 7421-0103 | MERRANG 3 | Earth Feature (Mound) |
| 7421-0104 | NTH TEA TREE PDK, COOMETE 1 | Earth Feature (Mound) |
| 7421-0105 | NO.3 PDK, COOMETE 1 | Earth Feature (Mound) |
| 7421-0106 | NO.3 PDK, COOMETE 2 | Earth Feature (Mound) |
| 7421-0107 | NO.3 PDK, COOMETE 3 | Earth Feature (Mound) |
| 7421-0108 | NO.3 PDK, COOMETE 4 | Earth Feature (Mound) |
| 7421-0109 | NO.3 PDK, COOMETE 5 | Earth Feature (Mound) |
| 7421-0112 | WOOLONGOON 1 | Earth Feature (Mound) |
| 7421-0113 | CONNEWARREN PARK 1 | Earth Feature (Mound) |
| 7421-0114 | CONNEWARREN PARK 2 | Earth Feature (Mound) |
| 7421-0115 | CONNEWARREN PARK 3 | Earth Feature (Mound); Artefact Scatter |
| 7421-0116 | MUSTONS CK 8 | Artefact Scatter |
| 7421-0117 | MUSTONS CK 9 | Artefact Scatter |
| 7421-0118 | MUSTONS CK 10 | Artefact Scatter |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7421-0119 | MUSTONS CK 11 | Artefact Scatter |
| 7421-0120 | MUSTONS CK 12 | Artefact Scatter |
| 7421-0121 | MUSTONS CK 13 | Artefact Scatter |
| 7421-0122 | MUSTONS CK 14 | Artefact Scatter |
| 7421-0123 | MUSTONS CK 15 | Artefact Scatter |
| 7421-0124 | MUSTONS CK 16 | Artefact Scatter |
| 7421-0125 | MUSTONS CK 17 | Artefact Scatter |
| 7421-0126 | MUSTONS CK 18 | Artefact Scatter |
| 7421-0127 | MUSTONS CK 19 | Artefact Scatter |
| 7421-0128 | MUSTONS CK 21 | Artefact Scatter |
| 7421-0129 | MUSTONS CK 22 | Artefact Scatter |
| 7421-0130 | MUSTONS CK 23 | Artefact Scatter |
| 7421-0131 | MUSTONS CK 24 | Artefact Scatter |
| 7421-0132 | MUSTONS CK 25 | Artefact Scatter |
| 7421-0133 | MUSTONS CK 26 | Artefact Scatter |
| 7421-0134 | MUSTONS CK 27 | Artefact Scatter |
| 7421-0135 | MUSTONS CK 28 | Artefact Scatter |
| 7421-0136 | MUSTONS CK 29 | Artefact Scatter |
| 7421-0137 | MUSTONS CK 30 | Artefact Scatter |
| 7421-0138 | SOUTH PADDOCK CLUSTER 1 | Earth Feature (Mound) |
| 7421-0139 | SOUTH PADDOCK CLUSTER 2 | Earth Feature (Mound) |
| 7421-0140 | SOUTH PADDOCK CLUSTER 3 | Earth Feature (Mound) |
| 7421-0141 | SOUTH PADDOCK CLUSTER 4 | Earth Feature (Mound) |
| 7421-0142 | SOUTH PADDOCK CLUSTER 5 | Earth Feature (Mound) |
| 7421-0143 | SOUTH PADDOCK CLUSTER 6 | Earth Feature (Mound) |
| 7421-0144 | SOUTH PADDOCK CLUSTER 7 | Earth Feature (Mound) |
| 7421-0145 | SOUTH PADDOCK CLUSTER 8 | Earth Feature (Mound) |
| 7421-0146 | AERODROME PADDOCK 1 | Earth Feature (Mound) |
| 7421-0147 | AERODROME PADDOCK 2 | Earth Feature (Mound) |
| 7421-0148 | SCRUBBY CK 1 | Artefact Scatter |
| 7421-0149 | SCRUBBY CK 2 | Artefact Scatter |
| 7421-0150 | SCRUBBY CK 3 | Artefact Scatter |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7421-0151 | SCRUBBY CK 4 | Earth Feature (Soil Deposit) |
| 7421-0152 | SCRUBBY CK 5 | Artefact Scatter |
| 7421-0153 | SCRUBBY CK 8 | Artefact Scatter |
| 7421-0154 | SCRUBBY CK 7 | Artefact Scatter |
| 7421-0160 | ELLERSLIE 1 | Artefact Scatter |
| 7421-0161 | ELLERSLIE 2 | Artefact Scatter |
| 7421-0162 | ELLERSLIE 3 | Artefact Scatter |
| 7421-0163 | ELLERSLIE 4 | Earth Feature (Soil Deposit) |
