Heytesbury Underground Gas Storage (HUGS) Pipeline

Attachment K – Part 1

Cultural Heritage Management Plan 18865

Heytesbury Underground Gas Storage (HUGS) Project

CHMP No. 18865

10 November 23

Sponsor: Lochard Energy (Iona Operations) Pty Ltd

Heritage Advisor: Albert Francis

Authors: Alyssa Gilchrist, Albert Francis & Krista Whitewood

ochreimprints

Cover Photograph: activity area facing north

ochre imprints pty ltd

ABN 95 161 235 589
ACN 161 235 589

105 Queens Parade
Clifton Hill VIC 3068

PO Box 280
Clifton Hill VIC 3068

phone: (03) 9417 6094
fax: (03) 9417 6095

Eastern Maar
Aboriginal Corporation

PO Box 546
Warrnambool VIC 3280

21.11.23

CULTURAL HERITAGE MANAGEMENT PLAN – NOTICE OF APPROVAL

The Eastern Maar Aboriginal Corporation, trading as Eastern Maar Aboriginal Corporation RNTBC, acting as the Registered Aboriginal Party, herby approve the Cultural Heritage Management Plan as referred to below:

CHMP Name:	Heytesbury Underground Gas Storage (HUGS) Project		
CHMP Number:	18865		
Sponsor:	Lochard Energy (Iona Operations) Pty Ltd	ABN:	67 608 441 729
Heritage Advisor (s):	Albert Francis		
Author(s):	Alyssa Gilchrist, Albert Francis, and Krista Whitewood		
Cover Date:	10/11/23	Pages:	i-x; 181

Eastern Maar Aboriginal Corporation is satisfied that the CHMP has been prepared in accordance with the standards prescribed for the purposes of Section 53 of the *Aboriginal Heritage Act 2006*, and the CHMP adequately addresses the matters set out in Section 61.

Pursuant to Section 64 [1] of the *Aboriginal Heritage Act 2006* this Cultural Heritage Management Plan takes effect upon the granting of this approval and once a copy is lodged with the Secretary*.

Yours Sincerely,

Marcus Clarke
CEO Eastern Maar Aboriginal Corporation RNTBC

*This notice of approval should be inserted after the title page and bound with the body of the cultural heritage management plan.

Eastern Maar
Aboriginal Corporation

PO Box 546
Warrnambool VIC 3280

HEYTESBURY UNDERGROUND GAS STORAGE (HUGS) PROJECT

Cultural Heritage Management Plan Number: 18865

Sponsor: Lochard Energy (Iona Operations) Pty Ltd (ABN: 67 608 441 729)

Heritage Advisor: Albert Francis

Author: Alyssa Gilchrist, Albert Francis, and Krista Whitewood

Issue Date: 10/11/23

Assessment: Complex (in accordance with r. 74 of the Aboriginal Heritage Regulations 2018)

Size of Activity Area: Large (in accordance with r. 81 of the Aboriginal Heritage Regulations 2018)

Registered Aboriginal Places: VAHR 7420-0032 & VAHR 7420-0063

Copies Issued To: Eastern Maar Aboriginal Corporation

First Peoples – State Relations

Lochard Energy (Iona Operations) Pty Ltd

Quality Control: Petra Schell

EXECUTIVE SUMMARY

Compliance requirements are set out in Part 1 of the Cultural Heritage Management Plan

Background

This Cultural Heritage Management Plan (CHMP) has been prepared in advance of ground disturbing works associated with the Heytesbury Underground Gas Storage (HUGS) Project which includes, the installation of a gas pipeline from East and West Road, Timboon West, to Gas Works Road, Paaratte, and the construction of a wellsite at Timboon West called the MFCT wellsite. The CHMP was commissioned by the Sponsor, Lochard Energy (Iona Operations) Pty Ltd.

This mandatory CHMP was prepared in accordance with the requirements of the *Aboriginal Heritage Act* 2006. The CHMP will be evaluated by Eastern Maar Aboriginal Corporation (EMAC), the Registered Aboriginal Party (RAP) for the activity area. No Activity Advisory Group (AAG) was appointed by the Secretary in relation to the CHMP.

Activity Area Location and Description

The activity area consists of a mostly linear alignment approximately 5.3 km in length, running between East and West Road, Timboon West, to Gas Works Road, Paaratte, Victoria. The activity area corridor extends across areas of farming land and is mainly characterised by grassed paddocks. A small number of roads cross through the activity area. The activity area is characterised by undulating land dissected by tributaries of Skull Creek.

Assessment Type & Results

This CHMP was undertaken by way of Desktop, Standard and Complex Assessments. The Desktop Assessment established that one previously recorded Aboriginal place is present within the activity area (VAHR 7420-0031). VAHR 7420-0031 is a single marine chert stone artefact that has previously been exposed by pipeline construction and collected. This Aboriginal place was subsequently permitted harm by CHMP 13060 which was prepared ahead of a gas pipeline. A review of the VAHR found that 26 previously registered Aboriginal places occur within the geographic region, with seven places (five artefact scatters and two LDADs) located within 200 m of the activity area. It was considered reasonably possible that as-yet unrecorded Aboriginal cultural heritage could be present in the activity area.

The Standard Assessment assessed the entire activity area, and no surface cultural heritage material was identified. This result was attributed to poor ground surface visibility (less than 1%) across the entire activity area during the survey. The location of VAHR 7420-0031 was inspected during the Standard Assessment however no Aboriginal cultural material associated with this Aboriginal place was able to be relocated.

A total of 3 (1 x 1 m) EPs, 38 (0.5 x 0.5 m) STPs, and 9 (0.5 x 0.5 m) radial STPs were excavated during the Complex Assessment. A total of 3 stone artefacts were identified from one EP and one radial STP, at depths between 0-100mm. The stone artefacts were identified (sloping land), approximately 30m east of Leech Creek.

Aboriginal cultural heritage in the activity area

Two Aboriginal places occur in the activity area: VAHR 7420-0031, a previously registered artefact scatter and an LDAD, VAHR 7420-0063, which comprises three subsurface stone artefacts identified during the fieldwork undertaken to inform this CHMP.

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ABBREVIATIONS / ACRONYMS

AAG – Activity Advisory Group

AHO – Aboriginal Heritage Officer

ASTT – Australian Small Tool Tradition

FPSR – First Peoples – State Relations

BP – Before Present (i.e. 1950)

CHMP - Cultural Heritage Management Plan

CHP – Cultural Heritage Permit

CROW – Construction Right of Way

DN – Nominal Diameter

DPC – Department of Premier and Cabinet

EES – Environment Effects Statement

EMAC – Eastern Maar Aboriginal Corporation

HA – Heritage Advisor

LDAD – Low Density Artefact Distribution

m asl – metres above sea level

MEG – Mono-ethylene Glycol

NOI – Notice of Intent to Prepare a CHMP

OHS – Occupational Health & Safety

OI – Ochre Imprints

RAP – Registered Aboriginal Party

VAHR – Victorian Aboriginal Heritage Register

PART 1 – CULTURAL HERITAGE MANAGEMENT CONDITIONS

These conditions become compliance requirements once the Cultural Heritage Management Plan is approved. Failure to comply with a condition is an offence under section 67A of the Aboriginal Heritage Act 2006.

The Cultural Heritage Management Plan must be readily accessible to the sponsor and their employees and contractors when carrying out the activity.

1.1. General Management Conditions

The following management conditions have been agreed to by the Sponsor, in consultation with Eastern Maar Aboriginal Corporation (EMAC) to manage cultural heritage within the activity area. The Sponsor of this Cultural Heritage Management Plan (CHMP) is responsible for undertaking all management conditions and contingencies as outlined below.

The Sponsor is responsible for ensuring that the activity undertaken as part of this CHMP, adheres to the activity description outlined in Section 2. The Sponsor is responsible for ensuring that no works as part of the activity as outlined in Section 2 are completed outside of the activity area as shown in Figure 6. Any changes to the activity area, the activity description or the approved management conditions will require an amendment to the CHMP or the preparation of a new CHMP.

1.1.1. General Condition 1: Cultural Heritage Induction - Prior to the Activity

Prior to the commencement of the activity, a cultural heritage induction must be facilitated by a representative of EMAC and assisted by a Heritage Advisor. EMAC must be provided with at least two (2) weeks' notice of the intended date of the cultural heritage induction. A booking form must be completed to book a cultural heritage induction, which can be found on the EMAC website www.easternmaar.com.au. This induction will be organised and paid for by the Sponsor.

Prior to the commencement of the activity (or any works associated with the activity) a cultural heritage induction must be undertaken by all personnel involved in the activity (in particular ground disturbing works), including staff/supervisors working permanently within the activity area, and the Sponsor. An inducted Sponsor or supervisor may subsequently provide an in-house induction for additional contractors and staff after the initial induction. The induction of staff and supervisors working permanently in the activity area will be conducted by a representative of the Eastern Maar Aboriginal Corporation (EMAC) and a Heritage Advisor. The induction will take place on site within the activity area, or alternatively at a location specified by the Sponsor in agreement with EMAC.

A cultural heritage induction booklet will be produced by the Heritage Advisor and contain all relevant CHMP information, including a summary of the key conditions and contingencies outlined in Part 1 of the CHMP. The cultural heritage induction booklet must be kept with a hard copy of the CHMP as General Condition 3 and be used during the initial phase of any works associated with the activity.

The Heritage Advisor will keep a record of induction attendees (e.g., a sign-off sheet) and any induction materials, a copy of which will be made available to EMAC via email, up to no more than two (2) business days after the induction is held.

The induction will include:

- brief background of the Aboriginal occupation of the activity area and broader region;
- summary of the assessments conducted during the CHMP;
- specific details of all Aboriginal places located during the CHMP;
- explanation of the conditions and contingency plans contained within the CHMP; and
- the obligations of the Sponsor and all personnel under the *Aboriginal Heritage Act* 2006 (Vic).

An important focus of the cultural heritage induction is to present personnel with examples of Aboriginal cultural heritage that may occur in the activity area, and to explain the contingency procedures required by the CHMP, should unidentified Aboriginal cultural heritage be found during the conduct of the activity.

1.1.2. General Condition 2: Notification to EMAC of Commencement/Completion of the Activity - Prior to the Activity/After the Activity

The Sponsor must notify EMAC, via telephone call or email, at least ten (10) business days prior to the proposed start date of when the activity is expected to commence. The Sponsor must notify EMAC, via telephone call or email, up to no more than ten (10) business days after the activity has been completed.

EMAC is to ensure that there is an electronic means of confirmation of notification. Confirmation of telephone notification is to be confirmed by email within one (1) business day of the telephone call.

During business hours the contact details for EMAC are as follows:

RAP Cultural Heritage Manager

Eastern Maar Aboriginal Corporation

Phone: 0452 350 728

Email: culturalheritage@easternmaar.com.au

1.1.3. General Condition 3: A Copy of the Approved CHMP to be Retained Onsite – Throughout Duration of the Activity

A hard copy of the approved CHMP must always be available and present onsite for the duration of the activity. The CHMP must be readily available to those undertaking the activity and the hard copy of the CHMP must be able to be provided upon request. The Sponsor is responsible for ensuring that all personnel undertaking the activity are aware of the onsite location of the hard copy of the CHMP.

1.1.4. General Condition 4: Protocols for Managing and Handling Sensitive Information Relating to Aboriginal Cultural Heritage within the Activity Area. – Throughout Duration of the Activity

This CHMP is to be used for the purpose of managing cultural heritage (Section 46 of the *Aboriginal Heritage Act 2006*) within the activity area defined in this CHMP and is not to be used by the Sponsor, Contractors, or Heritage Advisor for any other purpose.

EMAC reserves the right to have ownership, access, and control of the use of their Aboriginal cultural heritage, Traditional Knowledge, and Traditional Cultural Expressions within this CHMP– including but not limited to artefact descriptions and photos, locations of cultural heritage, oral histories and statements provided, tangible and intangible cultural heritage knowledge and information.

- There shall be no communication, public release, or publishing of information within the CHMP, without the written permission of EMAC - including for academic and commercial use.
- There shall be no communication, public release, or publishing of information concerning Aboriginal cultural heritage, without the written permission of EMAC – including academic and commercial use.
- No onsite photographs or information concerning Aboriginal cultural heritage, by a Sponsor, Contractor, or Heritage Advisor, is to be circulated to the media or via social media without the written permission of EMAC – including academic and commercial use.

1.1.5. General Condition 5: Compliance Inspections – Throughout Duration of the Activity

An estimated seven Compliance Inspections must be completed by an Eastern Maar Aboriginal Corporation representative over the duration of the activity to review the progress of the activity,

to determine if any unexpected cultural heritage has been uncovered in the works area/s and check that each applicable condition and contingency contained within the approved CHMP is in effect.

Lochard must make access available for EMAC for the compliance inspections which are to occur in the following areas:

- One inspection during topsoil stripping works at the MCFT well site. All excavated spoil must be retained within the activity area for inspection (see Figure 2);
- One inspection following the topsoil removal within the workspace area for pipeline construction. All excavated soil must also be retained for inspection (it is estimated that this will include 5 inspections);
- One inspection during open trenching works at Leech Creek, to the south of VAHR 7420-0063 for a distance of 70m spanning both sides of Leech Creek where open trenching works will occur. All excavated spoil from trenching must be retained within the activity area for inspection (see Figure 1).

The requirement for additional inspections (up to the maximum of nine for the activity), must be determined in consultation with the Eastern Maar Aboriginal Corporation unit after completion of the first inspection.

An Eastern Maar representative must conduct the inspections. If the inspections reveal suspected non-compliance with the approved CHMP, then the procedure outlined in Contingency 3 must be initiated. If suspected Aboriginal cultural heritage is identified during the inspections, then the procedure outlined in Contingency 4 or 5 must be initiated accordingly. If the inspection reveals a suspected breach of the Victorian Aboriginal Heritage Act 2006 then this must be reported to First Peoples State Relations (FPSR) immediately and an Authorised Officer or Aboriginal Heritage Officer may be called out and/or a Stop Order may be issued by FPSR.

Lochard must provide Eastern Maar Aboriginal Corporation with the schedule of inspections at least four (4) weeks before the first inspection is scheduled for the relevant activity (wellsite or pipeline construction). Lochard will provide an updated schedules to EMAC during the course of the activity if the timing for inspections changes.

The procedures outlined in this condition must be organised and paid for by the Sponsor.

1.1.6. General Condition 6: Activity to occur within the Activity Area – Throughout Duration of the Activity

All works associated with the activity must be conducted within the area delineated within this approved CHMP activity area (see Figure 6).

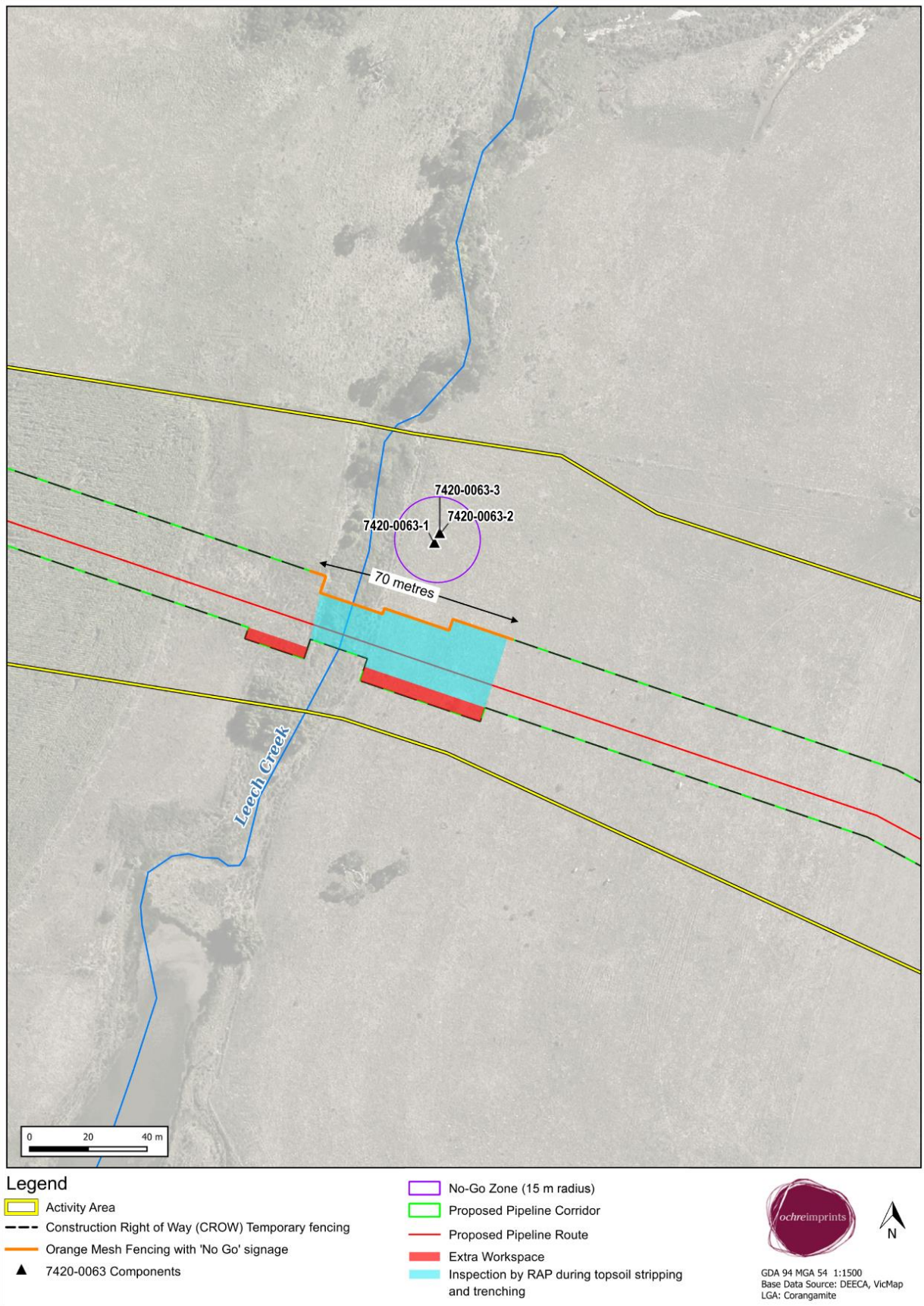


Figure 1: Location of inspection during open trenching works at Leech Creek.

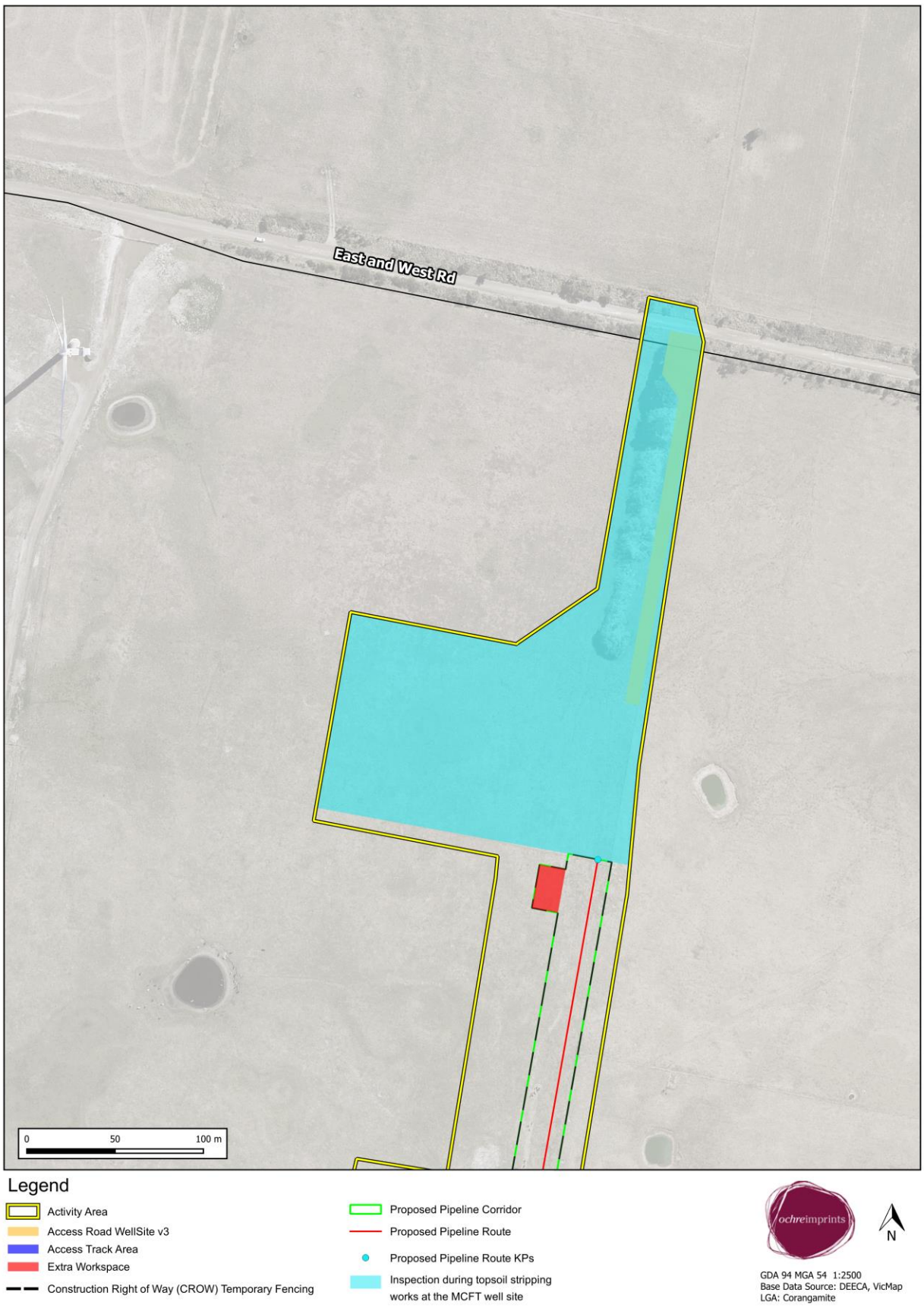


Figure 2: Location of inspection during topsoil stripping works at MCFT well site.

1.1.7. General Condition 7: Management of VAHR 7420-0063

To be completed before the activity

1. Prior to the commencement of the gas pipeline construction works, temporary fencing (farm type fencing comprising of posts and wires) will be installed along both sides of the pipeline CROW to establish a definitive works area from the surrounding farmland. A buffer of at least 15m to the south of VAHR 7420-0063 must be established by this CROW fencing. No ground disturbing works are permitted outside of the CROW/works area temporary fencing within 15m of VAHR 7420-0063 or any other registered cultural heritage site or outside of the Project Activity Area;
2. One additional line of temporary fencing; in the form of orange barrier mesh (Figure 3), must be installed inside the farm fencing as per Figure 5 on the northern side of the works area near VAHR 7420-0063 to demarcate the location;
3. The minimum extent of required temporary fencing south of VAHR 7420-0063 is shown in Figure 5, however a wider buffer to the south of this Aboriginal place is acceptable.
4. No go signage must be clearly displayed at this location, on the temporary fencing similar to that included in Figure 4;
5. No machine/vehicle ground disturbing works can take place within 15m of VAHR 7420-0063, except for normal ground maintenance (i.e., Grass grazing by cattle, re-seeding, fertilising, etc) by the landowner and/or occupier.

Figure 3: Type of fencing to be installed inside CROW fencing near VAHR 7420-0063.

Figure 4: Indicative type of signage to be installed inside CROW fencing near VAHR 7420-0063.