| 7421-0164 | ELLERSLIE 5 | Earth Feature (Soil Deposit) |
| 7421-0165 | ELLERSLIE 6 | Earth Feature (Soil Deposit) |
| 7421-0166 | ELLERSLIE 7 | Scarred Tree |
| 7421-0167 | ELLERSLIE 8 | Artefact Scatter |
| 7421-0168 | HEXHAM 1 | Artefact Scatter |
| 7421-0169 | HEXHAM 2 | Artefact Scatter |
| 7421-0170 | HEXHAM 3 | Earth Feature (Soil Deposit) |
| 7421-0171 | HEXHAM 4 | Artefact Scatter |
| 7421-0185 | MC 1 | Artefact Scatter |
| 7421-0195 | REICHMANS LANE 1 | Artefact Scatter |
| 7421-0196 | STONY CREEK TRIBUTARY 1 | Artefact Scatter; Object Collection |
| 7421-0197 | MT EMU CREEK 2 | Object Collection |
| 7421-0198 | STONY CREEK 11 | Artefact Scatter; Object Collection |
| 7421-0198 | STONY CREEK 11 | Object Collection |
| 7421-0200 | MT EMU CREEK SOUTH | Object Collection |
| 7421-0232 | SALT CREEK LDAD 1 | LDAD |
| 7421-0235 | BOONERAH ESTATE ROAD 1 SCARRED TREE | Scarred Tree |
| 7421-0250 | HEXHAM PARK LDAD 3 | LDAD |
| 7421-0251 | HEXHAM PARK LDAD 2 | LDAD |
| 7421-0252 | HEXHAM PARK LDAD 1 | LDAD |
| 7421-0258 | SALT CREEK LDAD 4 | LDAD |
| 7421-0259 | BOONERAH ESTATE ROAD 2 SCARRED TREE | Scarred Tree |
| 7422-0064 | HOPKINS HILL | Earth Feature (Mound) |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7422-0066 | COOLANA 1 | Earth Feature (Mound) |
| 7422-0067 | COOLANA 2 | Earth Feature (Mound) |
| 7422-0068 | COOLANA 3 | Earth Feature (Mound) |
| 7422-0069 | COOLANA 4 | Scarred Tree |
| 7422-0070 | COOLANA 5 | Scarred Tree |
| 7422-0071 | COOLANA 6 | Scarred Tree |
| 7422-0072 | COOLANA 7 | Scarred Tree |
| 7422-0073 | COOLANA 8 | Scarred Tree |
| 7422-0074 | COOLANA 9 | Scarred Tree |
| 7422-0075 | COOLANA 10 | Scarred Tree |
| 7422-0095 | KIA ORA 1 | Earth Feature (Mound) |
| 7422-0098 | HOPKINS BEND 1 | Earth Feature (Mound) |
| 7422-0099 | HOPKINS BEND 2 | Earth Feature (Mound) |
| 7422-0105 | DUNVEGAN 1 | Earth Feature (Mound) |
| 7422-0108 | MANIFOLD MOUND B | Earth Feature (Mound) |
| 7422-0117 | BELAIR | Earth Feature (Mound) |
| 7422-0120 | DUNVEGAN 2 | Artefact Scatter |
| 7422-0135 | BV 2 | Scarred Tree |
| 7422-0138 | BV 3 | Earth Feature (Mound) |
| 7422-0139 | BV 4 | Earth Feature (Mound) |
| 7422-0140 | BV 1 | Scarred Tree |
| 7422-0144 | BV 5 | Earth Feature (Mound) |
| 7422-0145 | BV 6 | Earth Feature (Mound) |
| 7422-0146 | BV 7 | Earth Feature (Mound) |
| 7422-0147 | BV 8 | Earth Feature (Mound) |
| 7422-0150 | CALROSSIE 1 | Earth Feature (Mound) |
| 7422-0151 | CALROSSIE 2 | Earth Feature (Mound) |
| 7422-0152 | WESLEY | Earth Feature (Mound) |
| 7422-0168 | BOOROOK 1 | Earth Feature (Mound) |
| 7422-0169 | BOOROOK 3 | Earth Feature (Mound) |
| 7422-0170 | BOOROOK 2 | Earth Feature (Mound) |
| 7422-0171 | BOOROOK 7 | Earth Feature (Mound) |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7422-0172 | BOOROOK 4 | Earth Feature (Mound) |
| 7422-0173 | BOOROOK 6 | Earth Feature (Mound) |
| 7422-0174 | BOOROOK 5 | Earth Feature (Mound) |
| 7422-0196 | HOPKINS VALE | Scarred Tree |
| 7422-0225 | REEYUCK | Earth Feature (Mound) |
| 7422-0235 | C. MANIFOLD 1 | Earth Feature (Mound) |