To be completed during activity

6. The condition of the fencing must remain fit for purpose and repaired as required.

The fencing may be removed after completion of the activity.

The area that this applies to is shown in Figure 1 and Figure 5.

1.1.8. General Condition 8: Management of VAHR 7420-0032

VAHR 7822-0032 has previously been subject to surface artefact collection. This place will not be impacted by the proposed CHMP 18865 works and there are no specific management requirements that apply to this Aboriginal place either prior, during or after the activity has been completed.

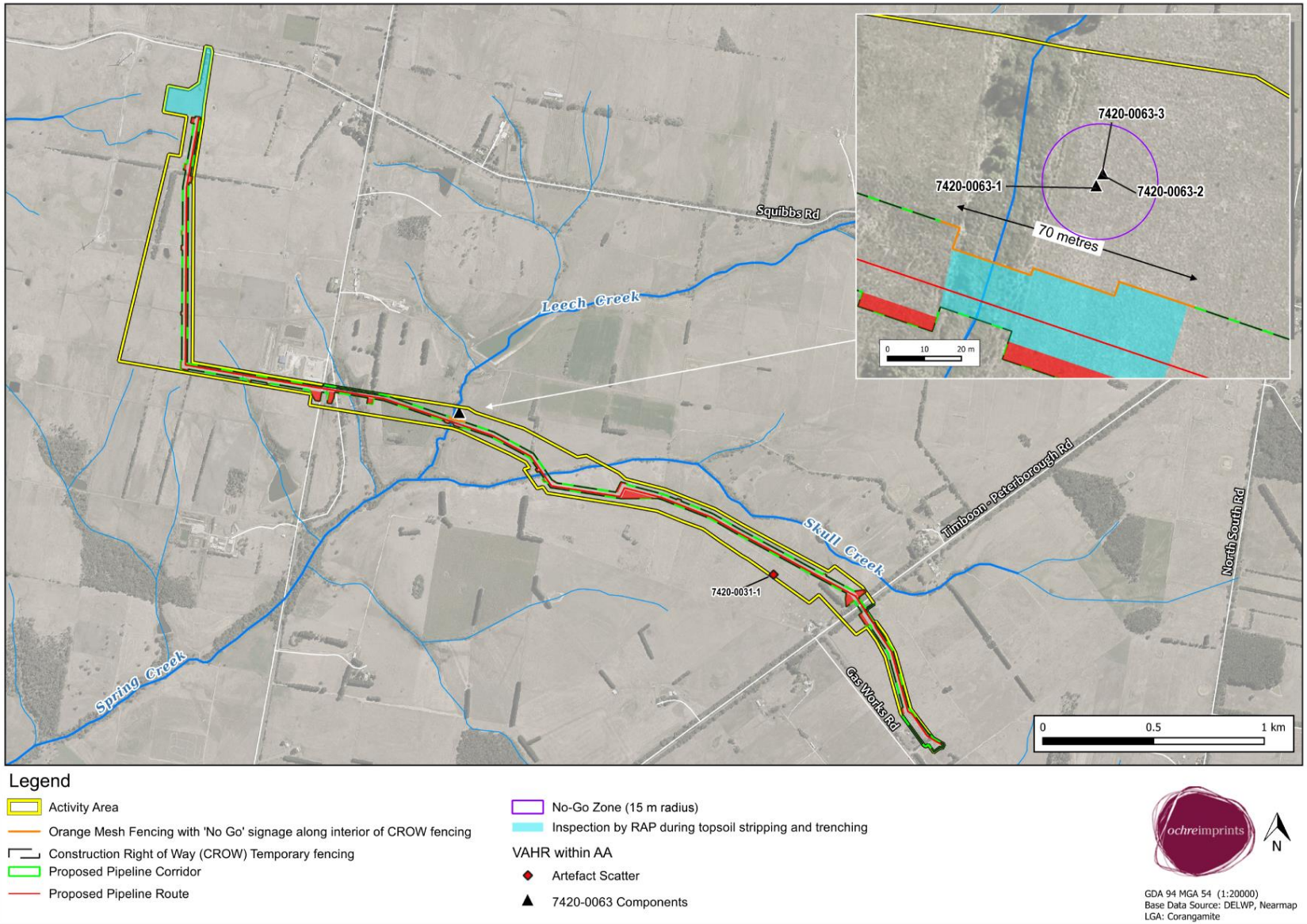


Figure 5: Location of temporary fencing for the buffer zone south of VAHR 7420-0063.

1.1.9. General Condition 9: Repatriation of VAHR 7420-0063 - Prior to the Activity/After the Activity

The repatriation of the cultural material associated with VAHR 7420-0063 is to occur in two phases:

1. Prior to the activity: The Aboriginal Cultural Heritage identified and removed during the preparation of the CHMP must be delivered to Eastern Maar Aboriginal Corporation within thirty (30) days of the CHMP approval:

- The Heritage Advisor must fully document, package, and securely store all recovered cultural material until the repatriation.
- The Heritage Advisor must submit all relevant documentation to the RAP and to VAHR.

2. After the activity: Within six (6) months after the completion of the activity the Heritage Advisor or the Sponsor must contact EMAC to arrange the burial of all cultural material recovered within the activity area:

- EMAC will be responsible for choosing the reburial location, which will ideally be within the activity area, in a space not to be disturbed or impacted by the activity. If the location is not appropriate, EMAC may choose an alternate location for the reburial.
- The reburial must be attended by EMAC representative(s) and a Heritage Advisor, who is responsible for organising the excavation at the required reburial location; and
- Once reburied, the reburial location must be recorded to sub-metre accuracy by the Heritage Advisor.
- The relevant VAHR site record card must be updated and an 'object collection' component form must be completed by the Heritage Advisor and lodged with FPSR.

The procedures outlined in this condition must be organised and paid for by the Sponsor.

1.2. Contingency Plans and other Matters

This section of the assessment contains contingency plans to facilitate appropriate heritage management during the proposed activity and to fulfil the requirements set out in Schedule 2 Clause 13 of the Aboriginal Heritage Regulations 2018.

At the time of approval of this CHMP, the Registered Aboriginal Party (RAP) for the activity area was the Eastern Maar Aboriginal Corporation (EMAC). All references to 'the RAP' throughout this section of the CHMP are references to the EMAC.

1.2.1. Contingency 1: Matters Referred to in Section 61 of the Act

This CHMP contains contingency plans that are specific to the activity and activity area as described within Section 2 (activity area) of this CHMP. If changes are made to the activity

and/or activity area that require statutory authorisation, or which require changes to the management conditions, following the approval of the CHMP, the Sponsor will likely be required to undertake and submit a new CHMP or apply to amend the approved CHMP.

If Aboriginal cultural heritage is unexpectedly discovered during the activity, the following contingencies (which consider matters referred to in Section 61 of the *Aboriginal Heritage Act 2006* with regard to harm avoidance and minimisation) must be implemented by the Sponsor or the relevant delegate.

1.2.2. Contingency 2: Dispute Resolution

Clause 13 (1) Schedule 2 of the regulations requires that a CHMP must contain a contingency plan for the resolution of any disputes between the Sponsor and RAP or relevant Traditional Owner representatives, in relation to the implementation of an approved CHMP or the conduct of the activity. Disputes may occur at various stages during the activity. Procedures for dispute resolution aim to ensure that all parties are fully aware of their rights and obligations, that full and open communication between parties occurs, and that those parties conduct themselves in good faith.

If a dispute arises that may affect the conduct of the activity, resolution between parties using the following informal dispute resolution guidelines is recommended.

Informal Dispute Guidelines

a) The party raising the dispute will complete a Notice of Dispute Form (included below) and email a copy to all parties listed in the Notification contingency in this CHMP.
b) All disputes will be jointly investigated and documented by both parties (RAP and Sponsor).
c) Authorised representatives of each party (RAP and Sponsor) will attempt to negotiate a resolution to any dispute related to cultural heritage management of the activity area, within two (2) business days of written notice being received.
d) Where a breach of the CHMP conditions has been identified, authorised representatives of both parties (RAP and Sponsor) must endeavour to agree upon the best method of correction or remediation.
e) If the authorised representatives of both parties (RAP and Sponsor) cannot reach an agreement, then the authorised representatives of both parties (RAP and Sponsor) will negotiate a resolution to an agreed schedule.
f) If the authorised representatives of both parties (RAP and Sponsor) fail to reach an agreement, an independent mediator should be initially sought to assist in resolving the

dispute. Both parties (RAP and Sponsor) must agree upon a timeframe for the independent mediator.

g) If an independent mediator cannot be agreed on or fails to resolve the dispute with the allowed timeframe, the Victorian Aboriginal Heritage Council may be approached for their willingness to act in resolving the dispute.
h) If it is deemed that a cultural heritage audit is required, the Heritage Advisor will contact the Secretary of the process. A cultural heritage audit may also be ordered by the Minister under the *Aboriginal Heritage Act 2006.*

Regardless of the category of dispute, the informal dispute guidelines do not preclude:

a) The parties seeking advice from First Peoples - State Relations to assist in resolution of the dispute; and
b) Any legal recourse that is open to the parties (RAP and Sponsor) being undertaken, however, the parties must agree that the above resolution mechanism will be implemented before such recourse is made.

1.2.3. Contingency 3: Reviewing Compliance with the CHMP

Under the *Aboriginal Heritage Act 2006*, the conditions and contingency plans outlined within this approved CHMP must be complied with as written. Breaching the conditions and contingency plans contained within the approved CHMP is an offence under s.67A of the *Aboriginal Heritage Act 2006* and penalties apply.

To ensure compliance with the conditions and contingency plans outlined within this approved CHMP, the Sponsor should review the following checklist both prior to and throughout the course of the activity. Any negative responses to the following questions in the checklist may indicate that the conditions and contingency plans of the approved CHMP have been breached and remedial actions for non-compliance should be considered.

The RAP or relevant Traditional Owner representatives may undertake heritage inspections to monitor the progress of the activity and observe whether management conditions and contingency plans outlined within this CHMP have been complied with. A total of three (3) heritage inspections may be undertaken during the activity. The RAP or relevant Traditional Owner representatives must provide the Sponsor with at least three (3) business days' notice prior to the time they wish to enter the activity area. The Sponsor must ensure that the RAP or relevant Traditional Owner representatives are aware of any job safety restrictions or protocols. The RAP or relevant Traditional Owner representatives must comply with any job safety protocols required by the Sponsor and their contractors (if relevant).

1.2.4. Remedying Non-Compliance within the CHMP.

The Sponsor is responsible for remedying non-compliance with the conditions and contingency plans outlined within this approved CHMP. A non-compliance may trigger the requirement for a cultural heritage audit under Part 6 of the *Aboriginal Heritage Act 2006.* All reasonable costs arising from the meeting and any agreed remedies must be borne by the Sponsor.

If non-compliance is identified the Sponsor must:

- Cease all works within the activity area.
- Notify the RAP or Traditional Owner representatives and notify First-Peoples State Relations at compliance.aboriginalvictoria@dpc.vic.gov.au
- Follow the contingency plans within this CHMP for discovery of Aboriginal Cultural Heritage during the activity.
- Prepare a programme of remedial action in consultation with the RAP or Traditional Owner representatives and a Heritage Advisor.

Notice of Dispute

Notice issued to:

Notice issued by:

RAP:

Sponsor of CHMP:

Under contingency _____of this CHMP, I/we give notice of the following dispute.

Description of the Dispute.

[Describe the dispute as you see it.]

Impact of the Dispute.

[Describe how the dispute has affected you.]

Proposed Solution as per Dispute Resolution Contingency.

To resolve this dispute [*Describe what actions you will take to resolve the dispute*]

Who to Contact About This Notice.

Name:

Phone:

Email:

Postal Address:

Signed by:

(As the authorised representative for the party issuing this notice)

Signature:

Date:

Compliance Checklist

Question	Yes *[Date Completed]*	No *[Remedy/ Comments]*
Prior to the commencement of the activity		
Has the CHMP been approved?		
Has a Cultural Heritage Induction been completed?		
Has the RAP been notified of the commencement of the activity?		
Have the specific management conditions outlined in this CHMP, which are required to take place prior to the commencement of the activity been undertaken?		
During the course of the activity		
Have the specific management conditions outlined in this CHMP, which are required to take place during the course of the activity been undertaken?		
After the activity has been completed		
Has the RAP been notified of the completion of the activity?		
Have the specific management conditions outlined in this CHMP, which are required to take place after the activity has been completed been undertaken?		
Changes to the activity or activity area		
If required, has the approved CHMP been amended and approved?		

If required, and if the approved CHMP has not been amended and approved, has a new CHMP been prepared and approved?		
Have all relevant statutory approvals been obtained?		
If Aboriginal Cultural Heritage is discovered during the activity		
As per the contingency:		
Has the activity ceased within at least 10 metres of the discovery, and a stop works buffer implemented?		
Has the stop works buffer been fenced off?		
Has the site manager and/or Sponsor, RAP or Traditional Owner representatives and a HA been notified?		
Has HA been engaged within three business days of notification?		
Has the HA fully recorded and documented the Aboriginal cultural heritage?		
Has the Sponsor made all reasonable attempts to avoid or minimise harm to the Aboriginal cultural heritage?		
If harm to the Aboriginal cultural heritage cannot be avoided or minimised, has an appropriate archaeological salvage been undertaken?		
Has a report detailing the results of the salvage been submitted to VAHR and the RAP or Traditional Owner representatives within six months?		
Have the removal, custody, curation, and management of the Aboriginal cultural heritage been undertaken in accordance with the relevant contingency plan?		

Have the Sponsor, Heritage Advisor and relevant RAP or Traditional Owner representatives have agreed that no further action is warranted?		
If Aboriginal Ancestral Remains are discovered during the activity		
As per the contingency:		
Has the activity within at least 30 metres ceased of the discovery?		
Have the human remains been left in place and protected from harm?		
Have the State Coroner's Office and the Victorian Police been notified?		
If the human remains are confirmed to be Aboriginal Ancestral remains, has the VAHC and RAP been notified?		
Has the appropriate impact mitigation or salvage strategy been implemented?		
Have the Aboriginal Ancestral remains been treated in accordance with the directions of the VAHC?		
Has a suitably qualified and experienced archaeologist fully documented and clearly marked the reburial site(s) and provided all details to VAHR?		
Has this been done in consultation with the RAP?		
Have appropriate management measures been implemented to ensure that the remains are not disturbed in the future?		

1.3. Contingencies in Relation to the Discovery of Aboriginal Cultural Heritage During the Activity

1.3.1. Contingency 4: Unexpected Discovery of Aboriginal Cultural Heritage (Excluding Human Remains)

As per Section 4 of the *Aboriginal Heritage Act 2006* a secret or sacred object includes an Aboriginal object directly associated with a traditional Aboriginal burial

i. Any suspected Secret / Sacred Objects must be reported to the Victorian Aboriginal Heritage Council, as per Part 2, Division 3 (Sections 21-2) of the *Aboriginal Heritage Act 2006*.
ii. All works must stop within at least 10 metres of the objects
iii. The Victorian Aboriginal Heritage Council will transfer the object/s to an Aboriginal person that the Victorian Aboriginal Heritage Council is satisfied is entitled to and willing to take possession, custody, or control of the object/s, or otherwise deals with the object/s as the Victorian Aboriginal Heritage Council thinks appropriate, as per section 21B of the *Aboriginal Heritage Act 2006.*

Aboriginal Cultural Heritage

If suspected Aboriginal cultural heritage (excluding Aboriginal Ancestral Remains) is uncovered or identified during the activity, the following contingency plan must be followed:

Discovery

i. The activity must cease within at least 10 metres of the suspected Aboriginal cultural heritage, and a stop works buffer must be implemented. Works may continue in the remainder of the activity area.
ii. The stop works area around the suspected Aboriginal cultural heritage must be fenced off using appropriate temporary fencing (chain wire fence panels with concrete base feet) to protect the suspected Aboriginal cultural heritage from further disturbance. No-go zone signage must be attached to the fencing and be clearly visible.
iii. The suspected Aboriginal cultural heritage must not be picked up or removed from the stop works area.

Notification

i. The individual who uncovered or identified the suspected Aboriginal cultural heritage must notify the site manager and/or Sponsor of the discovery immediately.

ii. The Sponsor must notify the relevant RAP or Traditional Owner representatives and a Heritage Advisor within one business day of the discovery of the suspected Aboriginal cultural heritage.

Assessment

i. An appropriately qualified Heritage Advisor must be engaged to inspect the suspected Aboriginal cultural heritage within three business days of notification. Relevant RAP or Traditional Owner representatives must be provided the opportunity to participate in the inspection.

ii. The Heritage Advisor will consult with the relevant RAP or Traditional Owner representatives regarding the management, collecting and recording of the cultural material. The Heritage Advisor will notify the Secretary of the discovery and any agreements;

iii. If the suspected Aboriginal cultural heritage is assessed by the Heritage Advisor to be Aboriginal cultural heritage, then the Heritage Advisor must fully record and document the Aboriginal cultural heritage, and the following site protection, impact mitigations or salvage conditions must be completed.

iv. If the suspected Aboriginal cultural heritage is determined not to be Aboriginal cultural heritage by the Heritage Advisor and the relevant RAP or Traditional Owner representatives, works may recommence;

Impact Mitigation or Salvage

i. It is the obligation of the Sponsor to ensure that all reasonable attempts to avoid or minimise harm to the Aboriginal cultural heritage have been undertaken, in consultation with the RAP or Traditional Owner representatives.

ii. If the Aboriginal cultural heritage is determined to be significant (for example, an intact cultural deposit), site protection or impact mitigation conditions may be required. If site protection or impact mitigation measures are not possible a salvage excavation of part or all of the Aboriginal place may be required prior to the activity proceeding.

iii. In the situation where a salvage excavation is required the following process must be adhered to:

   a) The extent and methodology of the salvage program will be determined by the RAP or relevant Traditional Owner representatives, in consultation with the Heritage Advisor and Sponsor.

   b) Any salvage program must be undertaken in accordance with First Peoples - State Relations' Practice Note: Salvage Excavations, by a suitably qualified archaeologist/Heritage Advisor with assistance from the RAP or relevant Traditional Owner representatives.

c) The Heritage Advisor must update or complete the relevant Victorian Aboriginal Heritage Register (VAHR) place and component forms, including the object collection form, and submit the documentation to the VAHR within seven (7) business days of the assessment. The Heritage Advisor must notify the RAP or relevant Traditional Owner representatives, via email, once the VAHR has been updated.

d) An archaeological report meeting the Secretary standards and detailing the methods, analysis and results of the salvage program must be submitted to the VAHR, the Sponsor and the RAP or relevant Traditional Owner representatives no later than six (6) months after the salvage excavation has been completed.

e) At the completion of analysis, any Aboriginal cultural heritage collected during the salvage program must be managed as outlined in the removal, custody, curation, and management of Aboriginal Cultural Heritage contingency in this CHMP.

Recommencement of the activity

i. The activity may recommence in the stop works area once:

a) The Aboriginal cultural heritage material has been identified, fully documented, and assessed, including the collection and analysis of any artefacts by a Heritage Advisor.

b) All reasonable attempts to avoid harm and appropriately protect the Aboriginal cultural heritage has been made by the Sponsor in consultation with the RAP or relevant Traditional Owner representatives.

c) If harm to the Aboriginal cultural heritage cannot be avoided, then an appropriate archaeological salvage program, meeting the minimum standards as outlined above, has taken place.

d) The Sponsor, Heritage Advisor and the RAP or relevant Traditional Owner representatives have agreed that no further action is warranted.

e) The Heritage Advisor has updated or completed VAHR place and component form(s), submitted the forms to the VAHR within fourteen (14) business days of the assessment, and the forms have been approved.

Dispute Resolution

If all parties fail to reach an agreement under this contingency plan, this will be classified as a dispute. Any dispute that may arise from this process must be dealt with under the Dispute Resolution contingency as outlined in this CHMP.

1.3.2. Contingency 5: Unexpected Discovery of Human and Aboriginal Ancestral Remains

If suspected human remains are discovered, you must contact the Victoria Police and the State Coroner's Office immediately. If there are reasonable grounds to believe that the remains are Aboriginal Ancestral Remains, the Coronial Admissions and Enquiries hotline must be contacted on 1300 888 544.

Any such discovery at the activity area must follow these steps.

Discovery

a) If suspected human remains are discovered, all activity within at least 30 metres must cease immediately.
b) The remains must be left in place and protected from harm or damage.
c) Do not contact the media; do not take any photographs of the remains other than those requested by the relevant authorities below.

Notification

a) If suspected human remains have been found, the State Coroner's Office (**1300 309 519)** and the Victoria Police **(000)** must be notified immediately.
b) If there are reasonable grounds to believe the remains are Aboriginal Ancestral Remains, the Coronial Admissions and Enquiries hotline must be immediately notified on **1300 888 544.**
c) If the human remains are confirmed by State Coroner's Office to be Aboriginal Ancestral Remains, the person responsible for the activity must report the existence of them to the Victorian Aboriginal Heritage Council in accordance with section 17 of the *Aboriginal Heritage Act 200*6 (https://www.aboriginalheritagecouncil.vic.gov.au/report-ancestral-remains-submit).
d) If the remains are confirmed to be Aboriginal Ancestral Remains, the RAP or relevant Traditional Owner representatives must be notified immediately as listed in the Notification contingency in this CHMP.
e) All details of the location and nature of the human remains must be provided to the relevant authorities.

Impact Mitigation or Salvage

a) The Victorian Aboriginal Heritage Council, after taking reasonable steps to consult the RAP or relevant Traditional Owner representatives, will determine the appropriate course of action as required by section 18(2)(b) of the *Aboriginal Heritage Act 2006*
b) An appropriate impact mitigation or salvage strategy as determined by the Victorian Aboriginal Heritage Council must be implemented by the Sponsor. All costs associated with this will be the responsibility of the Sponsor.

Curation and Further Analysis

a) The treatment of salvaged Aboriginal Ancestral Remains must be in accordance with the direction of the Victorian Aboriginal Heritage Council.

Reburial

a) Reburial to occur in consultation with the relevant RAP or relevant Traditional Owner representatives.
b) Any reburial site(s) must be fully documented by an experienced and qualified archaeologist and all relevant details provided to VAHR.
c) Appropriate management measures must be implemented to ensure the Aboriginal Ancestral Remains are not disturbed in the future.

1.3.3. Contingency 6: Removal, Custody, Curation, and Management of Aboriginal Cultural Heritage

This contingency relates to the removal, custody, curation, and management of unexpected Aboriginal cultural heritage (excluding Human and Aboriginal Ancestral Remains) discovered during the activity. For management of known Aboriginal cultural heritage see the relevant condition as outlined within this approved CHMP.

Removal

No Aboriginal cultural heritage must be picked up or removed from the activity area, except by a Heritage Advisor during salvage.

Custody

Aboriginal cultural heritage collected during the salvage program can be temporarily stored by the Heritage Advisor until the scientific analysis has been completed. Once the salvage and scientific analysis of the Aboriginal cultural heritage has been completed, the Aboriginal cultural heritage must be repatriated to the RAP (no later than six (6) months after the salvage excavation has been completed).