| 7422-0236 | C. MANIFOLD 2 | Earth Feature (Mound) |
| 7422-0237 | C. MANIFOLD 3 | Earth Feature (Mound) |
| 7422-0239 | C. MANIFOLD 5 | Scarred Tree |
| 7422-0240 | C. MANIFOLD 6 | Scarred Tree |
| 7422-0241 | C. MANIFOLD 7 | Aboriginal Ancestral Remains (Burial) |
| 7422-0242 | MCKENZIE CASSIDY 1 | Scarred Tree |
| 7422-0243 | MCKENZIE 1 | Earth Feature (Mound) |
| 7422-0244 | MCKENZIE CASSIDY 2 | Scarred Tree |
| 7422-0245 | MCKENZIE 2 | Earth Feature (Mound) |
| 7422-0246 | A. MANIFOLD 8 | Scarred Tree |
| 7422-0247 | A. MANIFOLD 9 | Scarred Tree |
| 7422-0248 | A. MANIFOLD 10 | Earth Feature (Mound) |
| 7422-0249 | A. MANIFOLD 11 | Scarred Tree |
| 7422-0300 | I. MONTICTH | Earth Feature (Mound) |
| 7422-0302 | R. PATISON | Artefact Scatter |
| 7422-0303 | I. ARMSTRONG | Earth Feature (Mound) |
| 7422-0315 | HAMILTON 1 | Earth Feature (Mound) |
| 7422-0316 | CARAMUT NORTH 1 | Earth Feature (Mound) |
| 7422-0317 | ABERDEEN 1 | Earth Feature (Mound) |
| 7422-0318 | ABERDEEN 2 | Earth Feature (Mound) |
| 7422-0319 | HIGH PLAINS 1 | Scarred Tree |
| 7422-0320 | HIGH PLAINS 2 | Earth Feature (Mound) |
| 7422-0354 | BERNEICH 2 | Earth Feature (Mound) |
| 7422-0378 | IM 3 | Earth Feature (Mound) |
| 7422-0395 | COOLANA A | Earth Feature (Mound) |
| 7422-0396 | COOLANA B | Earth Feature (Mound) |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7422-0397 | COOLANA C | Earth Feature (Mound) |
| 7422-0398 | COOLANA D | Earth Feature (Mound) |
| 7422-0408 | MANIFOLD SCATTERS 5 | Artefact Scatter |
| 7422-0409 | MANIFOLD SCATTERS 1 | Artefact Scatter |
| 7422-0476 | JUBB 1 | Scarred Tree |
| 7422-0477 | JUBB 2 | Earth Feature (Hearth) |
| 7422-0486 | MANIFOLD SCATTERS 2 | Artefact Scatter |
| 7422-0487 | MANIFOLD SCATTERS 3 | Artefact Scatter |
| 7422-0488 | MANIFOLD SCATTERS 4 | Artefact Scatter |
| 7422-0489 | MANIFOLD SCATTERS 6 | Artefact Scatter |
| 7422-0490 | MANIFOLD SCATTERS 7 | Artefact Scatter |
| 7422-0491 | MANIFOLD SCATTERS 8 | Artefact Scatter |
| 7422-0492 | MANIFOLD SCATTERS 9 | Artefact Scatter |
| 7422-0493 | MANIFOLD SCATTERS 10 | Artefact Scatter |
| 7422-0494 | MANIFOLD SCATTERS 11 | Artefact Scatter |
| 7422-0518 | MANIFOLD MOUND | Earth Feature (Mound) |
| 7422-0519 | MANIFOLD MOUND A | Earth Feature (Mound) |
| 7422-0520 | 'WAMA' COLLECTION | Object Collection |
| 7422-0527 | WEST RACECOURSE PDK. MOUND | Earth Feature (Mound) |
| 7422-0529 | GALE'S AXE | Artefact Scatter |
| 7422-0530 | CARAMUT 1 | Stone Feature (Stone Arragnement) |
| 7422-0531 | MUSTONS CK 1 | Artefact Scatter |
| 7422-0532 | MUSTONS CK 2 | Artefact Scatter |
| 7422-0533 | MUSTONS CK 3 | Artefact Scatter |
| 7422-0534 | MUSTONS CK 4 | Artefact Scatter |
| 7422-0535 | MUSTONS CK 5 | Artefact Scatter |
| 7422-0536 | MUSTONS CK 6 | Artefact Scatter |
| 7422-0537 | MUSTONS CK 7 | Artefact Scatter |
| 7422-0541 | DENHOLM GREEN 1 | Artefact Scatter |
| 7422-0542 | CARAMUT 2 | Artefact Scatter |
| 7422-0543 | CARAMUT 3 | Artefact Scatter |
| 7422-0544 | CARAMUT 4 | Artefact Scatter |