The custody of Aboriginal cultural heritage (excluding Aboriginal Ancestral Remains, or Secret or Sacred Objects) discovered during or after an activity must comply with the requirements of the *Aboriginal Heritage Act 2006* and be assigned according to the following order of priority, as appropriate:

a) any relevant Registered Aboriginal Party for the land from which the Aboriginal cultural heritage is salvaged *(as outlined above and in the relevant contingency plans)*

Where there is no Registered Aboriginal Party:

b) any relevant registered native title holder for the land from which the Aboriginal cultural heritage is salvaged
c) any relevant native title party (as defined in the Aboriginal Heritage Act 2006) for the land from which the Aboriginal cultural heritage is salvaged
d) any relevant Traditional Owner or Owners of the land from which the Aboriginal cultural heritage is salvaged
e) any relevant Aboriginal body or organisation which has historical or contemporary interests in Aboriginal cultural heritage relating to the land from which the Aboriginal cultural heritage is salvaged
f) the owner of the land from which the Aboriginal cultural heritage is salvaged
g) Museum Victoria

Curation and Management (Reburial)

The RAP will be the caretakers of the Aboriginal cultural heritage and may choose to rebury the artefacts within an agreed location, safe from future development and disturbance. The reburial of the Aboriginal cultural heritage will be organised and paid for by the Sponsor. Sponsors must consider the willingness and the capacity of the proposed custodian to adequately, and appropriately, manage salvaged Aboriginal cultural heritage material.

Access to Activity Area

If the RAP wishes to enter the activity area at any stage during the activity, this must be facilitated by the Sponsor. The RAP must provide the Sponsor with at least three (3) business days' notice prior to the time they wish to enter the activity area. The Sponsor must ensure that the RAP is aware of any job safety restrictions or protocols. The RAP must comply with any job safety protocols required by the Sponsor and their contractors (if relevant). The RAP reserves the right to inspect the location of reburied Aboriginal cultural heritage, once the activity has been completed.

1.3.4. Contingency 7: Notification

The Sponsor is to ensure that sufficient time is given for written correspondence to reach parties (as tabled below) and for a response to be composed and sent. Notification in email form must be provided in accordance with the timeframes outlined within the relevant contingency plan/s. Email and telephone is the preferred method of communication and notification. Written correspondence in letter/mail form is not preferred, but if this is required, then sufficient time for delivery needs to be considered and a phone call should be made to notify of the posting of the letter/mail.

Response to communication must occur by either party (RAP and Sponsor) within three (3) business days or receipt of the communication, unless otherwise agreed by all parties.

Key Contacts:

Role	Name	Organisation	Contact
CHMP Contacts			
Registered Aboriginal Party	RAP Cultural Heritage Manager	EMAC	culturalheritage@easternmaar.com.au 0452 350 728
Registered Aboriginal Party	On Country Operations Manager	EMAC	craig.edwards@easternmaar.com.au 0475 310 509
Sponsor	Approvals Manager (Susie Bartlett) Or Project Manager, (Gianni Lucchi)	Lochard	Susie.Bartlett@lochardenergy.com.au 0477 882 528 OR gianni.lucchi@lochardenergy.com.au
Project Manager	Director/Principal Heritage Advisor	Ochre Imprints	Petra Schell petra@ochreimprints.com.au
Emergency Contacts			

State Coroner's Office	Coronial Admissions and Enquiries Line		1300 309 519
Victorian Police			000 (Triple 0)
Victorian Aboriginal Heritage Council	Report Ancestral Remains		Ancestral.Remains.Unit@dpc.vic.gov.au
Victorian Aboriginal Heritage Register			VAHR@dpc.vic.gov.au
Compliance			compliance.aboriginalvictoria@dpc.vic.gov.au

PART 2 – ASSESSMENT

2. INTRODUCTION

2.1. Background

This Cultural Heritage Management Plan (CHMP) has been prepared in advance of ground disturbing works associated with the proposed Heytesbury Underground Gas Storage (HUGS) Project, including both the installation of a c. 5.3 km pipeline from East and West Road, Timboon West, to Gas Works Road, Paaratte, and the construction of a well site at Timboon West.

The CHMP was commissioned by Lochard Energy (Iona Operations) Pty Ltd (ABN: 67 608 441 729) who is the Sponsor and land manager for the activity area. Details of individual landowners for each parcel of land within the activity area is provided in Table 1.

This mandatory CHMP was prepared in accordance with the requirements of the *Aboriginal Heritage Act 2006*. EMAC was the evaluation authority for this CHMP.

The aims of the CHMP were to:

- Identify the location, nature and significance of Aboriginal places within the activity area;
- Assess whether harm to Aboriginal places can be avoided by the proposed activity; and,
- Develop a framework for managing Aboriginal places, prior to, during and subsequent to the activity taking place.

Terminology

Aboriginal cultural heritage and Aboriginal places are terms used throughout this report and their meanings are taken as follows from the *Aboriginal Heritage Act 2006*:

Aboriginal cultural heritage means 'Aboriginal places, Aboriginal objects and Aboriginal human remains' (s.4).

An Aboriginal place is 'an area in Victoria or the coastal waters of Victoria that is of cultural heritage significance to the Aboriginal people of Victoria' (s.5).

All known Aboriginal places in Victoria are recorded on the Victorian Aboriginal Heritage Register (s.145).

Albert Francis acted as the Heritage Advisor for this CHMP and supervised the Standard Assessment and part of the Complex Assessment. Albert meets the requirements for a Heritage Advisor under Section 189 of the *Aboriginal Heritage Act* 2006 as he has a Master of Professional Archaeology at La Trobe University in 2018 and a Bachelor of Arts majoring in Archaeology and Ancient Cultures at Monash University in 2015

Paul Freestone also supervised part of the Complex Assessment. Paul meets the requirements for a Heritage Advisor under Section 189 of the *Aboriginal Heritage Act* 2006 as he has a Bachelor of Archaeology gained from La Trobe university in 2006 and Honours in Australian History gained from Monash University in 2013.

2.2. Legislative Context

2.2.1. Aboriginal Heritage Act 2006

The *Aboriginal Heritage Act* 2006 provides blanket protection for Aboriginal cultural heritage in Victoria. This means that Aboriginal cultural heritage is protected from harm and it is illegal to carry out an activity that can disturb Aboriginal places without the appropriate authorities under the Act (and the associated Aboriginal Heritage Regulations 2018). There are two principal mechanisms under the Act that remove the risk of illegal harm to Aboriginal cultural heritage, namely:

- A Cultural Heritage Management Plan, and
- A Cultural Heritage Permit.

These are briefly discussed below.

Cultural Heritage Management Plan

A CHMP is a report recommending measures to be taken to protect Aboriginal cultural heritage affected by a development or use of land. It must include requirements for measures to be taken before, during and after a relevant activity. The underlying philosophy of the CHMP is to minimise harm to Aboriginal cultural heritage, however it is the document through which provisions can be made to harm Aboriginal places legally. A CHMP must be approved by the appropriate RAP or where no RAP exists for the area, the Secretary DPC before the activity may commence.[1]

A CHMP usually involves a staged investigation of the risk posed by a proposed activity to Aboriginal cultural heritage. The Act and associated Regulations set out the requirements for different levels of investigation:

- Desktop Assessment;
- Standard Assessment (Field Survey);
- Complex Assessment (Subsurface Testing; Controlled Excavation).

The Sponsor (usually the proponent) of a CHMP must ensure that the plan is prepared in accordance with the prescribed standards outlined in the Act, their associated regulations, and approved forms. The CHMP must consider the following matters:

a) Whether the activity will be conducted in a way that avoids harm to Aboriginal cultural heritage;

[1] The DPC replaced the Department of Victorian Communities, as referred to in the *Aboriginal Heritage Act* 2006. FPSR carries out the day-to-day administrative functions on behalf of the Secretary.

b) If it does not appear to be possible to conduct the activity in a way that avoids harm to Aboriginal cultural heritage, whether the activity will be conducted in a way that minimises harm to Aboriginal cultural heritage;

c) Any specific measures required for the management of Aboriginal cultural heritage likely to be affected by the activity, both during and after the activity;

d) Any contingency plans required in relation to disputes, delays and other obstacles that may affect the conduct of the activity;

e) Requirements relating to the custody and management of Aboriginal cultural heritage during the course of the activity.

It is an offence under the Act for a Sponsor to fail to comply with an approved CHMP (s. 67A).

Section 46 of the Act specifies the circumstances in which preparation of a CHMP is mandatory:

- When required by the Regulations;
- When the Minister directs a CHMP to be prepared for an activity; or
- When an EES is required for an activity.

Regulation 7 states that a CHMP is required when:

- All or part of the activity is a high impact activity;

and

- All or part of the activity area is in an area of cultural heritage sensitivity - which has not been subject to significant ground disturbance.

'High impact activities' and 'areas of cultural heritage sensitivity' are defined in the Regulations. For activities which trigger a CHMP, a statutory authorisation cannot be granted for the activity without an approved CHMP.

A CHMP may be prepared voluntarily even when not required by the Act (s.45). It is illegal to carry out works that require a mandatory CHMP, without an approved CHMP in place (s. 46 (2-7).

Cultural Heritage Permit

A Cultural Heritage Permit (CHP) is issued by either a RAP, or where there is no RAP, the Secretary DPC, to "carry out an activity that will, or is likely to harm Aboriginal cultural heritage".

A CHP is sought for those instances where there is a known Aboriginal place that will be harmed by an activity. The permit outlines the measures that must be taken in order to disturb that place lawfully. Archaeological investigations are often required to inform a CHP application.

Other key features of the *Aboriginal Heritage Act* 2006 are:

- The creation of the Victorian Aboriginal Heritage Council to provide a state-wide voice for Aboriginal people and to advise the Minister for Aboriginal Affairs on issues relating to the management of Aboriginal cultural heritage.
- A system of Registered Aboriginal Parties – appointed by the Victorian Aboriginal Heritage Council – to be involved in cultural heritage decision making processes, and in particular CHMPs.
- The capacity of the Secretary to establish an Activity Advisory Group (AAG) of Traditional Owners for a project/CHMP in an area where there is no appointed RAP, to advise on the proposed activity and its impact on Aboriginal cultural heritage.
- A Preliminary Aboriginal Heritage Test (PAHT) which can be prepared and certified by FPSR as a means of formally determining whether a proposed activity requires the preparation of a CHMP or not. PAHT processes are intended to only apply for those projects where there is uncertainty about the need for a CHMP (i.e. whether sufficient evidence exists for significant ground disturbance etc.);
- Aboriginal Cultural Heritage Agreements to support the development of partnerships around the protection and management of Aboriginal cultural heritage.
- Provisions relating to enforcement including: cultural heritage audits, protection declarations and stop orders, inspection arrangements and penalties. Maximum penalties for breaching the Act are more than $280,000 for an individual or more than $1.5 million for a company.

2.2.2. Other Relevant Legislation

Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act* 1984 is intended to provide additional protection from injury or desecration of artefacts and areas which are of particular significance to Aboriginal peoples and traditions.

The Act provides for emergency declarations to be made for the protection of significant Aboriginal areas or objects which are under 'serious or immediate threat of injury or desecration'.

The Act protects 'significant Aboriginal areas' and 'significant Aboriginal objects'. A 'significant' area or object is one of particular significance to Aboriginal people in accordance with Aboriginal or Torres Strait Islander tradition.

An application for protection of a specified area or object under threat can be made orally or in writing by an Aboriginal or Torres Strait Islander person.

The Minister for Families, Housing, Community Services and Indigenous Affairs can make declarations to protect areas and objects if the area or object is under threat of injury or desecration (used, treated or affected in a manner inconsistent with Aboriginal tradition) and State law does not effectively protect the area.

The Minister may make emergency declarations or long-term declarations. Emergency declarations last for thirty days, but may be extended for a further thirty days. The Minister may not make a declaration in relation to an area or object located in a State, the Northern Territory or Norfolk Island unless he or she has consulted with the appropriate Minister of that State or Territory. These declarations may "contain provisions for and in relation to the protection and preservation of the area from injury or desecration".

Officers authorised by the Minister under the Act may also make emergency declarations, lasting up to 48 hours in relation to Indigenous heritage areas and objects.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act* 1999 provide protection for the following types of heritage places and items:

- World Heritage;
- National Heritage; and
- Commonwealth Heritage.

Any action that is likely to have a significant impact on heritage properties and places must be referred to the Minister for the Environment and undergo an environmental assessment and approval process.

There are provisions for emergency listing of the national heritage values of a place if the Minister believes that those heritage values are under threat. The Minister can list the place before referring it to the Heritage Council and must take reasonable steps to advise any owners or occupiers of the place. Any person may request that a place be included on the National Heritage List under the emergency listing provision, and, if the Minister does not list the place within ten business days after receiving the request, the Minister must:

- Publish notice of that on the internet; and
- Provide to the person who made the nomination and anyone else who requests them, reasons why the Minister has not listed the place.

2.2.3. Why Was A CHMP Undertaken For The Activity?

The proposed activity triggered the requirement for a mandatory CHMP as the activity is defined as high impact (under r. 46 of the Aboriginal Heritage Regulations 2018), and the activity is

being undertaken in areas of Cultural Heritage Sensitivity (under r.25 and r.26). The regulations that apply are described briefly, below:

- *r.46(1) The construction of a building or the construction or carrying out of works on land is a high impact activity if the construction of the building or the construction or carrying out of the work–*
    - *(a) would result in significant ground disturbance; and*
    - *(b) is for, or associated with, the use of the land for any one or more of the following purposes–*
        - *(xxvii) a utility installation, other than a telecommunications facility, if–*
            - *(B) the works are a linear project that is the construction of a pipeline with a length exceeding 500 metres; or*
            - *(C) the works are a linear project with a length exceeding 100 metres (other than the construction of an overhead pipeline with a pipe diameter not exceeding 150 millimetres); or*
            - *(D) the works affect an area exceeding 25 square metres.*
- *r.25 (1) A registered cultural heritage place is an area of cultural heritage sensitivity. (2) Subject to subregulation (3), land within 50 metres of a registered cultural heritage places is an area of cultural heritage sensitivity.* [the relevant registered cultural heritage places are VAHR 7420-0027, -0031, -0032, -0036 and -0056].
- *r.26 (1) Subject to subregulation (2), a waterway or land within 200 metres of a waterway is an area of cultural heritage sensitivity.* [the relevant waterways are Skull Creek and Leech Creek].

Ochre Imprints Pty Ltd, on behalf of the Sponsor, Lochard Energy (Iona Operations) (ABN 62 608 441 729), submitted a Notice of Intent to Prepare a CHMP (NOI) to EMAC and the Deputy Director of FPSR dated 23 May 2022. This CHMP has been issued with the identification No. 18865 by FPSR. The NOI was provided to EMAC on 23 May 2022, to Corangamite Shire Council, and the relevant landholders/managers on 23 May 2022. A copy of the NOI is provided in Appendix 1. EMAC responded on 23 May 2022 advising of their intent to evaluate the CHMP (See Appendix 2).

This CHMP was prepared in accordance with the requirements of the *Aboriginal Heritage Act* 2006.

Documentation that has been provided separately to FPSR during the CHMP process includes:

- Spatial data generated as part of the CHMP showing the activity area, ground survey areas (if any), subsurface testing or excavation pits or transects (if any);

- An archaeological survey and excavation attributes form (where relevant); and,
- VAHR forms, including site inspection forms and representative photographs of every Aboriginal place (where relevant).

2.3. Location And Extent Of Activity Area

The activity area consists of a mostly linear alignment approximately 5.3 km in length, running between East and West Road Timboon West in the north-west, to Gas Works Road, Paaratte, in the south-east. The activity area corridor extends across a series of private properties, with the parts of the properties encompassed by the activity area consisting mainly of farming land characterised by grassed paddocks which are predominantly used as grazing land for sheep, beef, and dairy. Fences cross or follow the alignment of the activity area in a number of locations, and windrow plantings are present in association with some of these.

Informal or minor property-dividing roads or tracks are also present at various locations along the alignment. Formal roads that pass through the activity area, from northwest to southeast include Timboon West, Boundary Road, Timboon West, and Timboon-Peterborough Road, Paaratte. The former alignment on Boundary Road, to the east of its current alignment, also passes through the activity area. Two tributaries of Spring Creek cross the activity area in the vicinity of Boundary Road (one on either side), and further west, the activity area is bisected by Leech Creek and Skull Creek. At its southeastern end, the activity area terminates within the North Paaratte Production Station– an area which is heavily modified by the presence of extant infrastructure related to gas storage.

The location and existing conditions of the activity area are shown in Figure 6Figure 7, while cadastral details are provided in Table 1.

A review of the Victorian Aboriginal Heritage Register undertaken during the Desktop Assessment (see Section 3.5) on 23 May 2022 found one previously recorded Aboriginal place to be located within the activity area: an artefact scatter, VAHR 7420-0031. In addition, seven previously recorded places, VAHR 7420-0025, -0026, -0027, -0032[2], -0036, -0053 and -0056 were found to be located within 200 m of the activity area (see Figure 7).

[2] VAHR 7420-0032 is located within 5 metres of the activity area boundary and is not located within the CHMP 18865 activity area

Table 1: Cadastral information for the activity area.

Category	Details
Parish	Narrawaturk & Paaratte
County	Heytesbury
Local Government Area	Shire of Corangamite
Map Sheet (1:25,000)	7420

SPI	Property Address	Owner/Occupier
4\PS426303	65 Gas Works Road, Paaratte, Vic 3268	Beach Energy (Operations) Limited ABN 66 007 845 338/Occupier: Lochard Energy (Iona Operations) Pty Ltd
1\LP201744	53 Gas Works Road, Paaratte, Vic 3268	Lochard Energy (Iona Asset) Pty Ltd
5\PS426303	641 Timboon-Peterborough, Paaratte, Vic 3268	John Francis Rylance
2\LP201745	675 Timboon-Peterborough, Paaratte, Vic 3268	Lochard Energy (Iona Asset) Pty Ltd
Part of Timboon-Peterborough Road Reserve	Timboon-Peterborough Road, Paaratte, Vic 3268	Corangamite Shire Council
26~1\PP3360	642 Timboon-Peterborough Road, Paaratte Vic 3268	Tanya Louise Vogels and Anthony William Vogels
27~1\PP3360	Boundary Road, Timboon West, Vic 3268	Brian Joseph Davison and Jessie May Davison as Legal Personal Representatives of Leslie Joseph Davison deceased Occupiers: Tanya Louise Vogels and Anthony William Vogels (part of property) and Renee Jane Whitehead and Mathew John Whitehead (part of property)
Government Road	Government Road, Timboon West, Vic 3268	Corangamite Shire Council
1\TP884206	Boundary Road, Timboon West, Vic 3268	Owner: Brian Joseph Davison Occupier: Mathew John Whitehead
1\TP436747	Boundary Road, Timboon West, Vic 3268	Corangamite Shire Council
1\TP7190	654 Boundary Road, Timboon West, Vic 3268	Renee Jane Whitehead and Mathew John Whitehead
1\TP888281	531 Boundary Road, Timboon West, Vic 3268	Mathew John Whitehead
2\LP92940	101 East and West Road, Timboon West, Vic 3268	Sharyn Elizabeth Ferguson and Guy Desmond Ferguson
Part of East and West Road Reserve	East and West Road, Timboon West, Vic 3268	Corangamite Shire Council

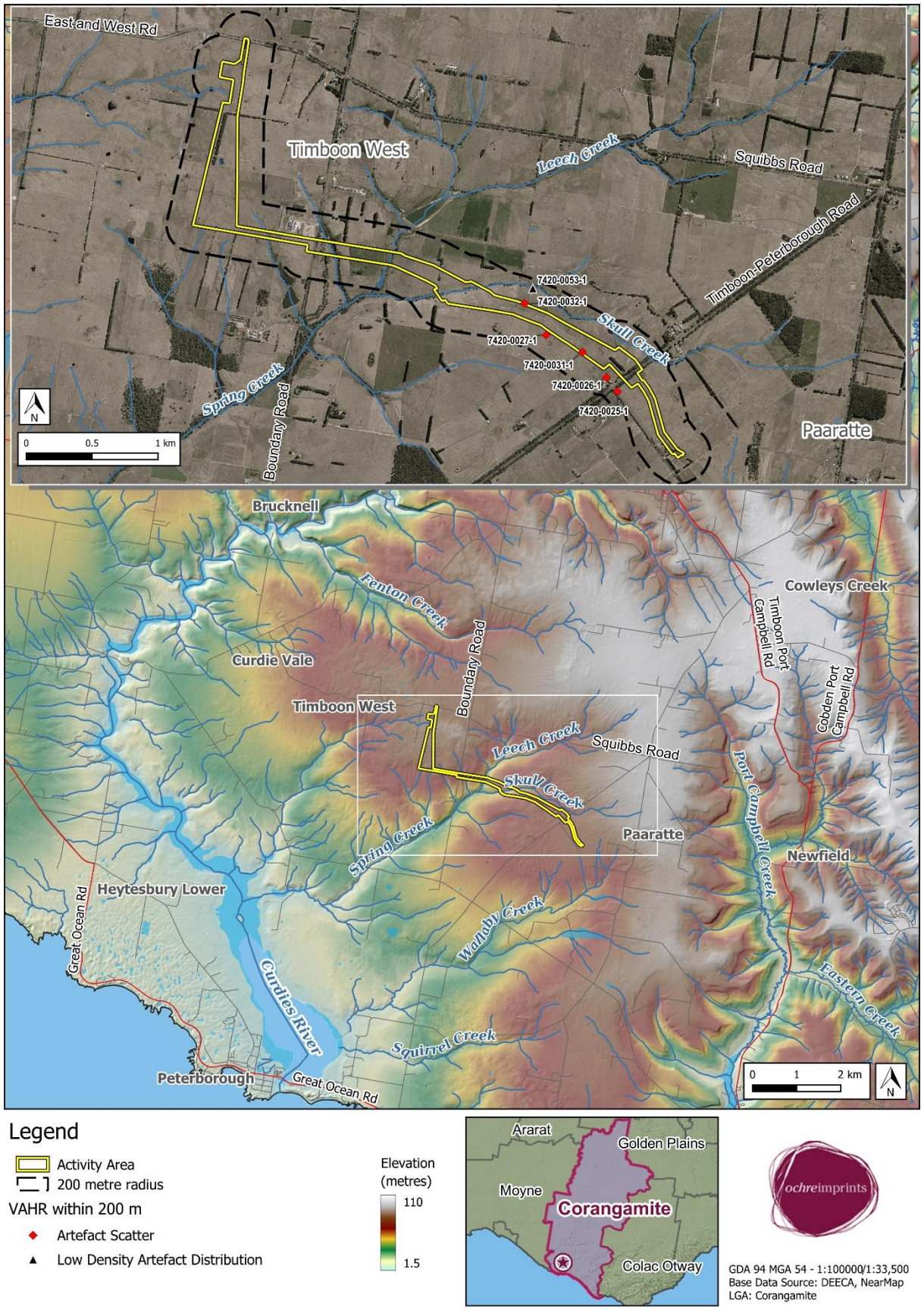


Figure 6: Location of the activity area

Figure 7: Existing conditions within the activity area

2.4. Description of Proposed Activity

The activity covers the HUGS Project which will increase the underground gas storage capacity of the IGSF through the development of the existing Heytesbury depleted gas fields. The project will develop a new wellsite which can access three depleted gas fields being Mylor Fenton Creek and Tregony. This site is referred to as the MFCT wellsite. The current plan is just to develop the Mylor field with 1-2 new gas storage well(s).

In order to connect these new storage fields a new pipeline is required. This proposed new 5.3 km pipeline (the HUGS Pipeline) will transport gas to and from the proposed new wellsite and natural storage fields. The HUGS pipeline will be an extension to Lochard's existing pipeline network from the North Paaratte Production Station (NPPS).

A plan showing proposed works and their location is provided in Figure 8 to Figure 13. The proposed activity involves the following elements:

- Well site works which involves the following sub-components:
    - Preparatory works to prepare the site for drilling;
    - Drilling of the gas storage well(s); and,
    - Wellsite construction works to build the permanent facilities.
    - HUGS Pipeline Construction.

Preparatory works are anticipated to take approximately 70 days and include:

- Site mobilisation;
- Installation of fencing and gates around the wellsite area;
- Removal and stockpiling of topsoil to a depth of 150-300 mm within the well site area;
- Levelling of the well site using a cut and fill process and importing of crushed rock; materials to create a level hardstand area to accommodate the selected drill rig; and,
- Construction of an access road of 8m width.

The drilling works includes:

- Mobilisation and erection of drill rig and associated equipment. It should be noted that the actual rig layout will be confirmed once contracted;
- Drilling and completing 1-2 gas storage wells into the Mylor field (approximate True Vertical Depth of 1620 – 1700 m); and,
- Demobilisation of drill rig and associated equipment.

The following works are required to make the wellsite operational:

- Wellsite construction and installation of associated infrastructure including piping, valves, electrical equipment, solar photo-voltaic cells, and fencing;
- Wellsite commissioning and testing of new infrastructure;

- Landscaping and vegetation planting around the perimeter of the site and rehabilitation of workspace area not required as part of the permanent site; and,
- Construction of the three sheds to house equipment.

Pipeline construction works include:

- Geotechnical testing and survey works;
- Installation of fences along the CROW;
- Grading and stripping of topsoil to a depth of 150-300mm;
- Installation of an approximately 5.3km long alignment of pipeline between North Paaratte Production station (NPPS) and the MFCT well site;
- Excavation of a trench of approximate dimensions 1.7-2.0 m deep and approximately 0.65 - 0.85m. wide in which the new DN300 licenced pipeline, DN50 MEG line and Fibre Optic Cable will be installed;
- Open trenching works at the crossings of Skull Creek and Leech Creek;
- HDD crossing of Boundary Road and Timboon-Peterborough Road;
- The stockpiling of topsoil and subsoil in the pipeline CROW. Soils will be reinstated at as part of pipeline construction; and,
- Removal and/or trimming of existing vegetation.

The proposed activity will involve disturbance to both surface and subsurface parts of the activity area within the pipeline corridor and within the wellsite area. Parts of the activity area that lay outside of the pipeline corridor and wellsite area will not be impacted by the proposed works with fencing installed along the CROW and around the wellsite. The proposed activity will involve the removal of topsoil, subsurface soils, and in some instances, underlying clay. The actual depth of excavation associated with the activity will vary according to ground conditions. It is expected that soil horizons within the pipeline corridor will be impacted by the proposed works, with site preparation works to partially impact soil profiles within their footprint, pipeline construction works to fully impact the soil profiles, drilling works to fully impact the soil profile within their footprint, and wellsite construction works to partially impact the soil profile, although the depth of works will differ across each component of the activity.

Within the activity area, soil horizons were identified to range in depth from 150-750 mm, and no buried land surfaces were identified during the assessment. The activity area crosses a combination of Brighton Group and Port Campbell Limestone bedrock, both of which contain gradational soil profiles overlying regolith that has weathered *in situ*. No evidence of alluvial or colluvial sediments was identified in the activity area during the assessment, deposits of which are the main indicators of the potential for buried land surfaces. In addition to this, the cultural heritage present within the activity area is shallow in nature (0-100 mm in depth). Therefore, it is likely that the activity will entirely impact on any cultural deposits within the works footprint.

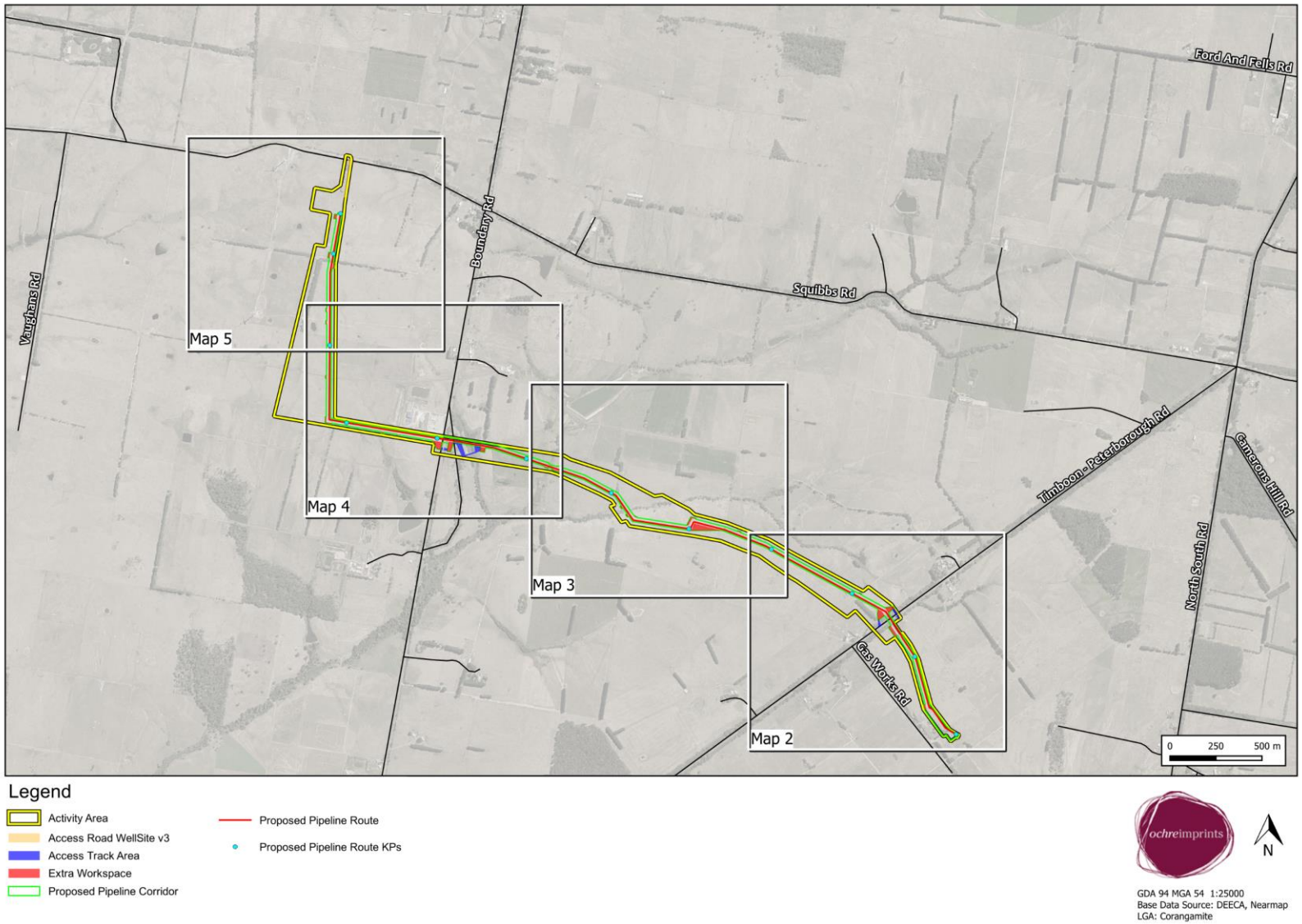


Figure 8: Development plan and proposed works area overview.

Figure 9: Development plan and proposed works area detail 1.

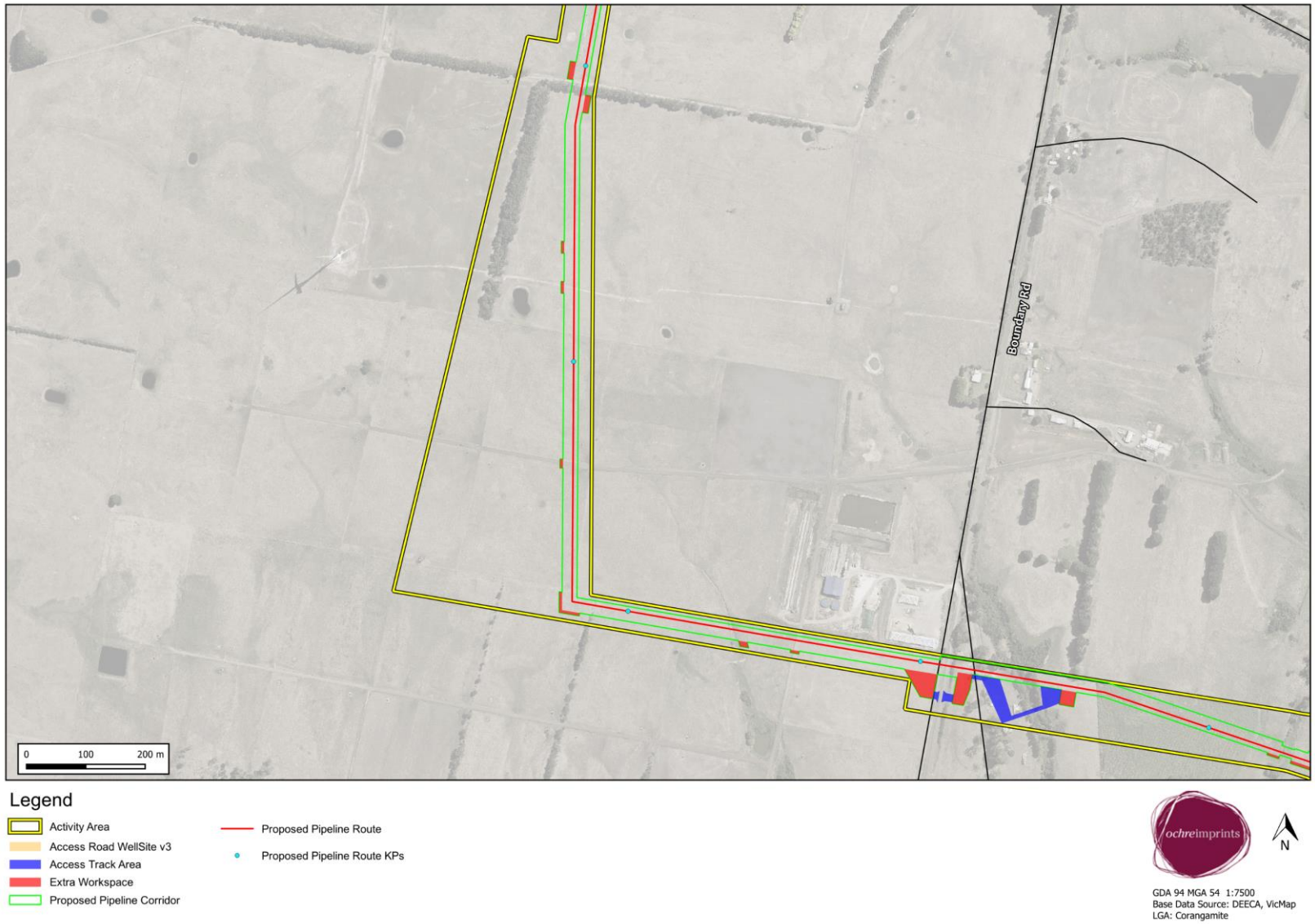


Figure 10: Development plan and proposed works area detail 2.

Figure 11: Development plan and proposed works area detail 3.

Figure 12: Development plan and proposed works area detail 4.

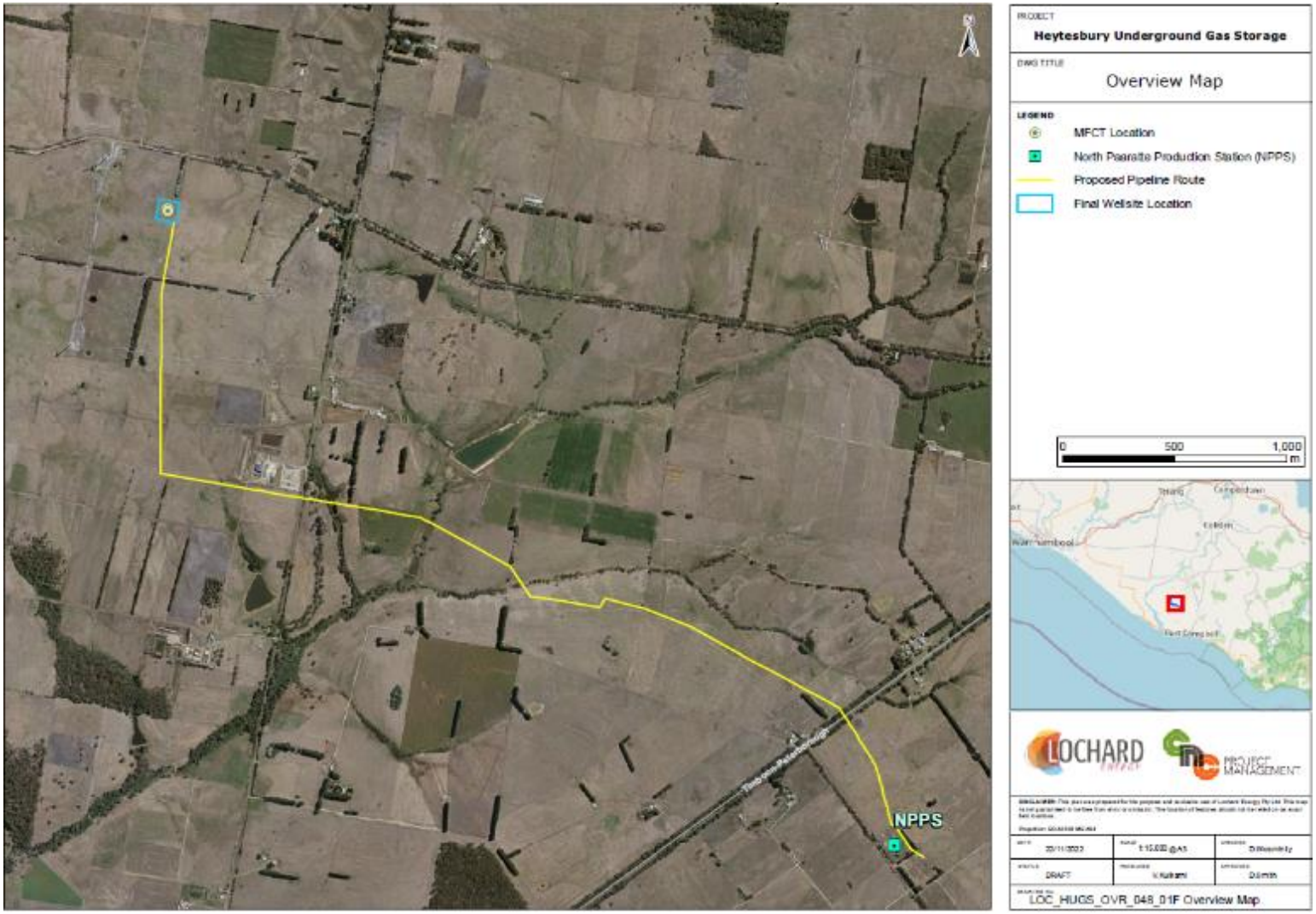


Figure 13: Development Overview (Image provided by the Sponsor).

2.5. Registered Aboriginal Party (RAP)

2.5.1. Communication with the RAP

Eastern Maar Aboriginal Corporation (EMAC) is the Registered Aboriginal Party (RAP) for the activity area. EMAC were consulted throughout the preparation of this CHMP. Representatives from EMAC involved in the consultation process during development of this plan are:

- John Clarke – General Manager Biocultural Landscapes
- Craig Edwards – On Country Operations Manager
- Leanne Bain – Strategic Liaison Officer
- Amos Harradine – Compliance Officer
- Vinicius Fiumari – Cultural Values Researcher
- Nathalia Guimares – RAP Cultural Heritage Manager
- Emily Corris – RAP Technical Specialist

Communication with EMAC is summarised in Table 2.

Table 2: Communication with Aboriginal stakeholders.

Date	Group/Person	Nature of Contact	Reason
23/05/22	Albert Francis (Project Management Archaeologist - Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Provided a copy of the NOI and requested if EMAC would evaluate the CHMP.
23/05/22	Nathalia Guimares (RAP Cultural Heritage Manager - EMAC) to Albert Francis (Project Management Archaeologist - Ochre Imprints)	Email	Confirmed that EMAC would evaluate the CHMP.
15/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Requested availability for Standard Assessment fieldwork
15/11/22	Nathalia Guimares (RAP Cultural Heritage Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provide appropriate contact for booking requests
15/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Acknowledgement of the above

15/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Sent follow up request for Standard Assessment availability
15/11/22	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provided dates and requested booking form
16/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided Standard Assessment booking form
17/11/22	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Confirmed Standard Assessment dates. Requested meeting location
21/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided meeting location for Standard Assessment fieldwork
22/11/22	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provide rep allocation
24/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Acknowledgement of the above
24/11/22	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided updated meeting point and link for Sponsor induction
06/03/23	Albert Francis (Project Management Archaeologist - Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Provided proposed subsurface testing plan for endorsement by EMAC which shows increased amount of testing along the alignment of the pipeline to have STPs at every 250 m as discussed with EMAC during the inception meeting. There are also additional STPs in the eastern part of the activity area to ‘fill in the gaps’ given this is a larger, more open area and may be impacted by the activity.
07/03/23	Nathalia Guimares (RAP Cultural Heritage Manager - EMAC) to Albert Francis (Project Management Archaeologist - Ochre Imprints)	Email	Acknowledgement of the above and confirmed the changes to the subsurface testing plan reflect what was discussed in the meeting.
27/03/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided update on first phase of Complex Assessment. Notified EMAC one stone artefact had been identified in STP33 and requested EMAC provide their standards for radial extent testing

	and Emily Corris (RAP Technical Specialist – EMAC)		
03/04/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided clarification on EMAC standard extent testing procedures: double negatives in cardinal directions with 5m spacing. Noted that due to the nature of the proposed activity, the extent testing for this CHMP will be required to follow the linear alignment. Requested Ochre send through a proposed extent testing map for endorsement
04/04/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Requested availability for Complex Assessment fieldwork
05/04/23	Craig Edwards (On Country Operations Manager - EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Provided confirmation of Complex Assessment booking
12/04/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above information. Provided proposed testing plan for endorsement and requested feedback prior to the next phase of fieldwork on 26-27 April 2023
13/04/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Responded with a few changes to the proposed testing – double negatives to the north and south of EP2
13/04/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Agreed to the changes proposed by EMAC for radial testing around EP2
13/04/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided link to visitor induction for upcoming fieldwork
21/04/23	Craig Edwards (On Country Operations Manager - EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Provided field rep allocation for Complex Assessment
21/04/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Acknowledgement of the above.

26/04/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided results of extent testing. Asked for confirmation that extent testing procedures were complete. Advised Ochre would need to cancel fieldwork booked for the 27 April. Requested a date for a post Complex Assessment meeting.
26/04/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Responded – EMAC is satisfied with the extent testing around EP2. Advised Craig Edwards would need to confirm cancellation of fieldwork. Provided meeting availability
26/04/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above. Would let EMAC know asap about the meeting.
26/04/23	Craig Edwards (On Country Operations Manager - EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Confirmed cancellation of fieldwork
26/04/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Acknowledgement of the above.
27/04/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC) and Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided booking form for post Complex Assessment meeting
28/04/23	Emily Corris (RAP Technical Specialist – EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Provided confirmation of booking. Requested a calendar invite be issued for the meeting by Ochre Imprints.
17/05/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided a copy of EMAC meeting minutes. Requested these notes be signed off by the Sponsor.
19/06/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Requested availability for a project meeting and 2 days of Complex Assessment fieldwork
19/06/23	Craig Edwards (On Country Operations Manager - EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Responded with the correct contact information for meeting bookings
23/06/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Queried what dates were available after the 11th of July for Complex Assessment fieldwork

23/06/23	Craig Edwards (On Country Operations Manager - EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Advised all dates after 11 July are available
05/07/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Queried whether dates were still available after the 11 July for Complex Assessment fieldwork
05/07/23	Craig Edwards (On Country Operations Manager - EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Responded that EMAC still had availability but would need a booking form asap to confirm dates
05/07/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC	Email	Responded with meeting location and booking form
05/07/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC	Email	Responded with confirmation of fieldwork booking
11/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided a copy of EMACs meeting minutes and requested Sponsor sign off on these
12/07/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Responded that Ochre will pass these minutes on to the Sponsor and provided a subsurface testing plan for endorsement by EMAC
12/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Advised of EMACs approval on proposed subsurface testing plan
12/07/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC) to	Email	Acknowledgement of the above
12/07/23	Annie Morgan (Administration Officer – Ochre) to Craig Edwards (On Country Operations Manager - EMAC	Email	Acknowledgement of booking confirmation for Complex Assessment fieldwork
17/07/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Craig Edwards (On Country Operations Manager – EMAC) and Emily Corris (RAP Technical Specialist – EMAC)	Email	Request to cancel Complex Assessment fieldwork

17/07/23	Craig Edwards (On Country Operations Manager – EMAC) Annie Morgan (Administration Officer – Ochre)	Email	Confirming cancellation of fieldwork
18/07/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Craig Edwards (On Country Operations Manager – EMAC) and Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above. Queried who to contact to set up a meeting
18/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Responded with meeting booking contact
18/07/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Requested availability for project meeting
18/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Responded with meeting booking availability
21/07/23	Annie Morgan (Administration Officer – Ochre) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided booking form
21/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Provided confirmation of meeting booking and requested a calendar invite be sent to attendees
21/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Annie Morgan (Administration Officer – Ochre)	Email	Notification that booking form was not attached to the previous email. Requested booking form
21/07/23	Annie Morgan (Administration Officer – Ochre) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided booking form
14/07/23	David Smith (Sponsor -Lochard) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Provided a copy of the PowerPoint presentation (with further information on the MCFT well site) presented by Lochard at the post Complex Assessment meeting
21/07/23	Nathalia Guimares (RAP Cultural Heritage Manager - EMAC) to David Smith (Sponsor -Lochard)	Email	Expressed concerns over update to the activity area to include the well site without a CHMP. Stated that the well site would need to be subject to the same amount of assessment as the pipeline corridor. Requested the Sponsor include the well site in the

			scope of the current CHMP 18865 assessment.
24/07/23	David Smith (Sponsor -Lochard) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Responded a due diligence was being prepared to address assessing the well site but that given the above – Lochard would pursue including development within the CHMP 18865 assessment. Noted that Lochard had considered preparing a separate CHMP for the well site but that remaining with a single CHMP to cover both would prove more efficient. Flagged that there had been issues with access/ground conditions at the required testing locations and proposed altering the location of test pits. Advised Ochre would send through a revised testing plan and requested available dates for an additional round of testing.
02/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Requested availability for 2 additional days of Complex Assessment fieldwork. Asked if 24-25 August was available
02/08/23	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Confirmed dates were available and requested a booking form
02/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided booking form for fieldwork and link to Sponsor induction
02/08/23	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provided confirmation of booking
02/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Requested availability for a Complex Assessment meeting
07/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Follow up on meeting availability
18/07/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided a record of EMAC meeting minutes. Requested these be reviewed and signed off on by the sponsor

10/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Follow up on meeting availability
10/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided meeting availability and EMACs current booking form for meetings
10/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided booking form for meeting
10/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provided confirmation of booking and requested a calendar invite be sent to attendees
10/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above
11/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided calendar invite
16/08/23	Petra Schell (Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Provided a copy of Ochre meeting notes and requested these be merged with the EMAC minutes. Provided subsurface testing plan for endorsement
16/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Petra Schell (Ochre Imprints)	Email	Confirming EMAC will add Ochre notes to the EMAC meeting record. Queried whether the change to the pipeline alignment will still meet the requirement for testing every 250m as per the original agreed complex methodology. Stated that it is unclear how much the pipeline alignment will be changed as it is not shown on the subsurface testing map.
16/08/23	Petra Schell (Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Responded to the above query by saying that the Sponsor is hoping to adjust the alignment so that it extends back into the original pipeline corridor at the locations by EMAC indicated. Drawings for the realignment have not been prepared, as the Sponsor are awaiting the results of this round of testing.