| VAHR No | Aboriginal Place Name | Place Type |
|---|---|---|
| 7422-0545 | CARAMUT 5 | Artefact Scatter |
| 7422-0563 | COOENGLE - 1 | Artefact Scatter |
| 7422-0569 | COBRA KILLUC A1 | LDAD |
| 7422-0570 | COBRA KILLUC A2 | LDAD |
| 7422-0581 | BOORUG & MONDILIBI LANDSCAPE RIDGE | Artefact Scatter |
| 7422-0582 | OLLOCIBBERLOKE LDAD 2 | LDAD |
| 7422-0583 | MURKUPANG LANDSCAPE LDAD | LDAD |
| 7422-0584 | OLLOCIBBERLOKE LDAD 1 | LDAD |
| 7422-0594 | COBRA KILLUC WR ST1 | Scarred Tree |
| 7422-0595 | COBRA KILLUC WR ST2 | Scarred Tree; Object Collection |
| 7422-0596 | COBRA KILLUC WR ST3&4 | Scarred Tree; Object Collection |
| 7422-0598 | COBRA KILLUC WR ST5 | Scarred Tree |

# APPENDIX 2 – SUMMARY CVs

# Dr Thomas (Tom) Rymer
Archaeologist

tomr@tardisarc.com.au | 03 9676 9009


## Qualifications
Doctor of Philosophy (Archaeology)
Graduate Diploma of Humanities
Bachelor of Arts – Honours (First Archaeology)

## Memberships
Australasian Society of Historic Archaeology: International Council on Monuments and Sites: Full International Member; Heritage Advisor: Aboriginal Heritage Act 2006

## Training & Workshop Attendance
Construction Industry White (Red) Card; First Aid; 4wd

## Role Responsibilities
Heritage Advisor; Project Management

## Career Summary
Tom has been consulting in Victoria since 2005 and has managed heritage requirements for subdivisions (industrial & residential), infrastructure projects (roads, pipelines & powerlines) and renewables (wind & solar).

## Relevant Experience – Aboriginal Cultural Heritage

### Renewables
Ararat Wind Farm; Bald Hills Wind Farm; Battery Storage Facility, 70 Littles Lane, Terang; Brewster Wind Farm; Bulgana Wind Farm; Campbells Bridge Wind Farm; Cherry Tree Wind Farm; Delburn Wind Farm; Dundonnell Wind Farm; Hexham Wind Farm; Lexton Wind Farm; Moorabool Wind Farm CHMP Amendments; Mortons Lane Wind Farm; Mumblin Wind Farm; Murra Warra Wind Farm, Penshurst Wind Farm, Salt Creek Wind Farm; Stockyard Hill Wind Farm; Swansons Lane Wind Farm; Watta Wella Wind Farm; Woolsthorpe Wind Farm.

### Pipelines
APA Groups Gas Pipeline (2013-2014); Gippsland Water Factory; Lake Tyers Sewerage Pipeline (2009-2011); South East Water Ltd – Officer South Rising Main (2007); Thiess Degrémont – Victorian Desalination Plant (Utilities Corridor) (2009-2014).

### Powerlines
Ararat Wind Farm External Overhead Powerline; Bald Hills Wind Farm External Overhead Powerline; Bushfire Powerline Replacement (2016-2017); Dundonnell Wind Farm External Overhead Powerline; Mount Mercer Wind Farm Overhead Powerline; Stockyard Hill Wind Farm External Overhead Powerline; Yendon Wind Farm Powerline; Woolsthorpe Wind Farm External Overhead Powerline.

### Roads
Narre Warren-Cranbourne Road Duplication CHMP Amendments; Epping Road Upgrades CHMP Amendments; Eastlink; Mount Mary Road & Green Hill Road, Eynesbury; Pakenham Bypass – Cardinia Creek Aboriginal Cultural Heritage; Plenty Road Upgrade, Mordialloc Bypass; Pioneer Road Upgrade, Lang Lang.

### Sundry Utilities
Melbourne Water & GHD Pty Ltd – Toomuc Creek Retarding Basin; Westernport Water – Candowie Reservoir Upgrade; Tarrone Power Station, Tarrone.

### Subdivisions
Burvilles Road, Armstrong Creek; 50 McLeod Road, Carrum; Paggett Road, Carrum Downs; 1470 Ballarto Road, Clyde; Cascades on Clyde, Clyde North; 121 Grices Road, Clyde North; Kilora Park Estate, Clyde North; Pattersons Road, Clyde North; 1100 Pound Road, Clyde North; 1275 Pound Road, Clyde North; 1505-1525 Pound Road, Clyde North; Minta Farm East & West, Clyde North; 490 Soldiers Road, Clyde North; 550 Craigieburn Road, Craigieburn; Wetlands 950 Western Port Highway, Cranbourne; Amstel Golf Course, Cranbourne; Botanic Ridge Estate, Cranbourne; Hunt Club, Cranbourne; Settlers Run Estate, Cranbourne South; M3 Estate, Dandenong South; 342 Hammond Road, Dandenong South; Deanside Estate, Deanside; 1056-1150 Taylors Road, Fraser Rise; Donnybrae Estate, Donnybrook; Kinbrook Estate, Donnybrook; Peppercorn Hill Estate, Donnybrook; 1305 Donnybrook Road, Donnybrook; Precinct 1, Eynesbury; Glentara Estate, Drouin; Anglers Drive, Legends Hill; 45-125 Glasscocks Road, Lyndhurst; Ferrier & Stations Road, New Gisborne; Lots 2 & 3 Rix Road, Officer; Lot 2 and 45-61 Rix Road, Officer; Lot 1 Rix Road, Officer; Edenbrook Estate, Pakenham; 905 Taylors Road, Plumpton; Main Street, Romsey; Westbrook Estate, Tarneit; Wood Road, Truganina; 1-5 Yarra Street, Warrandyte; 245 Copelands Road, Warragul; 100 Craigieburn Road & 115 Boundary Road, Wollert; 80 Craigieburn Road, Wollert; 1185 Merriang Road, Woodstock; 145 Wollahra Rise, Wyndham Vale.