16/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Petra Schell (Ochre Imprints)	Email	Acknowledgement of clarification provided above. Stated there shouldn't be an issue with the realignment and testing completed to date. However, it is something the Sponsor should keep in mind if they do decide on further alignment changes. Attached a copy of the merged minutes.
16/08/23	Petra Schell (Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above
17/08/23	Craig Edwards (On Country Operations Manager - EMAC) to Karly Rigg (Project Administrator – Ochre Imprints)	Email	Provided field rep allocation. Requested updated meeting point and start time
18/08/23	Karly Rigg (Project Administrator – Ochre Imprints) to Craig Edwards (On Country Operations Manager - EMAC)	Email	Provided meeting point and start time for fieldwork on an amended booking form
30/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided a record of EMAC meeting minutes. Requested these be reviewed and signed off on by the sponsor. Provided a copy of EMACs standard management conditions and contingencies
31/08/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement and request for word doc versions of the conditions /contingencies in order to add in specific requirements for the cultural heritage and compliance inspections discussed yesterday at our meeting
30/08/23	Emily Corris (RAP Technical Specialist – EMAC) to Krista Whitewood (Project Management Archaeologist - Ochre Imprints)	Email	Provided a word doc version of EMACs standard management conditions and contingencies
31/08/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC)	Email	Acknowledgement of the above
18/09/23	Krista Whitewood (Project Management Archaeologist - Ochre Imprints) to Emily Corris (RAP Technical Specialist – EMAC) and Nathalia Guimares (RAP Cultural Heritage Manager - EMAC)	Email	Advised Sponsor would like to update the activity area. Provided a location map and spatial data

2.5.2. Summary of Meetings

Project Establishment meeting – 22 June 2022

Attendees: Albert Francis and Petra Schell (Ochre Imprints), Nathalia Guimaraes (RAP Cultural Heritage Manager - EMAC), Emily Corris (RAP Technical Specialist - EMAC), Craig Edwards (On Country Operations Manager - EMAC), and Jimmy Soni (Lochard Energy).

Meeting Record:

- Petra introduced the project: CHMP 18865 is being prepared ahead of the Heytesbury Underground Gas Storage (HUGs) pipeline. The HUGs project aims to utilise the depleted Heytesbury gas fields for future underground gas storage, with a requirement to connect well sites to existing gas infrastructure via a gas pipeline. The activity area is a mostly linear alignment approximately 5.3 km in length, running between East and West Road Timboon West in the north-west, to Gas Works Road, Paaratte, in the south-east. The activity area corridor extends across a series of private properties, with the parts of the properties encompassed by the activity area consisting mainly of farming land characterised by grassed paddocks. There are four previously registered Aboriginal places within 50m of the activity area VAHR 7420-0027, -0031, -0036, and -0056 (all within 50 m) and within 200 m of named waterway which is Skull Creek and Leech Creek. One place, an artefact scatter (VAHR 7420-0031) is within activity area.
- Petra presented post contact land use history which shows roads have been established by c. 1887. A c. 1966 aerial shows the activity area as farming land divided into fenced paddocks bisected by road and creeks. Some evidence of cultivation in some areas and waterlogging. Contemporary aerial imagery shows area much the same aside from an additional unsealed road west of Boundary Road and infrastructure associated with North Paaratte Production Station gas plant to the east and existing underground gas pipelines have been shown on a contemporary aerial.
- Petra spoke on the geographic region - a 5 km radius around the linear activity area which is characterised by sedimentary plains that form part of the wider Western Plains of Victoria. These sedimentary plains are composed largely of marine sands deposited during the retreat of the Pliocene Sea that once extended further north. Soils are generally characterised by duplex soil types, with a marked texture and colour contrast between topsoil and subsoil deposits. This soil is generally described as pale or grey and sandy, overlying concretions of ironstone or clay.
- A total of 26 previously recorded Aboriginal places are located in this region comprising 22 artefact scatters, 3 LDADs and 1 object collection. Aboriginal places within the geographic region generally contain 10 or fewer artefacts which, if recorded today,

would be registered as LDADs; of the two Aboriginal places with greater than 10 stone artefacts, VAHR 7420-0018 contains stone artefacts introduced as road gravel into the geographic region, while VAHR 7420-0025 was identified after grading of a pipeline easement and heavy rains, which provided high surface visibility conditions; artefact scatters and LDADs are present in both surface and subsurface contexts, with half of these places (n=13) displaying a recorded subsurface component; artefacts are most commonly found in shallow subsurface soils to 150 mm depth, with a large number of subsurface artefacts having been recorded as a result of monitoring pipeline grading activities; Some previous assessments have covered the activity area but none of these contained a subsurface component.

- EMAC requested the assessment progress to a Standard and that the entire activity area be subject to survey.

Post Standard Assessment– 7 February 2023

Attendees: Albert Francis and Petra Schell (Ochre Imprints), Nathalia Guimaraes (RAP Cultural Heritage Manager - EMAC), Craig Edwards (On Country Operations Manager - EMAC), Emily Corris (RAP Technical Specialist - EMAC), David Smith (Lochard Energy).

Meeting Record:

- Albert provided brief background of project including summary of the Desktop Assessment.
- Albert outlined the results of the Standard Assessment. The activity area comprised two landforms: gently undulating plain and a dissected plain. Ground surface visibility was consistent across the entire activity area being identified as <1% on both landforms. Disturbances identified ranged from minor and localised such as agricultural and pastoral use to high impact such as the presence of high-pressure gas pipelines.
- No Aboriginal cultural material was identified during the Standard Assessment. Landforms that were identified to be potentially sensitive to subsurface archaeological deposits were natural rises, especially those in proximity to natural water sources.
- Not all of the activity area was surveyed with the northern most portion of the activity area omitted as field representatives suggested that they were of low significance.
- Complex methodology discussed. RAP agrees that two EPs, one per landform are to be excavated. Albert put forward STPs to be excavated on high points adjacent to creeks and tributaries which field representatives at the time of the survey indicated should be subject to subsurface testing.

- EMAC informed that they also require STPs to be excavated every 250m along the pipeline alignment. EMAC suggested some additional testing be undertaken in the event that the design plans change. EMAC requested the Sponsor and HA refine testing locations based on areas of impact and the possibility of design changes, and to email a proposed testing map to EMAC before the Complex Assessment. Sponsor would also like to send the proposed testing to the farmers, so they are informed.

Post Complex Assessment– 17 May 2023

Attendees: Krista Whitewood and Petra Schell (Ochre Imprints), Nathalia Guimaraes (RAP Cultural Heritage Manager - EMAC), John Clarke (General Manager Biocultural Landscapes - EMAC), Emily Corris (RAP Technical Specialist - EMAC), Leanne Bain (Strategic Liaison Officer – EMAC), David Smith and Devin Wosminity (Lochard Energy).

Meeting Record:

- Krista provided a recap of the Standard Assessment: no surface cultural heritage was identified during the survey and VAHR 7420-0031 was reinspected but not relocated.
- Devin asked about the number of test pits excavated within the activity area to date, mentioning that previous CHMPs in the area had minimal testing and queried the need for further testing which in comparison seemed high having worked in the area for a number of years. EMAC explained that there are better standards for cultural heritage assessments now therefore a more Complex testing method is required. EMAC also now has statutory authority in the area.
- Krista discussed the Complex Assessment results: cultural heritage material in the form of stone artefacts were found in one EP and one radial STP adjacent Leech Creek. Krista proposed registering the three stone artefacts as an LDAD. EMAC agreed to this.
- David spoke with regard to site management, Lochard is currently working on harm avoidance and exploring whether HDD is possible. David explained that the steep embankment along Leech Creek could be an issue but that a site visit would be required to check conditions of the embankment.
- EMAC stated their role is to protect heritage value and harm is the last option and would want to explore all other options first. David asked if EMAC would require matting over the area to avoid impacts to the surrounding ground surface as work will be targeting the drier months. David also asked what the required offset distance of the drilling would be to avoid harm.

- EMAC responded that the standard buffer zone is 30-50m but that would be up to negotiation once the Sponsor has a better understanding of the drilling points. EMAC requested another meeting to be held once information regarding HDD is available. Ochre and Sponsor to book in another meeting

Post Complex Assessment

Date: Tuesday 11/07/2023.

Attendees: Krista Whitewood (Ochre Imprints), Emily Corris (RAP Technical Specialist - EMAC), Craig Edwards (On Country Operations Manager - EMAC), Leanne Bain (Strategic Liaison Officer - EMAC), David Smith and Susie Bartlett (Lochard Energy), Iain Mackey and Tim Vesey (MVC services).

Meeting record:

- David provided some background information on the project and due diligence which is being prepared for the well site in the northeast portion of the pipeline alignment. The area subject to DD has been chosen as it is not in any area of cultural heritage sensitivity and has sufficient separation from the Timboon West windfarm.
- Krista provided a brief overview of the project and activity area; construction of a gas pipeline – pipeline corridor extends across a series of private properties, with the parts of the properties encompassed by the activity area consisting mainly of farming land characterised by grassed paddocks. The desktop identified one previously recorded Aboriginal place to be within the activity area. No surface cultural heritage material was identified during the survey. The assessment was progressed to a Complex Assessment phase which involved the manual excavation of a total 29 STPs (0.5 x 0.5 m) spaced at 200m intervals along the proposed pipeline corridor and EPs (1 x 1 m) on each landform (2 total). The Complex Assessment identified one stone artefact in EP2 at a depth of 0-100mm. Ochre consulted with EMAC on further extent testing which involved radial STPs in all four cardinal directions around EP2 to double negatives. An additional two subsurface stone artefacts were identified during extent testing in STP 33 at a depth of 0-100mm.
- The Sponsor had previously advised that the pipeline is required to be constructed across Leech Creek embankment which currently crosses at the location of STP33 and EP2. EMAC requested the Sponsor explore possible options for harm avoidance to cultural heritage material, and review construction methods for the Leech Creek embankment.

- David advised that a site visit had been undertaken to assess the possibility of HDD where cultural heritage material had been identified during the CHMP assessment and that HDD would be difficult due to the steepness of the embankment.
- David proposed some further testing within the pipeline corridor on the eastern side of Leech Creek to allow for the corridor to be moved further south in order to avoid EP2 and STP33. David advised there is currently 50-60m between the southern edge of the pipeline corridor and the southern boundary of the activity area at this location. Further testing was discussed by EMAC, Ochre, and the Sponsor, and agreed to in the form of:
    - Manual excavation of STPs (0.5 x 0.5 m) at 10m intervals along the eastern side of Leech creek (to the south of STP33 and EP2);
    - Manual excavation of STPs (0.5 x 0.5 m) at 20m intervals along the western side of Leech creek given that no testing has occurred in this location where impacts are proposed.

Next steps:

- Ochre to provide a subsurface testing plan for endorsement by EMAC prior to fieldwork on the 17-18 July;
- Sponsor to send EMAC information about the well site in advanced of the planning permit;
- Ochre required to contact EMAC if cultural heritage material is found during the next phase of testing, before commencing extent testing.

Post Complex Assessment meeting:

Date: Tuesday 8/08/2023.

Attendees: Krista Whitewood and Petra Schell (Ochre Imprints), Emily Corris (RAP Technical Specialist - EMAC), John Clarke (General Manager Biocultural Landscapes – EMAC), Nathalia Guimaraes (RAP Cultural Heritage Manager – EMAC), David Smith and Susie Bartlett (Lochard Energy), and Tim Vesey (MVC services).

Meeting record:

- Susie introduced the project and provided EMAC with information on the planning application submitted for the wellsite location near east and west road. Susie noted that the activity area had been revised at the northwest end to include the well site and that the portion of the activity area north of east west road has now been removed from the activity area.

- David provided further information on development over Leech Creek. Lochard would like to proceed with moving the pipeline corridor to the south of EP2 and STP33, away from where the stone artefacts are located given the most recent results of testing. In addition, Lochard would ensure there are some protection measures in place around where the stone artefacts have been located. David proposed temporary fencing and an established no-go zone which would be in place during construction. EMAC indicated no objection to the proposed change.
- Krista provided the testing results following the excavation of additional STPs: 5 STPs spaced at 10m intervals were excavated along Leech Creek east embankment. No cultural heritage material was identified. Krista provided photos of STP39 which was representative of the stratigraphy – brown silty clay overlying brown clay at a depth of 300-400mm.
- Krista explained that the team completed testing on the eastern side of Leech Creek but could not access the western embankment due to wet weather conditions making the area difficult to access.
- Susie explained that Lochard would like to propose moving the remaining three STPs further west so that they are sitting at the top of the hill. Lochard would also organise transport of the equipment to the testing site and would work out access with the landholders/field team prior to fieldwork. Petra noted that the position on top of the hill was more in line with the intent of the subsurface testing in this area which was to examine elevated rises adjacent to drainage lines. EMAC agreed to moving the proposed STPs back further from Leech Creek.
- Petra suggested Ochre send through the subsurface testing plan to EMAC for endorsement.
- Susie presented the concept plan for the MCFT well site. Petra proposed 3 STPs for this location. Petra added that no testing had been previously undertaken in this area during the initial Complex Assessment phase.
- Nathalia asked for more information on the landforms in this area. Petra commented that the landform at the well site is undulating plain and that two EPs had been excavated on this landform during the Complex Assessment. Nathalia requested that an EP (1m x 1m) replace one of the STPs proposed for the well site area given the level of the impact proposed at the well site– the EP would need to be excavated in an area where there is less disturbance. Petra suggested one of the two southernmost STPs be converted to an EP due to the presence of an access track and introduced vegetation at the northern STP.

The following subsurface testing method was agreed to:

- 3 STPs on the west side of Leech Creek – to be placed at the top of the hill (off the slope landform) where testing locations are accessible;
- 2 STPs to be placed at the northern and southern end of the well site;
- 1 EP to be placed in the central west portion of the well site where it appears that there has been less disturbance.

Next steps:

- Ochre to provide a subsurface testing plan to EMAC for endorsement prior to fieldwork on 24-25 August;
- Lochard to organise safe transport of equipment and personnel into each testing location prior to fieldwork.
- Meet with EMAC to discuss the results of the Complex Assessment.

Post Complex Assessment meeting:

Date: Tuesday 30/08/2023.

Attendees: Krista Whitewood and Petra Schell (Ochre Imprints), Amos Harradine (Compliance Officer - EMAC), Emily Corris (RAP Technical Specialist - EMAC), Nathalia Guimaraes (RAP Cultural Heritage Manager – EMAC), Susie Bartlett and Gianni Lucchi (Lochard Energy).

Meeting record:

- Krista provided a brief overview of the project and activity area; construction of a gas pipeline – pipeline corridor extends across a series of private properties, with the parts of the properties encompassed by the activity area consisting mainly of farming land characterised by grassed paddocks. No surface cultural heritage material was identified during the survey. The assessment was progressed to a Complex Assessment phase which involved the manual excavation of STPs (0.5 x 0.5 m) spaced at 200m intervals along the proposed pipeline corridor and EPs (1 x 1 m) on each landform (2 total). The Complex Assessment identified 1 stone artefact in EP2 at a depth of 0-100mm. Ochre consulted with EMAC on further extent testing which involved radial STPs in all four cardinal directions around EP2 to double negatives. An additional 2 subsurface stone artefacts were identified during extent testing in STP 33 at a depth of 0-100mm.

- Krista explained that as the pipeline is required to be constructed across Leech Creek embankment which currently crosses at the location of STP33 and EP2, Lochard previously proposed some further testing on the east and west side of Leech Creek to allow for the corridor to be moved further south to avoid EP2 and STP33.
- Following recent consultation, EMAC had requested further testing in the form of 2 STPs and 1 EP at the MFCT wellsite location.
- Krista presented the results from testing along Leech Creek embankment which did not identify any additional cultural heritage material. EP3 which was excavated at the well site had a different stratigraphy to the other two EPs excavated within the activity area: Dark grey silty sand to a depth of 200mm, overlying white sand to a depth of 450mm atop of a sterile clay layer at 500-550mm. The water table was identified at 450mm, and this was also present in the other 2 STPs excavated within the well site.
- Krista briefly spoke on the results of testing along the western side of Leech Creek and went over the stratigraphy at this location which comprised brown silty clay overlying sterile brown clay at a depth of 300mm.
- Krista explained the Sponsor would like to move the pipeline corridor south of EP2 and STP33 to avoid harm to the location where the stone artefacts were found given all test pits to the south of EP2 and STP33 had been negative.
- Susie added that Lochard could allow a 15-20m buffer zone around this location so that the location where the stone artefacts were found isn't impacted by construction. Susie also noted that typical construction fencing would not be appropriate for installation to protect the buffer zone. Lochard will investigate appropriate fencing and signage to protect the buffer zone from construction impacts. EMAC agreed that these protection measures would be appropriate for the management of cultural heritage and that a 15m buffer around STP33 and EP2 would be sufficient.
- Nathalia asked if one previously registered Aboriginal place (VAHR 7420-0032 was inside the activity area. Krista confirmed this and commented that this place comprises an isolated surface stone artefact which was identified during a stage of topsoil stripping associated with construction of the old pipeline corridor. The site was also subject to inspection/survey during the Standard Assessment undertaken for CHMP 18865, but no cultural heritage material was found at this location. Susie commented that VAHR 7420-0032 would not be impacted by the pipeline and wellsite works.
- Amos from EMAC asked if Lochard would be open trenching at Leech Creek Crossing and how many inspections would need to take place as EMAC would like to be able to undertake inspections between digging and laying of the pipe in this location. Nathalia

also added that she would like to see inspections occur across the entire activity area. Susie added that topsoil stripping at the well site is scheduled to occur in February 2024 and the remainder of the pipeline will be stripped in January 2025. Gianni commented that the pipeline trenching would likely be no more than 1km a day of open trench.

- Krista asked whether it would be appropriate to agree on one compliance inspection at the location of EP2 and STP33 and one inspection per each stage of topsoil striping and Amos from EMAC requested access between the excavator and the trench section.
- Petra provided a summary of the conditions discussed which were – temporary fencing and a buffer zone around stone artefacts at leech creek and compliance inspections to occur during stripping and trenching works. Petra asked whether EMAC could send through a copy of the standard conditions and contingencies and asked if EMAC would like to review a draft before lodging the CHMP. EMAC responded that they will review the conditions and mapping of temp fencing alignment in the CHMP.

Post Complex Assessment meeting:

Date: Wednesday 19/10/2023.

Attendees: Krista Whitewood and Petra Schell (Ochre Imprints), Emily Corris (RAP Technical Specialist - EMAC), Vinicius Fiumari (Cultural Values Researcher - EMAC), Susie Bartlett, David Smith, and Gianni Lucchi (Lochard Energy)

Meeting record:

- Susie provided a brief overview of the HUGS project and activity area which will seek to develop existing Heytesbury depleted gas fields and the Mylor Fenton Creek wellsite. The pipeline alignment is approximately 5.3km in length. Multiple phases of Complex Assessment have been undertaken, including extensive amounts of testing within Leech Creek corridor. A total of three stone artefacts were identified during the Assessment and no additional stone artefacts were identified during subsequent phases of testing at Leech Creek. EMAC previously provided some comments on the CHMP draft management conditions and contingencies; specifically relating to contingency four and representation of the buffer zone around VAHR 7420-0063. Lochard and ochre have responded to this feedback and would like to provide a final run through of these changes prior to lodging the CHMP for evaluation.
- Susie commented Lochard will display ‘no-go’ zone signage and additional fencing at the location of VAHR 7420-0063 and presented mapping (Figure 5) which shows the

15m buffer zone clearly. Susie commented that strict control measures will be implemented in this area to ensure workers are working within the CROW only. Access to areas outside of the CROW will not be permitted with the exception of general farming by the land occupier. No issues were raised by EMAC in relation to this.

- Susie explained that Lochard has reverted back to the standard wording under contingency four with the exception of an additional paragraph stating that if the suspected Aboriginal cultural heritage is determined not to be Aboriginal cultural heritage by the Heritage Advisor and EMAC, works may recommence. David reiterated that Lochard would like to make it clear that if material discovered is determined not to be cultural, then the activity can recommence. Emily responded that this shouldn't be an issue but would need to check this in context of the CHMP. Krista shared the CHMP document outlining this paragraph. Emily commented that the reference to EMAC would need to be replaced with wording from EMACs standard contingencies 'the relevant RAP or Traditional Owner representatives. Ochre and Lochard responded that they would update the CHMP with this wording.
- Susie and David explained that Lochard would provide a schedule of works in order to help with timing of compliance inspections but that timing is uncertain so Lochard would need to update EMAC throughout the duration of activity. EMAC had no issues regarding this.
- Petra raised the evaluation period and timing, explaining that there is some urgency behind receiving an approved CHMP and asked if the 30 day evaluation period would start immediately after lodging the CHMP. Emily responded that ochre would need to lodge the CHMP and wait for EMAC to raise an invoice and that once payment has been received the 30 day evaluation period will commence. Petra mentioned that ochre would need to add the meeting notes into the consultation section of the CHMP prior to lodging it for evaluation. Emily responded that EMAC will also provide a copy of minutes but that their record does not need to be included within the CHMP consultation section.

2.5.3. Participation in Standard and Complex Assessments

The following EMAC field representatives participated in the Standard Assessment conducted on 25 November 2022 and the Complex Assessment carried out on 14-16, 20-23 March, 26-27 April, 17-18 July and 24-25 August 2023:

- Dion Morgan;
- Lee Morgan;
- Phillip Chatfield;

- Jyron Chatfield;
- Hayden Harradine;
- Mundara Clark.

2.5.4. Views of the RAP

No oral history in relation to the activity area was provided by the RAP. The views of the RAP on the CHMP process is reflected in the meeting summaries provided in Section 2.5.2. A copy of the draft management conditions was sent through to the RAP for comment and endorsement on the 27th of September 2023. Feedback from the RAP was provided on the 5th of October 2023 which requested:

- Updates to Figures 2 and 5 to show the “no-go” buffer on the map for VAHR 7420-0063, so it is clear where no ground disturbing works can take place;
- Reinstatement of standard wording in contingency 4 regarding recommencement of work noting that recommencement of the activity would be discussed during the consultation for the unexpected discovery.

3. DESKTOP ASSESSMENT

3.1. Introduction

This section fulfils the CHMP requirements for a Desktop Assessment. It provides contextual geographical, environmental, historical and archaeological information for the activity area and the region surrounding it. The focus of the Desktop Assessment is on placing the activity area in a regional context to inform the expected nature of Aboriginal places in the activity area. This allows a predictive model to be established to inform the rationale behind, and methodology for, the Standard and Complex Assessments (if required), and comparative analysis and significance assessment to be undertaken if Aboriginal places are present in the activity area.

3.2. Environmental Context

3.2.1. Geographic Region

The Aboriginal Heritage Regulations 2018 requires a Desktop Assessment to include 'an identification and determination of the geographic region of which the activity area forms a part that is relevant to the Aboriginal cultural heritage that may be present in the activity area' (Section 61).

The geographic region chosen for this CHMP was a c. 5 km radius from the activity area. The geographic region was selected in this way in order to incorporate a representative sample of the registered Aboriginal places to inform the activity area's Aboriginal cultural heritage potential. This region is considered relevant as it contains geomorphological characteristics and comparable geology and associated soil profiles that are represented in the activity area. The geographic region is depicted in Figure 14, along with an illustration of its geological features in relation to the distribution of registered Aboriginal places.