### Education Facilities
Overnewton College, Keilor; Technology Park, University of Ballarat, Mount Helen.

Daniel Juers
Archaeologist
03 9676 9009

## Qualifications
Bachelor of Archaeology – Honours

## Memberships
Heritage Advisor: Aboriginal Heritage Act 2006

## Training & Workshop Attendance
Construction Industry White (Red) Card; First Aid; 4wd
Asbestos Awareness Training

## Role Responsibilities
Heritage Advisor; Fieldwork Supervisor

## Career Summary
Dan has over 4 years consulting experience in Victoria. He has supervised fieldwork for subdivisions (industrial & residential), infrastructure projects (roads, pipelines & powerlines) and renewables (wind & solar). Dan also specialises in artefact analysis, professional level photography, database management and statistical analysis, and report writing.

## Select Relevant Experience

### Subdivisions
- 42-52 & 62-70 Manuka Road Berwick: CHMP complex assessment
- Minta Farm, Berwick: CHMP compliance archaeological salvage
- 75 Maygar Boulevard, Broadmeadows: CHMP standard and complex assessment
- Modeina Estate, Burnside: CHMP compliance archaeological salvage
- 136-146 and 148-200 Abey Road Cobblebank: CHMP complex assessment
- 620 Western Port Highway, Cranbourne West: CHMP compliance archaeological salvage
- Deanside Drive Estate, Deanside: CHMP complex assessment
- 915 Donnybrook Road, Donnybrook: CHMP complex assessment
- Kinbrook Estate, English Street, Donnybrook: CHMP complex assessment
- Lot 1, Rix Road, Officer: CHMP standard & complex assessment
- 250 Wedge Road, Sky: CHMP compliance archaeological salvage
- 2 Lot Industrial Subdivision, Patullos Lane, Somerton: CHMP complex assessment
- 605 Sunbury Road, Sunbury: CHMP complex assessment
- 100 Craigieburn Road & 115 Boundary Road, Wollert: CHMP complex assessment
- 80 Craigieburn Road, Wollert: CHMP complex assessment
- 955 Ballan Road, Wyndham Vale: CHMP complex assessment

### Renewables
- Brewster Wind Farm: CHMP complex assessment
- Mumblin Wind Farm: CHMP standard & complex assessment
- Watta Wella Wind Farm: CHMP standard & complex assessment

### Infrastructure
- Sub-transmission Line, Brimbank Park, Brimbank: cultural heritage permit fieldwork
- Coburg Prac, 2 Grassland Avenue, Coburg: CHMP complex assessment
- Wetlands, 950 Western Port Highway, Cranbourne West: CHMP standard & complex assessment & CHMP compliance archaeological salvage
- Tarralla Creek Naturalisation, Croydon
- Road Reconstruction Works on the Blackwood Park Road Crossing Over Monbulk Creek, Ferntree Gully
- Knox Regional Netball Centre, Ferntree Gully
- Parks Victoria Depot, Tidal River
- Carpark and Footbridge Construction, 1000 Steps, Upper Ferntree Gully
- Cement Creek East Warburton Vegetation Improvement: CHMP standard & complex assessment

### Miscellaneous
- Kingston Residential Aged Care Development, 400 Warrigal Road, Heatherton: CHMP complex assessment
- Lang Lang Sand Quarry, 650 McDonalds Track, Lang Lang: CHMP complex assessment
- Hotel Motel Development, Westmeadows