The following sections provide background information of relevance to the geographic region. Where information is limited on a given topic (i.e. climate, land use history, ethnohistory), data has been drawn from a wider area.

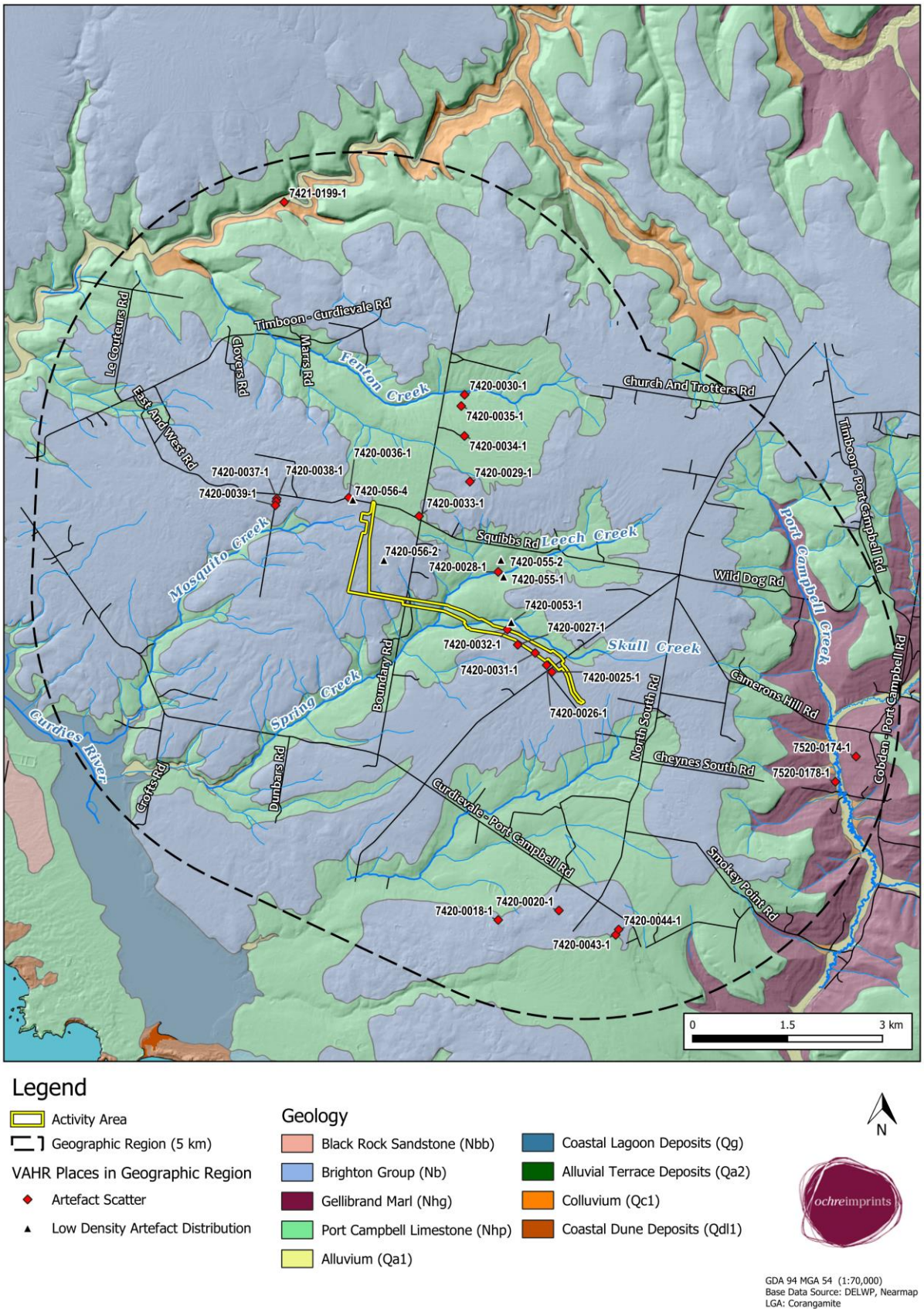


Figure 14: Geographic region showing geology and VAHR places.

3.2.1. Landforms and Underlying Geology

The geographic region is situated on the sedimentary plains (geomorphological unit 6.2) that form part of the wider Western Plains of Victoria (VRO Online). These sedimentary plains are composed largely of marine sands deposited during the retreat of the Pliocene sea that once extended further north. Within the geographic region, the sedimentary plains are further divided into 'dissected plains (Heytesbury)' (geomorphological unit 6.2.2, encompassing the vast bulk of the geographic region) and 'plains with low rises' (geomorphological unit 6.2.4) found around the geographic region's western border. The Curdies River forms the boundary between the two sub units (VRO online).

Dominating the geographic region, the 'dissected plains' feature a pattern of parallel curved tributaries running perpendicular to rivers that drain towards the south-west (VRO online). Soil types associated with this geomorphological unit range from acidic mottled texture contrast soils and gradational soils to some sandy soils with a high organic matter component (VRO online). In the far western part of the geographic region, the undissected sand plains of unit 6.2.4 form a generally flat landscape with gentle low rises (VRO online).

The Western Plains unit generally is characterised by duplex soil types, with a marked texture and colour contrast between topsoil and subsoil deposits (VRO online). This soil is generally described as pale or grey and sandy, overlying concretions of ironstone (commonly referred to as ferruginous gravel or coffee rock, which may be loose or compacted), or clay (VRO online). Following heavy rain periods, these duplex subsoils become saturated and waterlogged, causing erosion of the topsoil by surface water run-off in hilly areas (Cochrane et al. 1995: 50-51).

'Port Campbell Limestone' (**Nhp**), 'Brighton Group' (**Nbh**), and 'Gellibrand Marl' (**Nhg**) are the dominant geological units within the geographic region. Forming part of the 'Heytesbury Group', Port Campbell Limestone, contains marine deposits of Late Oligocene to Late Miocene carbonates (Figure 14; Holdgate *et al* 2003: 300, 307). In coastal areas near Port Campbell, 'the limestone plain has developed many karstic features, particularly sinkholes' (VRO online). Brighton Group deposits are comprised of Miocene to Pliocene aged 'gravel, sand, silt: variably calcareous to ferruginous sandstones and coquinas; marine to nonmarine' (GeoVic online). Gellibrand marl is another coastal formation – a marine deposit of marlstone, siltstone and calcarenite that is Miocene in age (GeoVic online). At the western and eastern extremities of the geographic region are some areas containing younger (Quaternary) alluvial deposits, associated with Curdies River and Port Campbell Creek.

3.2.2. Climate

In its c. 50-60,000 years of human habitation, Australia's climate has undergone a series of fluctuations, and at times quite dramatic changes. These fluctuations have affected sea levels, geomorphological processes, flora and fauna communities and hydrology. While over larger time scales glacial-interglacial cycles dominate broader scale changes, significant decadal to centennial timescale climatic variations occur, in part due to atmospheric, oceanic and terrestrial interactions. These are known to have had a significant impact on vegetation, hydrology etc. – which in turn has been attributed to changes in the archaeological record - but this information has not been systematically collated or validated over larger spatial scales (Mills *et al:* 2013; Williams *et al.* 2010: 831).

During the Pleistocene period, at the time of the last glacial maximum (approximately 21,000-15,000 years BP), temperatures would have been an average of 6-10°C lower than presently experienced (Mulvaney & Kamminga 1999: 115-116). The colder temperatures influenced sea levels and at this time the coast extended much further southward, joining Tasmania to the mainland as part of one larger landmass (Mulvaney & Kamminga 1999). Conditions were notably drier around this time, with less than half of today's annual rainfall falling across the region. This reduced rainfall meant that forested areas were scant across southern Victoria, with the region dominated by grasses (Kershaw 1995: 664).

Between 12,000 and 9,000 years BP, warmer temperatures and increased precipitation encouraged the expansion of eucalypts, and forested areas became more common with the grasses surviving 'as the dominant understorey' (Kershaw 1995: 666). Sea levels also began to rise at this time, separating Tasmania from the mainland. Sea levels in Victoria stabilised around 1.0-1.5 m above today's levels between 7,700-7,400 BP, before reaching current levels approximately 2,000 years BP (Lewis *et al*. 2008: 74; Lewis *et al*. 2013: 128). There is evidence that Port Phillip Bay became an estuarine-marine environment at c. 8,200 BP, although it dried out for a period of time 2,800-1,000 years ago. The latter was likely caused by sediment blocking the channel entrance coupled with high evaporation rates (Nunn & Reid 2016: 18; Holdgate *et al*. 2011: 157, 167-168)

There is evidence for the onset of the El Niño-Southern Oscillation phenomenon c. 6,000 to 5,500 years BP and this may relate to subsequent drier and variable climatic conditions (Mills *et al*. 2013: 8). An analysis of vegetation patterns in the mid Holocene and last glacial maximum found that differences between Mid-Holocene and modern vegetation patterns are comparatively small and reflect changes in moisture availability rather than temperature (Pickett *et al*. 2004: 1381). However, these changes would have nevertheless had an impact on the distribution of subsistence resources utilised by Aboriginal people, and the way they interacted with the landscape. This is supported by an analysis of radiometric dates across

northern and central Australia which identified 'notable declines' in the archaeological record over ca. AD 700 and 1,000 and post-AD 1,500. This decline, measured by a reduced number of radiometric dates at archaeological sites, broadly correlate with transitions of the El Niño-Southern Oscillation (Williams *et al*. 2010: 831).

The current climate of the region is generally described as temperate with warm, dry summers with a mean maximum temperature of 18.5ºC and cool winters with a mean minimum temperature of 7.7ºC. Average annual rainfall in the region is recorded as 782,1 mm (Bureau of Meteorology, May 2022).

3.2.3. Flora and Fauna

The vegetation of the geographic region in the pre-contact period was varied, with the activity area host to vegetation communities such as 'Heathy Woodland' (EVC 48), 'Damp Health Scrubland' (165) and smaller areas of 'Swamp Scrub' (DEWLP NatureKit: May 2022). Damp Heath Scrubland was characterised by shrubland to 3 metres tall located over flat to gently sloping terrain, and typically included species such as Prickly Tea-Tree, Silver Banksia and Scrub Sheoak*,* with occasional emergent eucalypts, including Messmate Stringybark and Swamp Gum (DSE 2004: n.p.). Sedges, rushes and ferns and herbs made up the understorey, with species such as Common Raspwort, Tall Sundew, Austral Grass-tree, Common Bog-sedge and Spreading Rope-rush typically occurring in these areas.

Heathy woodland, on the other hand, was a much more sparsely spread vegetation community, as a 'Eucalypt-dominated low woodland to 10 m tall lacking a secondary tree layer and generally supporting a diverse array of narrow or ericoid-leaved shrubs, except where frequent fire has reduced this to a dense cover of bracken…the ground cover is normally fairly sparse' (DSE 2004: n.p.). Messmate Stringybark is the dominant tree species, with an understory of Prickly Tea Tree, Common Heath, Honey-pots, Austral Grass-tree, Austral Bracken and grasses and sedges etc such as Grey Tussock-grass, Tassel Rope-rush, and Sandhill Sword-sedge (DSE 2004: n.p.).

Also present within the geographic region were areas of 'Herb Rich Foothill Forest' (EVC 23) and Lowland Forest (EVC 16). The herb-rich foothill forested areas would have been characterised by and overstorey of of *Eucalyptus* species (including Messmate Stringybark and Swamp Gum) growing over a small tree and shrub layer, with a dense cover of herbs and grasses (DELWP NatureKit). Lowland open forest areas will have also contained a canopy of *Eucalyptus* species, with heathy understory shrubs below (DELWP NatureKit).

Plants common to the region that were known to constitute an important resource for Aboriginal people included Cumbungi (*Typha sp*), Murnong (*Microseris lanceolata*), Wattles (*Acacia sp*), Grass Lillies (*Caesia sp*), the berries of Muntries (*Kunzea pomifera*) and the

starchy roots of Austral Hollyhock (*Lavatera plebeian*) - available seasonally along the Western Victoria coast (Zola & Gott 1992: 21-22). Black Wattle provided gum that could be eaten, bark that could be used for medicinal purposes and leaves that could be used as soap or in steam baths to treat a variety of illnesses (Zola & Gott 1990: 41, 55). Austral Bracken, found across a range of vegetation communities, was a staple food for local people, who gathered them for their underground stems. Due to their fibrous nature, bracken roots required preparation prior to consumption, and ethnohistorical sources record 'a kind of bread' being made ' of the root of the common fern, roasted in hot ashes, and beaten into paste with a stone' (Zola & Gott 1990: 37). Native tussock grass fibres were also used for string, nets, baskets and bags (Zola and Gott 1990: 58, 12).

The current flora of the geographic region includes introduced pasture grasses in paddocks which are generally cleared of mature native vegetation. Some mature native trees may be present as single trees within cleared paddocks and remnant stands of vegetation, including regenerated species, are present in road reserves and near waterways.

Prior to European settlement, faunal resources within the geographic region would have included mammals such as *Macropus sp.* (kangaroo and wallaby) *Phalanger sp.* (possum) and many waterfowl, such as ducks, egrets and swan. Freshwater fish were present in local creeks and waterways, as well as sinkholes located in the western margin of the geographic region.

3.3. Post-Contact Land Use History

The post-contact land use history of the activity area has resulted in a degree of modification to its character over time, and almost certainly will have had an impact on its pre-contact archaeological record. This section discusses the history of the activity area and its surrounds through a review of the history of the local region as well as a review of historical documents, maps, plans and aerial photography. This review is undertaken in order to predict the type of modifications that are likely to have occurred within the activity area, which may have had an impact on its Aboriginal archaeological record.

The historical overview provides a broad outline of the post-contact history of the local region, while the land use history proper discusses historical use of the activity area specifically.

Historical Overview

The first recorded European activity in Western Victoria was that of sealers and whalers in the beginning of the nineteenth century. The need for a protected anchorage with easy access to fresh water and fuel meant that this activity was restricted to areas such as Portland Bay and Port Fairy (McKenzie 1998: 29). Sealing vessels are recorded to have visited Port Fairy

seasonally from 1810 and by the 1830s permanent whaling stations had been established (Anderson 1998: 33). It is probable that during this period sealers and whalers also visited Port Campbell, to the south of the study area, although there is only one record of such a visit in 1843 by whaler Alexander Campbell (Fletcher 1985: 249).

The earliest European settlers in the Western District were Edward and James Henty who arrived in the Portland Bay area in 1834, where they successfully pursued whaling, agriculture and pastoral activities. Settlement of the Western District was sporadic and slow until after 1836 when Major Mitchell's account of his journey and the 'good inland plains' in the district were published (Kiddle 1962: 31-44). By the early 1840s squatters had established large sheep and cattle runs throughout most of the Western District. However, the inland areas near the coast from Warrnambool to Otway remained largely un-surveyed and unoccupied until the 1860s (Spreadborough & Anderson 1983: xii).

In 1838 Hoddle's assistant surveyor George Smythe was instructed to survey the coastline of Victoria (Chappel 1996: 5, 19). In 1847 accompanied by four assigned servants Smythe surveyed and mapped the coastline from the Hopkins River to Moonlight Head. He described the land around Port Campbell as open heath with patches of stunted grasstrees and with good grass growing in the valleys. The only stations or runs recorded in the district were Skip Jack Downs and Murray's sheep station located near Curdies River. The large squatter stations of Buckley's Creek, Glenample and Sherbrooke had been established in the Heytesbury district by 1849 (Spreadborough & Anderson 1983: 89, 102).

In 1866 H. E. Ward produced a map of the Heytesbury County for the Crown Lands Office recording that much of the land in the district remained un-surveyed and held by the Crown (Ward 1866). However, by 1881 most of the parish of Paaratte was surveyed, divided into allotments and sold under the 1869 *Land Act* (Thompson 1881). The 1869 *Land Act* allowed selectors to hold the land under license for three years before purchase. However, the land could only be purchased provided improvements such as fencing and cultivation conditions were met (Cabena et al*.* 1989: 3).

During the economic depression of the early 1880s many selectors in the Heytesbury district were unable to maintain their payments for land leases and licenses. This resulted in some allotments reverting back to the Crown to be reallocated to another applicant (Fletcher 1985: 135-136). In 1886 the settlers in the district faced further financial difficulties when forest fires razed 20 homesteads to the ground. Losses were so severe that the newspapers *Melbourne Argus*, *Melbourne Age*, *Ballarat Star* and *Hamiliton Spectator* ran appeals to help the worst affected selectors in the district remain on the land (Fletcher 1985: 293).

Throughout the 1860s-1870s as selectors cleared the land pastoral activities shifted from a focus on sheep to cattle. The importance of cattle to the local economy by the 1890s is evident in the number of creameries and cheese and butter factories established in the district. A butter factory was established in Cobden in 1888, and in 1891 creameries were operating at Timboon, Port Campbell and Scotts Creek (Fletcher 1985: 100-117, 146). As the Heytesbury area was heavily timbered in the 1840s-1860s timber milling formed another important industry in the early years of settlement. Small mills were originally built close to selections to produce timber for homestead building. By the 1890s large timber mills were established at Timboon, Scotts Creek, Port Campbell and Paaratte, ushering in a sustained industry, whereby sawmills around Timboon were 'shown on plans of the area from the 1940s' (Westbrooke & Tonkin 2013: 130). The opening of the railway line in 1892 from Camperdown to Curdies River facilitated the development of localised industries. Some mills, such as Goldstraw's at Paaratte and Morgan's at Scott Creek, lay down tram tracks from their mills to the rail line (Fletcher 1985: 92-93).

The geographic region has continued to be rural in character throughout the historical period, consisting largely of farming land, and containing no nearby 'town centre'. The shire of Corangamite, within which the activity area is located, 'is a large rural municipality in south-western Victoria that was formed in 1994 through the amalgamation of the Town of Camperdown, the Shire of Hampden, most of the Shire of Heytesbury, the Heytesbury Settlement district of the Shire of Otway, and small parts of the Shires of Mortlake and Warrnnambool' (Westbrooke & Tonkin 2013: 62).

Activity Area Land Use History

The earliest available plans to show the activity area in any detail are plans of the early subdivision of the Parishes of Narrawaturk and Paaratte, c. 1887. Figure 15 shows these two plans stitched together, with the indicative location of the activity area overlain. At this time, the activity area fell within parts of Portions 26 and 27 of the Parish of Narrawaturk and extended east into Portion 1 of the Parish of Paaratte. At this early stage, a road had been surveyed in that followed the approximate later alignment of Timboon-Peterborough and Boundary Roads in the east. The alignment of East and West Road was not yet laid out on this plan, although what was potentially a road reserve bisected the activity area east-west at the border of Portion 26 and 27, Parish of Narrawaturk. Within Portion 27, a tributary or extension of what would later be known as Mosquito Creek also extended through the activity area.

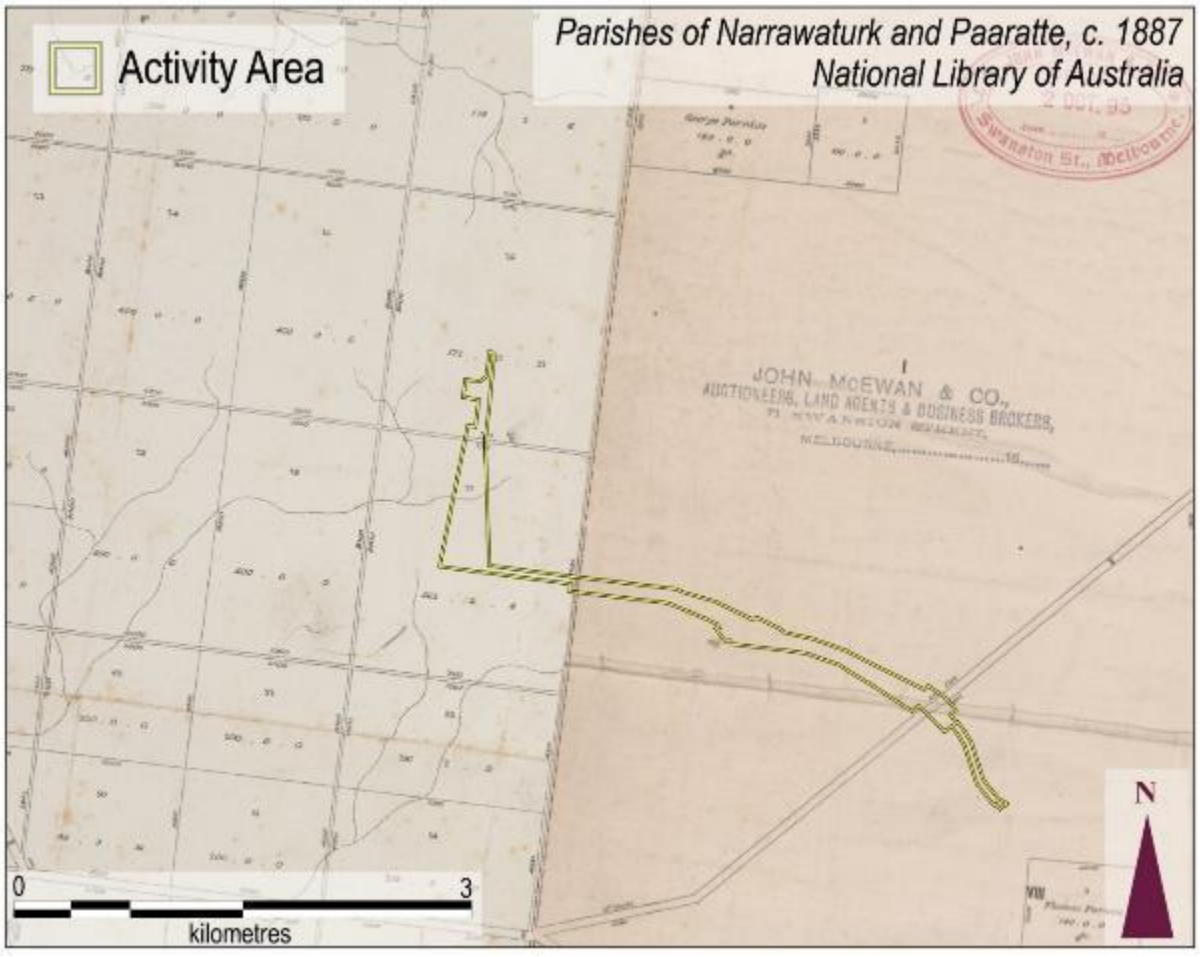


Figure 15: Stitched Parish Plans of Narrawaturk and Paaratte, c. 1887, with indicative location of the activity area overlain. Image source NLA.

An annotated plan of the Parish of Narrawaturk c. 1932 (Figure 16) shows the western portion of the activity area from the early-mid twentieth century. The original subdivision of the parish has been altered by this stage, and the western part of the activity area now sits over portions 25, 26 and 31 of the Parish of Narrawaturk. By this time, the alignment of East and West Road has been surveyed in, and divides portion 25 in the north from portion 26 in the south. An unnamed road or road reserve is present along the north-western activity area boundary, on the same alignment as one exists today. Boundary Road is present at this time, on an earlier alignment, which deviates somewhat from the straight line present in the vicinity of the activity area today.

Portion 25 is recorded as having changed hands once in the early period – originally purchased by R.W. Brown, then sold to J. Watts on 27 May 1938. Portion 26 is originally attributed to A.F.Howell, although this name has been crossed out on the plan – perhaps reflective of the difficulties faced by selectors during the depression of the 19th Century, when payments on a number of properties defaulted and the allotments reverted 'back to the Crown' to be reallocated to somebody else (Fletcher 1985: 135-136). Portion 31 was originally held

by E. L. Dwyer, then M. I. Weibye and later H. W. Weibye. An undated annotation indicates the presence of a ‘natural gas pipeline’ bisecting the activity area in the north (its alignment highlighted in red).

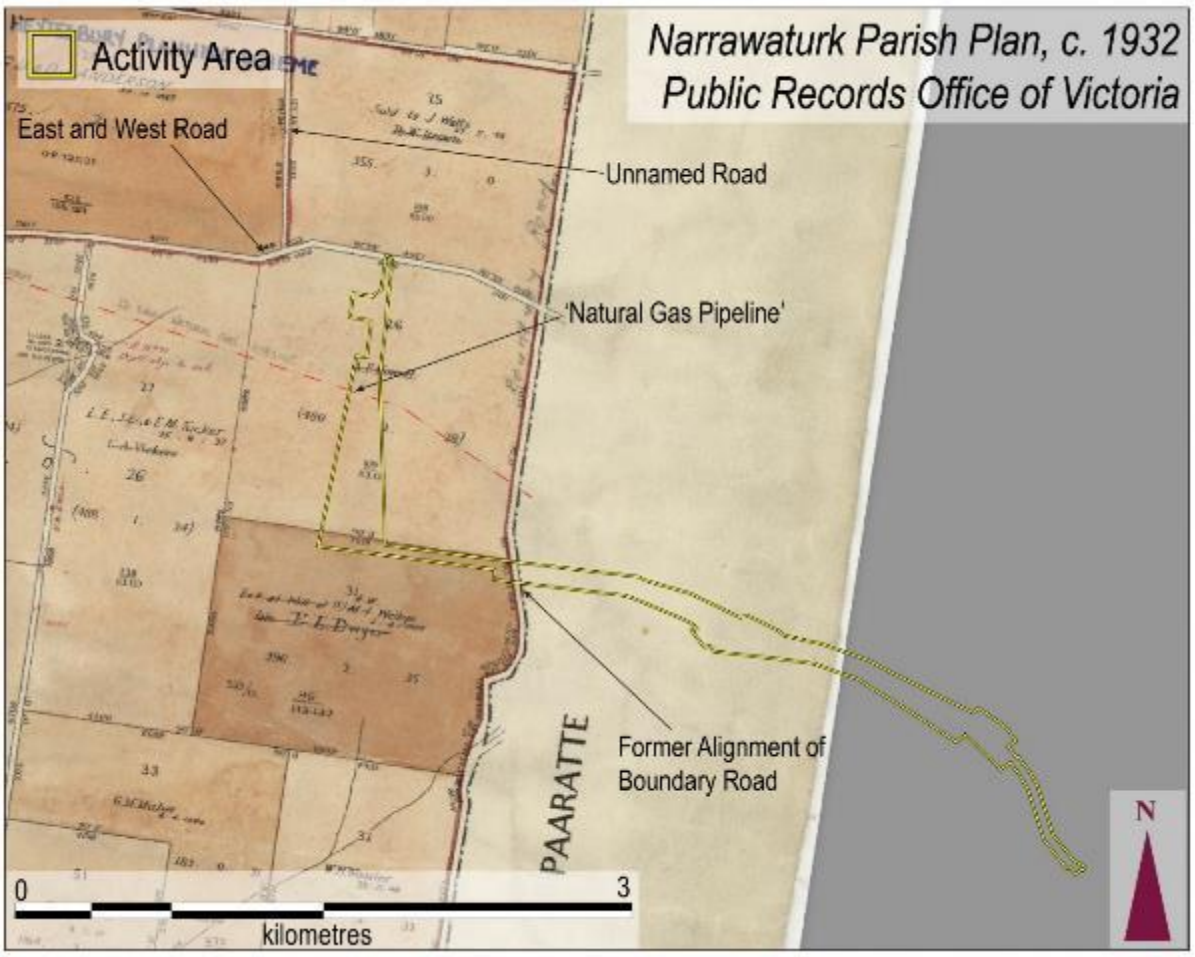


Figure 16: Parish Plan, Narrawaturk, c. 1932, with activity area overlain. Image source PROV.

A plan of the Parish of Paaratte, c. 1936 (Figure 17) shows the eastern part of the activity area at this time. Paaratte parish has been similarly re-subdivided by this stage, and the activity area now passes through allotments 27 and 26 of Portion 1 and allotment 2 of Portion 8 of the Parish. Original purchasers of these allotments included E. Brown (lot 27), R. G. Power (lot 26) and J. Rylance (lot 2). As this plan is not annotated, no further information about the early land ownership is provided. Mirroring the Narrawaturk plan, this map shows Boundary Road on a slightly different alignment than today, with the road itself serving as the parish boundary.

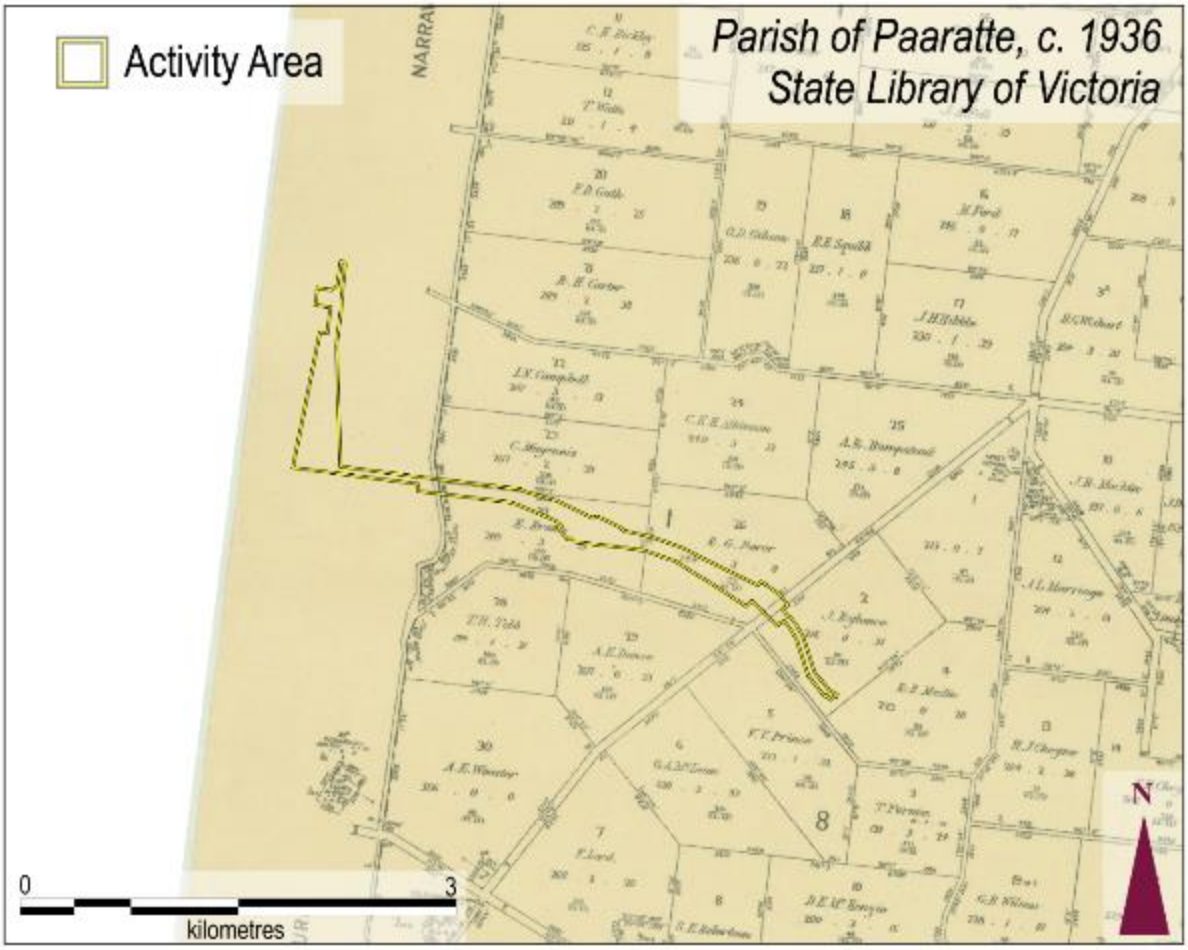


Figure 17: Parish Plan, Paaratte, c. 1936, with activity area overlain. Image source SLV.

A topographic map of the Port Campbell region c. 1942 (Figure 18) shows the existence of East and West Road, Boundary Road and Timboon-Peterborough Road in the activity area by this stage. The north western part of the activity area to Boundary Road is not shown to contain any built infrastructure apart from the roads themselves. Most of this part of the activity area is depicted as containing 'low scrub', with the section closest to Boundary Road containing 'camouflage cover or medium timber'. Immediately east of, and fronting Boundary Road, a house is mapped. This is the only built infrastructure depicted in the eastern part of the activity area apart from roads. Most of this section of the activity area does not display any vegetation of note, except for a section of heavily wooded ground in the approximate centre.

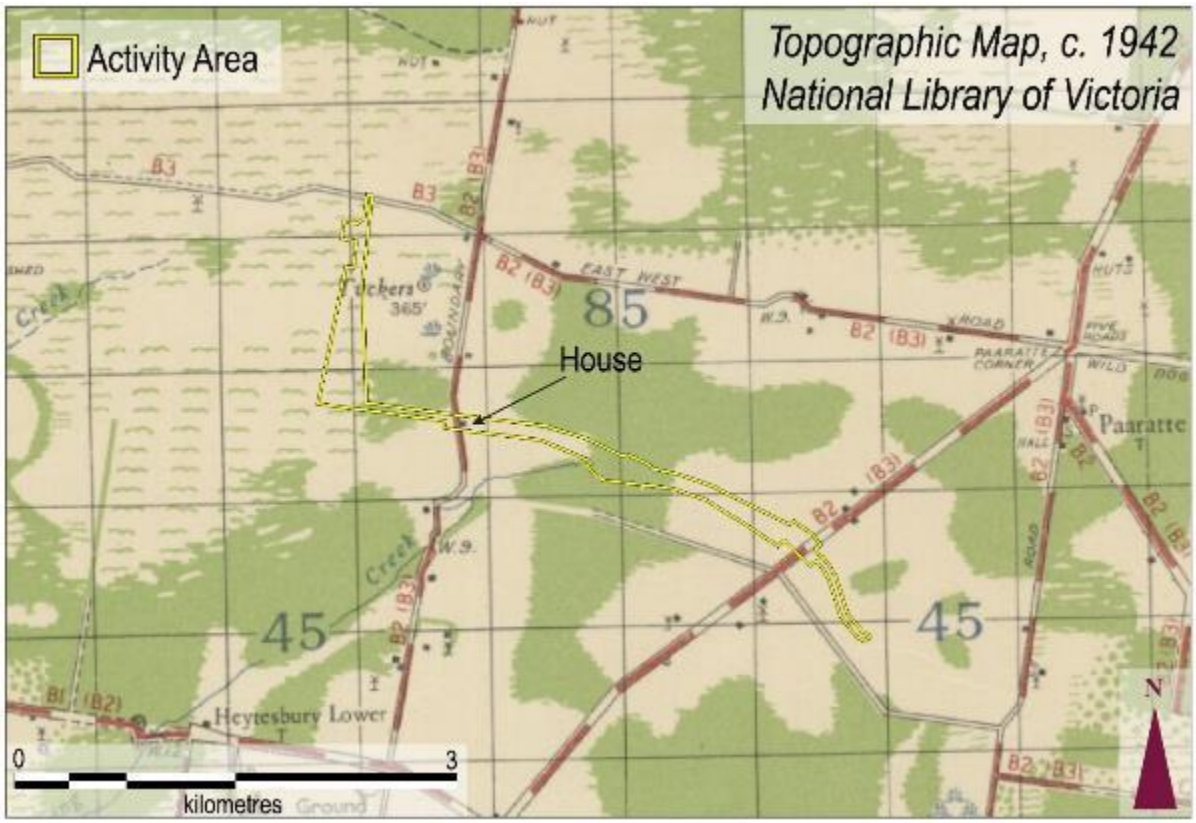


Figure 18: Topographic map c. 1942, with activity area overlain. Image source NLA.

An historical aerial photograph of the activity area c. 1966 (Figure 19) shows the activity area as it was in the mid twentieth century, with insets A through E showing parts of the area in more detail. The photograph shows the activity area serving as farming land, divided into a number of fenced paddocks and bisected by a roads and creeklines. Inset A, showing the northernmost part of the activity area, shows different vegetation across different paddocks, with recent ploughing indicated in some areas, and possible cropping in others. Windrow plantings are present in places, and East and West Road bisects the activity area on its current alignment. Stained ground in the south provides evidence of surface or shallow subsurface waterlogging.

Inset B displays more evidence of waterlogged ground, and several paddock-dividing fences are visible in this section. A formerly cultivated area is evident in Inset C, as is a potential house site on the eastern side of Boundary Road, as well as bisecting fence and creeklines. Boundary Road crosses the activity area at this time, on the alignment depicted in the earlier Parish Plans (Figure 16Figure 17). Inset D shows another creekline and fence line running through this part of the activity area, and finally, Inset E indicates the presence of three fence lines as well as a section of the Timboon-Peterborough Road. No other historical infrastructure is visible in the activity area at this time.

An aerial photograph c. 1975 (Figure 20) shows the activity area looking much the same, with the exception of the presence of dams or soaks in the northern part of the activity area, and a windrow planting in the south east, on the western side of Timboon-Peterborough Road. A linear stretch of discoloured earth in the north indicates the potential presence of a gas pipeline in the approximate location that such a feature was mapped on Figure 20. The area of discoloured ground has been highlighted with a dashed red line.

A contemporary aerial photograph of the activity area (Figure 21) shows an additional unsealed road extending through the activity area west of Boundary Road, which is now present on its current alignment. At the eastern end of the activity area is an area of heavily modified ground, containing buildings, parking and other infrastructure associated with the North Paaratte Production Station.

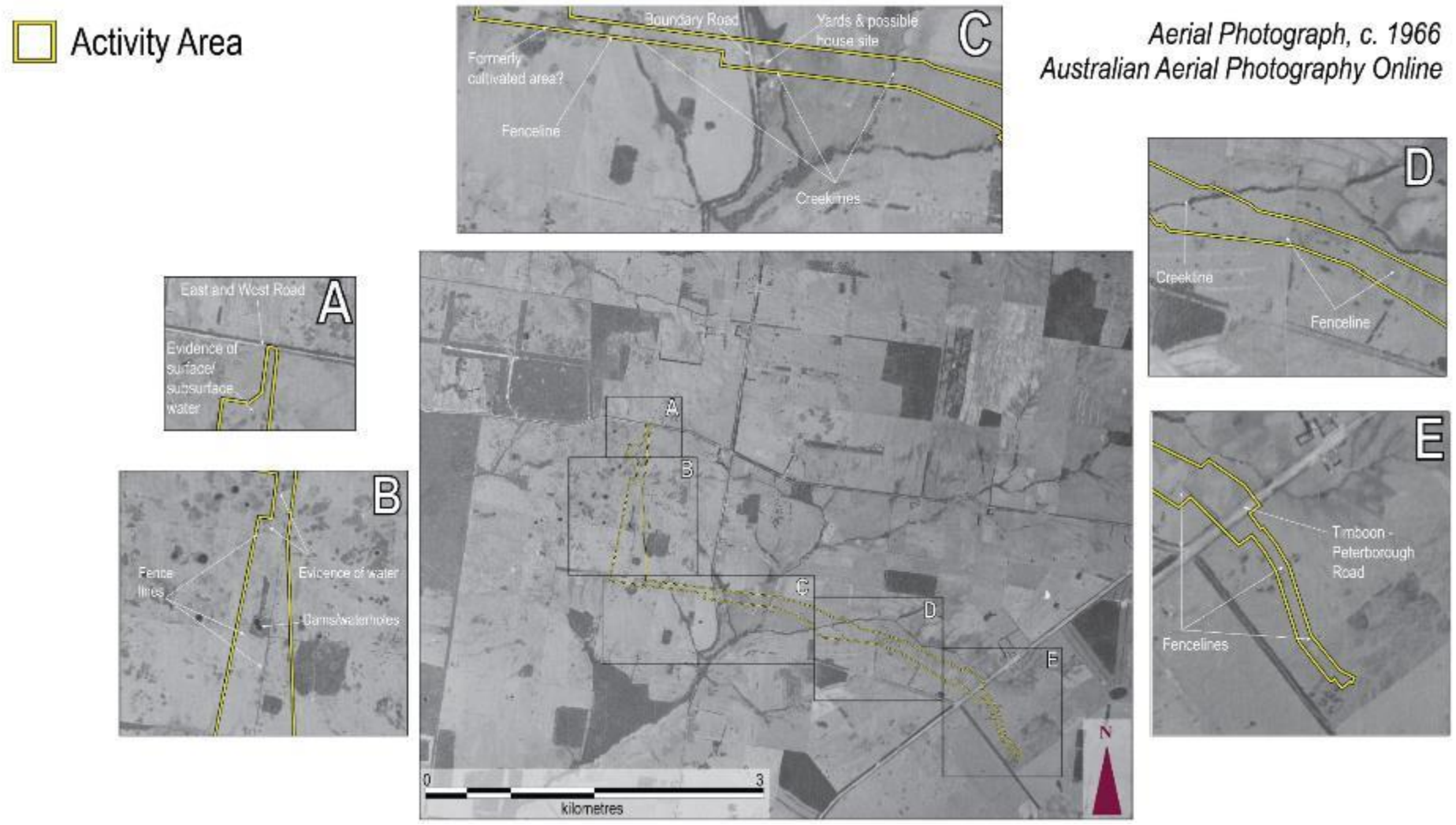


Figure 19: Aerial photograph of the activity area c. 1966. Image source AAPO.

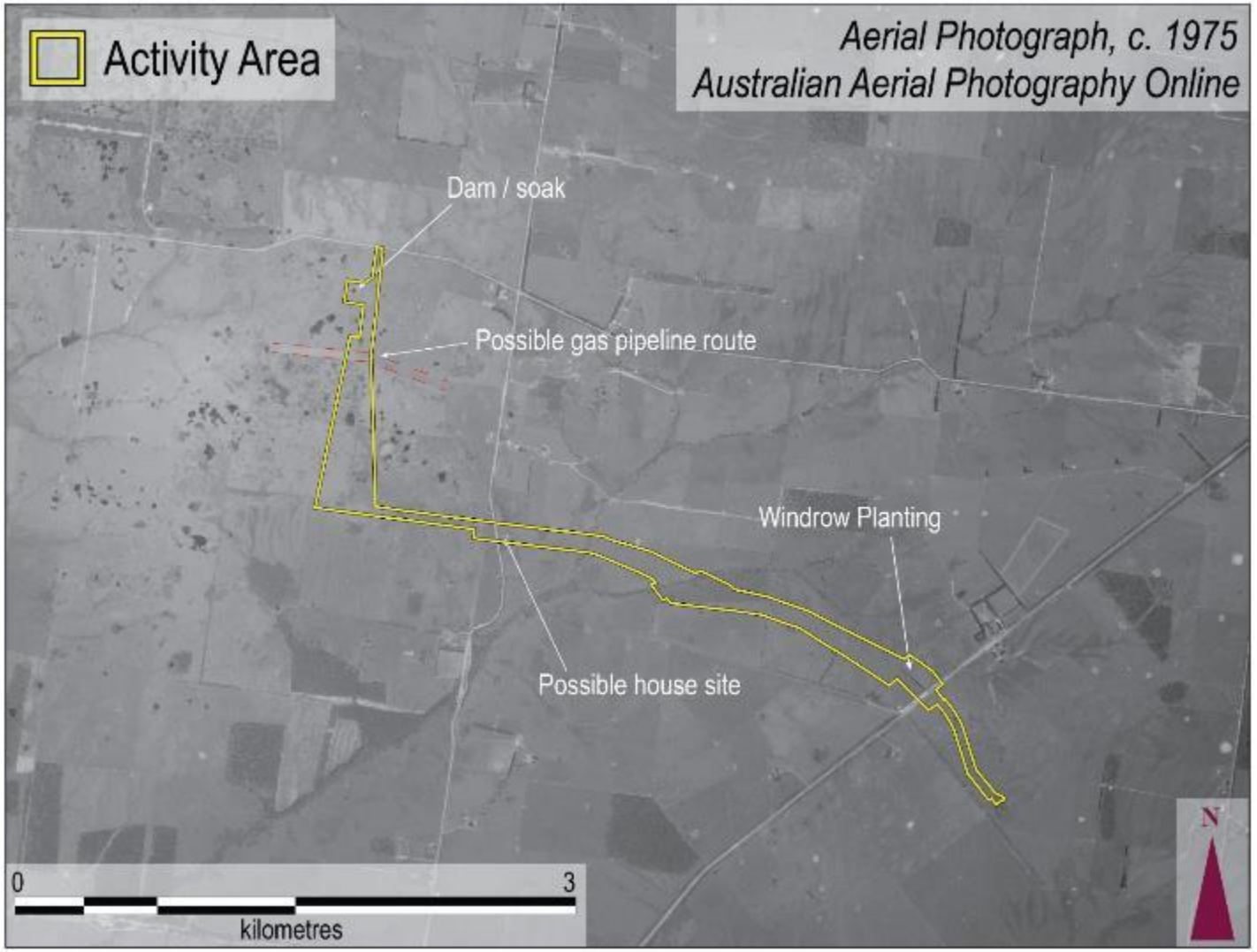


Figure 20: Aerial photograph c. 1975, with activity area overlain. Image source AAPO.

Figure 21: Contemporary aerial photograph, with activity area overlain. Image source Google Earth.

The land use history shows that the bulk of the activity area has been subject to farming activities in the past, with a small number of roads bisecting small parts of the activity area, one historical house formerly occupying land adjacent to one of these roads, and part of a gas pipeline and gas plant present at two discrete locations. Historical land use practices which may have caused harm to Aboriginal cultural heritage present in the activity area include impacts associated with pastoral and agricultural use of the property such as land clearing and fencing, historical plantings, the construction of minor farm infrastructure and management of drainage, cropping and stock trampling, as well as more recent intensive impacts such as the construction of two licensed gas pipelines (APA western transmission line and Beach Energy HBWS pipeline) and installation of an underground high voltage cable at the Timboon West windfarm. In discrete parts of the activity area, a residential premises may have been present in the past, and a gas production plant currently occupies land in the south east. The creation and maintenance of roadways in the activity area – including East and West Road, Boundary Road and Timboon-Peterborough Road, will have caused disturbance to soils within road reserves.

3.4. Ethnohistory

3.4.1. Introduction

The following section reviews the available ethnohistorical data relevant to the Aboriginal people who occupied the wider region at the time of European contact. This type of review aims to identify ways in which Aboriginal people interacted with, and may have left archaeologically detectable traces on, their environment. Although the ethnohistorical record has the potential to provide useful information about Aboriginal society at contact, it should be noted that the information it does provide is of necessity incomplete, has no significant time-depth, and describes a society that even in the earliest observations had already undergone an unknown degree of social change.

It should also be noted that not all sources of information are equal, that information has been gathered from both trained and untrained observers, and that all documentation consulted here has been subject to a degree of bias. The ethnohistorical record presents a European perspective of Aboriginal society at a time when traditional lifestyles were being severely disrupted, and conclusions drawn from this record should be treated with the appropriate level of caution.

A wide variation exists in the nomenclature of Aboriginal clans. In this ethnography, quotes retain the original authors spelling; however, commonly used spelling is generally used throughout (with common variations included in brackets).

The lives of Aboriginal groups in the wider Western District were severely disrupted by the establishment and expansion of European settlement. As a result no specific information is available regarding the pre-contact lifestyle of Aboriginal people in the geographic region. A full ethnographic search was outside the scope of this assessment. The following section broadly summarises major synthesis previously undertaken on Aboriginal associations within the wider area in the pre-contact and post-contact period. No Aboriginal oral history has been gathered during this research.

3.4.2. Pre-contact History

The basic unit of Aboriginal social organisation in Victoria was the clan: a group based on kinship through the male line with a shared historical, religious and genealogical identity (Barwick 1984: 105-6). The clan was a land-owning unit whose territory was defined by ritual and economic responsibilities (Barwick 1984: 106). Groups of neighbouring clans speaking the same dialect and sharing political and economic interests identified themselves by a language name. In many cases this name used the suffix *(w)urrung*, meaning 'mouth or way of speaking' (Barwick 1984: 105).

Clans from the *Girai wurrung* language group are thought to have occupied land in the geographical region at the time of contact (Clark 1990: 208-209). The *Girai wurrung* language group occupied the area between the Gellibrand River and the Hopkins River, extending inland as far as Mt Hamilton. Within the *Girai wurrung* language area, two clans have been identified by Clark (1990: 208) as having occupied land in proximity to the geographical region:

- The *Ngaragurd gundidj* who occupied land east of the Curdies River 'to the Port Campbell Creek' (Clark 1990: 217); and
- The *Baradh gundidj* clan who occupied the area around the mouth of the Curdies River.

Before the arrival of Europeans, the *Girai wurrung* lived a hunter-gatherer lifestyle, moving from one locality to another to make use of seasonal resources, trading opportunities and to meet ritual and kinship obligations. *Girai wurrung* shared good relations with the neighbouring *Dhauwurd wurrung* (their immediate neighbours to the west), *Djab wurrung* (to the north west) and *Wada wurrung* (to the north east). They had regular gatherings with clans from these groups at Lake Bolac and Mirraiwuae Swamp (near Hexham) to harvest eels, hunt and conduct other business (Clark 1990: 192).

Ethnohistorical observations of substantial dwellings and 'villages' (Dawson 1881: 11; Presland 1977: 36, 38, 73, 85) has led some prehistorians to suggest that the Aboriginal people of the Western Plains lived a more settled life than those in other areas of south east Australia. These observations were, however, generally of unoccupied clusters of structures,

meaning that there is little information available regarding either the lengths of occupation or of the population of these dwellings or clusters of dwellings.

The diet of the Western Plains Aboriginal people consisted of a wide range of mammals, fish, birds, plant foods and fungi (Dawson 1881: 18-22). Ethnohistorical records suggest the daisy yam was a staple plant food of the Western Plains Aboriginal people. The daisy yam was available year-round, although less palatable in early winter (Gott 1983: 6-8, 10). Dawson (1881: 21) refers to a gum resembling honey which was gathered and used by Aboriginal people near the Hopkins River.

Many accounts of subsistence strategies in the wider region refer to the seasonal use of eels by Aboriginal people. Eels were caught by spearing, fishing and using traps (Smyth 1878: vol II 388). Stone and stick barriers, constructed across drainage lines were used to channel the eels through a narrow opening over which baskets were often placed to catch the eels. The most notable observations of this were made by Robinson, Chief Protector of the Aborigines for the Aboriginal Protectorate, in his 1841 journey through the Western District (Presland 1977). In April of that year he crossed a creek near the Hopkins River and described an eel trap as follows (Presland 1977: 49):

> the natives said it was made by black fellows for catching eels when the big water came and was by them called *Yere.roc*. He said they got plenty eels and then showed us how they did it by biting their heads and throwing them on shore. This weir was made of stout sticks, from 2-3 inches thick drove in to the ground and vertically fixed, and other sticks interlaced in a horizontal manner. A hole is left in the centre and a long eel pot made of basket or matting is placed before it and into it the eels gather and are thus taken.

3.4.3. Post-contact History

The advent of European colonisation had a profound effect upon the population of Aboriginal people. A combination of disease, depletion of traditional food sources and conflict over access to traditional land caused the decline of the Aboriginal population in the wider Western Plains region (see Critchett 1992: Chapter 1; Clark 1990: 33-53; Kenyon 1928: 144). Aboriginal people were forced off their traditional lands with many squatters prohibiting them access to their runs. The Aboriginal people of the region were known to actively resist European settlement of their land and violence between Aboriginal groups and European pastoralists was common (Clark 1990: 33-34, 153-155).

By the 1850s the Aboriginal population of the district was greatly reduced. In 1858 John Allan, a local squatter, estimated that the Aboriginal population in the Heytesbury District was reduced by 75% within ten years. Allan reported that influenza and ‘consumption of the lungs’ was the major cause of mortality (Clark 1990: 197). The total Aboriginal population of south west Victoria around this time had decreased from 727 in 1863 to 236 in 1877. These figures

show a greater decrease than the overall loss of 60% of the Victorian Aboriginal population during these 14 years. It should not be forgotten that the Aboriginal population of Victoria in 1863 was less than 2,000 (or 13%) of the estimated pre-European contact Aboriginal population (Barwick 1971: 298, 288).

The Government struggled with how to protect both Aboriginal people and European settlers' interests. Protectorates, reserves and missions were established to provide bases for displaced Aboriginal communities (Caldere & Gott 1991: 2-5). Four assistant protectors, under the direction of George Augustus Robinson, were appointed in 1839 to look after the welfare of the Aboriginal people. C. W. Sievwright was allocated the Western District and the entire *Girai wurrung* territory came under his jurisdiction (Clark 1990: 194). Sievwright established a protectorate at Lake Terang in 1841. In 1842 the protectorate station moved to Mount Rouse where Sievwright was replaced by Dr John Watton. The Protectorate system was not considered effective and was abolished by the Legislative Council in 1849. Aboriginal people in search of food and other basic items began living on the fringes of towns, such as Warrnambool where government rations were available from 1860 onwards.

The remaining Aboriginal populations were encouraged to move onto missions and reserves and Framlingham Aboriginal Mission, north of Warrnambool, was opened in 1865 (Clark 1990: 194-200). Some people remained on or near their traditional lands supplementing their resources with rations obtained by working for local settlers. In 1858 the squatter John Allan reported to the Legislative Council Select Committee that the Aboriginal people remaining in the Heytesbury District supported themselves by fishing, hunting and working on local farms. He observed that while the men worked on the farms, the women and children remained in the forest. Allan recorded that at this time the Heytesbury Aboriginal population consisted of nine men, three women and six children. He observed that their customs did not appear to include tattooing or scarification and that traditional garments made of kangaroo and possum skins were worn (Clark 1990: 197). By the 1877 census the only recorded Aboriginal people who identified with the *Girai wurrung* language area were those who resided at Framlingham Mission (Clark 1990: 203).

3.5. Search of The Victorian Aboriginal Heritage Register

A review of the Victorian Aboriginal Heritage Register (VAHR) maintained by FPSR was undertaken on 23 May 2022 and again on 20 August 2023. A total of 26 previously registered Aboriginal places occur within the geographic region and these are summarized in Table 3. One previously registered Aboriginal place is located within the activity area itself (VAHR 7420-0031, an isolated artefact recorded as an artefact scatter), and a further seven Aboriginal

places (VAHR 7420-0025, -0026, -0027, -0032, -0036, -0053 and -0056), all recorded as either artefact scatters or LDADs, were found to be located within 200 m of its boundary.

The distribution of these Aboriginal places is shown in Figure 14.

The frequency of Aboriginal place components within the geographic region is as follows:

- Artefact Scatters (n=22): artefact scatters are locations where stone artefacts and other cultural material (such as hearth stones, ochre, charcoal and bone) are present on the ground surface and/or in subsurface deposits.
- Low density artefact distribution: (n=3) LDADs are locations where stone artefacts occur at a density of less than 10 artefacts per 10 square meters and are present on the ground surface and/or in subsurface deposits;
- Object Collections (n=1): The object collection in the geographic region consists of stone artefacts collected by a landowner from his property over a number of years. The artefacts are housed on the property from which the artefacts derive.[3]

Table 3: Aboriginal places recorded in the geographic region. Places within 50 m of the activity area are highlighted.

VAHR No	Place Type	Place Contents	Surface / Subsurface	Place Context
7420-0018	Artefact Scatter	11 x flaked stone artefacts of marine chert, quartz and quartzite.	Surface	Scatter located over an area of 150 m amongst farm road surfacing material. Material source reportedly a low hill some 400 m east of the eastern end of the road (Brown 1995: 14). Site recorded from description, not visited.
7420-0020	Artefact Scatter	1 quartz flaked stone artefact.	Surface	Isolated artefact identified on the edge of a dam located approximately 20 m from a proposed gas transmission pipeline. Approximately 300 m from a tributary of Squirrel Creek on flat land.
7420-0022	Object Collection	Collection of silcrete, flint, quartzite flaked stone artefacts and a greenstone axe blank.	Surface	Majority of artefacts found on McKenzie property when ploughing exposed them, with the exception of an axe blank which was found elsewhere. Collection held in a private home.
7420-0025	Artefact Scatter	12 x quartz flaked stone artefacts and other (uncounted) fine grained stone flakes	Surface/Subsurface	Artefact scatter located over a relatively flat 50 x 15 m area roughly 350 m south of Skull Creek, in light grey sand to a depth of 50 mm. Site identified following grading of pipeline 'right of way' and heavy rainfall. Site recorded as 'totally destroyed or removed'. Place inspection undertaken in 2014 did not identify any further material associated with this site.

[3] Object Collections that derive from registered Aboriginal places in the geographic region (via subsurface testing or salvage), and that are stored outside of the geographic region, are excluded from this figure.

VAHR No	Place Type	Place Contents	Surface / Subsurface	Place Context
7420-0026	Artefact Scatter	8 x flaked stone artefacts of quartz and marine chert.	Surface/Subsurface.	Artefact scatter located over a relatively flat 50 x 15 m area roughly 320 m south of Skull Creek, in light grey sand to a depth of 50 mm. Site identified during pipeline construction. Site recorded as 'totally destroyed or removed'. Place inspection undertaken in 2014 did not identify any further material associated with this site.
7420-0027	Artefact Scatter	6 x quartz flaked stone artefacts.	Surface/Subsurface	Artefact scatter located over a relatively flat 50 x 15 m area roughly 240 m south of Skull Creek, in light grey sand to a depth of 50 mm. Site identified following grading of pipeline 'right of way'. Site, which was located approximately 40 m south of the activity area, recorded as 'totally destroyed or removed'.
7420-0028	Artefact Scatter	7x quartz flaked stone artefacts.	Surface/subsurface	Artefact scatter located on either side of Leech Creek, over a 200 x 15 m area, in light grey sand to a depth of 100 mm. Site identified following grading of pipeline 'right of way'. Site recorded as 'totally destroyed or removed'.
7420-0029	Artefact Scatter	3 x quartz flaked stone artefacts.	Subsurface.	Subsurface scatter identified during monitoring of a 25 x 15m area 'downhill from the sand deposit on the ridge separating Leech Creek and Fenton Creek. Artefacts considered to be underrepresented due to fine dust across the site.
7420-0030	Artefact Scatter	5 x flaked stone artefacts of coastal flint and quartz.	Surface/ subsurface.	Scatter located within dark clay soils on the southern banks of Fenton Creek. Stone artefacts identified during monitoring of pipeline construction.
7420-0031	Artefact Scatter	1 x marine chert flake.	Surface	Isolated artefact identified within the activity area. Found on flat land roughly 260 m south of Skull Creek, following grading of pipeline right-of-way. 'Artefact collected and lodged with Framlingham Aboriginal Trust' (site card data).
7420-0032	Artefact Scatter	1 x quartz flaked stone artefact.	Surface.	Site located on slope overlooking Skull Creek, approximately 140 m to the north, following grading of pipeline right-of-way. 'Artefact collected and lodged with Framlingham Aboriginal Trust' (site card data).
7420-0033	Artefact Scatter	1 x quartz flaked stone artefact.	Surface	Surface find on previously and recently graded pipeline easement. Isolated artefact collected and lodged with Framlingham Aboriginal Trust in 1999. A place inspection in 2014 failed to locate any evidence of cultural material.
7420-0034	Artefact Scatter	1 x quartzite flaked stone artefact.	Subsurface	Subsurface find exposed by a grader in sandy-grey soil. Located on a pipeline 'right of way'.
7420-0035	Artefact Scatter	1 x quartz flaked stone artefact.	Subsurface.	Artefact recorded in shallow subsurface soils during the grading for pipeline construction. Site located on sloping ground approximately 220 m from Fenton Creek.

VAHR No	Place Type	Place Contents	Surface / Subsurface	Place Context
7420-0036	Artefact Scatter	1 x quartz flaked stone artefact.	Surface	Surface find on side of road in sandy soil within a road reserve, exposed by rabbit digging.
7420-0037	Artefact Scatter	1 x quartzite flaked stone artefact.	Surface	Surface find. One recorded and other unrecorded artefacts exposed on a track and in road reserve.
7420-0038	Artefact Scatter	1 x flint flaked stone artefact.	Surface	Surface find on vehicle track. Other artefacts present in surrounding area which was once forest and is now largely cleared.
7420-0039	Artefact Scatter	1 x quartz flaked stone artefact.	Surface.	Surface find on vehicle track. Other artefacts present in surrounding area, individually recorded – constitutes a very low density artefact scatter overall.
7420-0043	Artefact Scatter	1 x flint flaked stone artefact	Surface	Isolated surface find located on a vehicle track. Site located on flat land approximately 450 m from a tributary of Port Campbell Creek.
7420-0044	Artefact Scatter	2 x flint flaked stone artefacts.	Surface	Isolated surface finds located on a vehicle track. Site located on flat land approximately 450 m from a tributary of Port Campbell Creek.
7420-0053	LDAD	1 x flint flaked stone artefact.	Subsurface.	Artefact recovered from depth of 150 mm, within 15 m of Skull Creek.
7420-0055	LDAD	2 x quartz flaked stone artefacts	Subsurface	Artefacts recovered from depths of 100 mm at two separate locations, between 50-200 m from Leech Creek.
7420-0056	LDAD	3 x silcrete flaked stone artefacts.	Subsurface.	Subsurface artefacts recovered from two shovel test pits at a depth of 400mm, on a plain landform.
7421-0199	Artefact Scatter	3 x flaked stone artefacts of quartz and silcrete.	Surface/ Subsurface	Site located on a floodplain landform approximately 200 m from Curdies River. Artefacts recovered from soils between 250-430 mm depth.
7520-0174	Artefact Scatter	1 x silcrete flaked stone artefact.	Surface	Located 300 m east of Port Campbell Creek on a steep slope. Place identified within existing pipeline easement and is not considered *in situ*.
7520-0178	Artefact Scatter	5 x quartz flaked stone artefacts.	Subsurface	Located on a slope, 65 m from Port Campbell Creek. Place identified during subsurface testing for gas pipeline alignment. Further information not available.

It should be noted that the known distribution of registered Aboriginal places within the geographic region is not an accurate representation of the actual distribution of Aboriginal places. Factors such as the quantity and type of cultural heritage research that has been undertaken, and fieldwork conditions, have influenced the result. Nevertheless, the following patterns are evident in the distribution of Aboriginal places within the geographic region:

- Aboriginal places within the geographic region are characterised by stone artefacts registered as artefact scatters and LDADs (including a stone artefact scatter recorded as an object collection, whose contents are held in a private home);

- The Aboriginal places are characterised by uniformly low density, diffuse occurrences of 1-12 stone artefacts which, if recorded today, would be registered as LDADs;
- Artefact scatters and LDADs are present in both surface and subsurface contexts, with half of these places (n=13) displaying a recorded subsurface component;
- Artefacts are most commonly found in shallow subsurface soils to 150 mm depth, with a large number of subsurface artefacts having been recorded as a result of monitoring pipeline grading activities;
- The vast majority of previously recorded Aboriginal places in the geographic region contain 10 or fewer known artefacts;
- Of the two Aboriginal places with greater than 10 stone artefacts, VAHR 7420-0018 contains stone artefacts introduced as road gravel into the geographic region, while VAHR 7420-0025 was identified after grading of a pipeline easement and heavy rains, which provided high surface visibility conditions;
- Most artefacts scatters in the region have been recorded on plain / floodplain landforms and slopes/rises, most commonly in association with a nearby permanent or ephemeral watercourse; and
- Artefacts raw materials represented in the geographic region include silcrete, marine chert, quartz and quartzite.

Harm has been permitted to all Aboriginal places within 50 m of the activity area by CHMPs prepared ahead of a proposed windfarm (CHMP 14574) and a gas pipeline (CHMP 13060). The management status of Aboriginal places located within or within 50 m of the activity area is summarised in Table 4, below.

Table 4: Status of Aboriginal places within 50 m of the activity area.

Place No.	Status
VAHR 7420-0027	Place originally identified following pipeline grading, and recorded as 'totally destroyed or removed' (site card data). This artefact scatter subsequently not re-identified during an inspection to inform CHMP 13060 prepared ahead of a gas pipeline. CHMP 13060 MM4 permitted part or all of this Aboriginal place to be harmed by works associated with the gas pipeline (Lane *et al* 2015: 16).
VAHR 7420-0031	Place located within the activity area. Isolated artefact originally 'Collected and Lodged with Framlingham Aboriginal Trust' (site card data). This artefact scatter was subsequently not re-identified during an inspection to inform CHMP 13060 which was prepared ahead of a gas pipeline. CHMP 13060 MM4 permitted part or all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16).
VAHR 7420-0032	Place located approximately 3 metres north of the current activity area. Located on a slope overlooking Skull Creek, approximately 140 m to the north. Artefact identified following grading of pipeline right-of-way. 'Artefact collected and lodged with Framlingham Aboriginal Trust' (site card data).
VAHR 7420-0036	Isolated surface find on a road reserve, artefact collected (Lane *et al* 2015: 133). This artefact scatter was subsequently not re-identified during an inspection to inform

Place No.	Status
	CHMP 13060 prepared ahead of a proposed gas pipeline. CHMP 13060 MM4 permitted all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16).
VAHR 7420-0056	LDAD recorded during field work undertaken to inform CHMP 14574 prepared ahead of a proposed windfarm (O'Connor 2016). The CHMP management condition stated that the windfarm will cause harm to this place, and permitted harm to this Aboriginal place, with no mitigation measures required (O'Connor 2016: 45).

3.6. Previous Archaeological Investigations

3.6.1. Introduction

This section summarises the results of relevant previous archaeological studies undertaken within the geographic region, and includes the following:

- Section 3.6.2 provides a brief discussion of regional studies previously undertaken in the region;
- Section 3.6.3 summarises the results of archaeological assessments with a fieldwork component that have been undertaken within part or all of the activity area; and
- Section 3.6.4 summarises the findings of other local and regional archaeological assessments on a thematic basis, in order to identify common themes around the nature and distribution of Aboriginal cultural heritage across the wider geographic region.

Collectively, a review of these studies aims to provide an indication of the nature and type of Aboriginal places likely to be present in the activity area and assists in developing an archaeological predictive model (as well as contextualising results).

3.6.2. Regional Studies

General studies of Aboriginal population and technology in the Western Plains (Lourandos 1977; 1980a; 1980b; 1983; Williams 1985; 1987) have generated much debate over the interpretation of Aboriginal places in the region (Beaton 1983; Bird & Frankel 1991).

Lourandos (1977; 1980a; 1980b; 1983; 1985) produced a broad model of Aboriginal social evolution in western Victoria. Using data on density and ages for a range of Aboriginal place types, along with ethnohistorical information on nineteenth century Aboriginal society, Lourandos argued for the 'intensification' of Aboriginal occupation of the Western Plains in the late Holocene (1983: 87-8; 1985: 389-91). He argued that new Aboriginal places and place types appear in the archaeological record from this time and that this was due to an increase in the intensity of economic production. This corresponded with a change in stone tool technology, a change in subsistence patterns and the formation of closer ties between

Aboriginal clans, which led to an increase in population (1980b: 245-6; 1985: 407-11). In particular, Lourandos argued that, in the late Holocene Aboriginal people lived a semi-permanent lifestyle in optimum environments. Optimum habitats were defined as places where abundant and reliable food sources are found, and in the Western Plains these comprised wetland environments (1983: 87). The remains of Aboriginal stone 'houses', often referred to as stone circles, and eel traps at Lake Condah were used to illustrate this argument of changing patterns of Aboriginal behaviour. Coutts et al. (1978: 1) perceived that the 'Lake Condah structures provide further evidence for specialised and large-scale technological adaptation in the district...'.

Several researchers (e.g. Coutts et al. 1978; Williams 1988) supported Lourandos' claims. However, criticisms were also levelled at his theory. Opponents maintained that the available data did not support the idea of changes in Aboriginal behaviour throughout the Western Plains in the late Holocene (Beaton 1983; Bird & Frankel 1991). Some researchers highlighted the fact that the Aboriginal places that Lourandos used to illustrate changes in economic production either dated to the more recent period (e.g. stone circles), or could not be directly dated (e.g. Lake Condah fish traps) (Bird & Frankel 1991: 8).

Other major research projects in the Western Plains region include Williams' (1985, 1987, 1988) study of Aboriginal mounds in the Bessiebelle, Caramut and Mount William areas. These places are believed to be either the remains of cooking ovens and/or the base of wooden hut structures. Williams recorded 102 Aboriginal mounds in a variety of environments, ranging from high ground to swamp margins. Most were located on the top of natural rises and most occurred on basalt soil that, regardless of position, was poorly drained. Williams excavated and dated a number of mounds. Dates obtained from the mounds ranged between 2,000 years old to 'modern' (Williams 1988: 84-94). Many were located in swampy environments adjacent to stony rises (Williams 1985: 185; 1988: 139). Williams argued that at least at some localities mounds might represent the remains of large Aboriginal living complexes, or 'villages' (Williams 1985).

It is important to note that dense clusters of mounds, stone circles and eel traps are considered to be very unusual and are most commonly associated with swampy environments within or adjacent to stony rises. No such landforms are present within the study area or the geographic region.

3.6.3. Previous Archaeological Assessments which included the Activity Area

A small number of previous CHMP and non-CHMP assessments have been undertaken whose study areas partially overlapped with sections of the current activity area. The areas of overlap are shown on Figure 22, and the studies briefly summarised in this section.

Proposed Wind Farm, 464 Boundary Road, Timboon West, Victoria. CHMP 14574. (O'Connor 2016).

Ecology and Heritage Partners (O'Connor 2016) were engaged by Future Energy Pty Ltd to prepare a CHMP ahead of the construction of a proposed wind farm at Timboon West. The study area for this project extended from Boundary Road in the east to East and West Road in the north, in a reverse L-Shape, and crossed a small section of the current activity area, south of East and West Road (see Figure 22). The Desktop Assessment found that while no previously recorded Aboriginal places were present within the study area, it was reasonably possible that as-yet unrecorded Aboriginal cultural heritage would occur – most likely in the form of artefact scatters and/or LDADs (O'Connor 2016: vi).

A subsequent Standard Assessment found that the study area exhibited 'consistently poor' ground surface visibility of less than five percent, owing to the presence of pasture grass and weeds across its entirety and 'in addition, the low lying portions of the activity area were inundated with water and the minor drainage lines, which run east west through the activity area, were flooded' (O'Connor 2016: 28). No Aboriginal places were identified in the course of the Standard Assessment, although two areas of 'Aboriginal archaeological heritage likelihood' were identified – an area in close proximity to a previously registered Aboriginal place, and 'the area surrounding the unnamed drainage lines running east west through the northern end of the activity area' (O'Connor 2016: 28). An area of significant ground disturbance was identified where a subsurface utility easement is located.

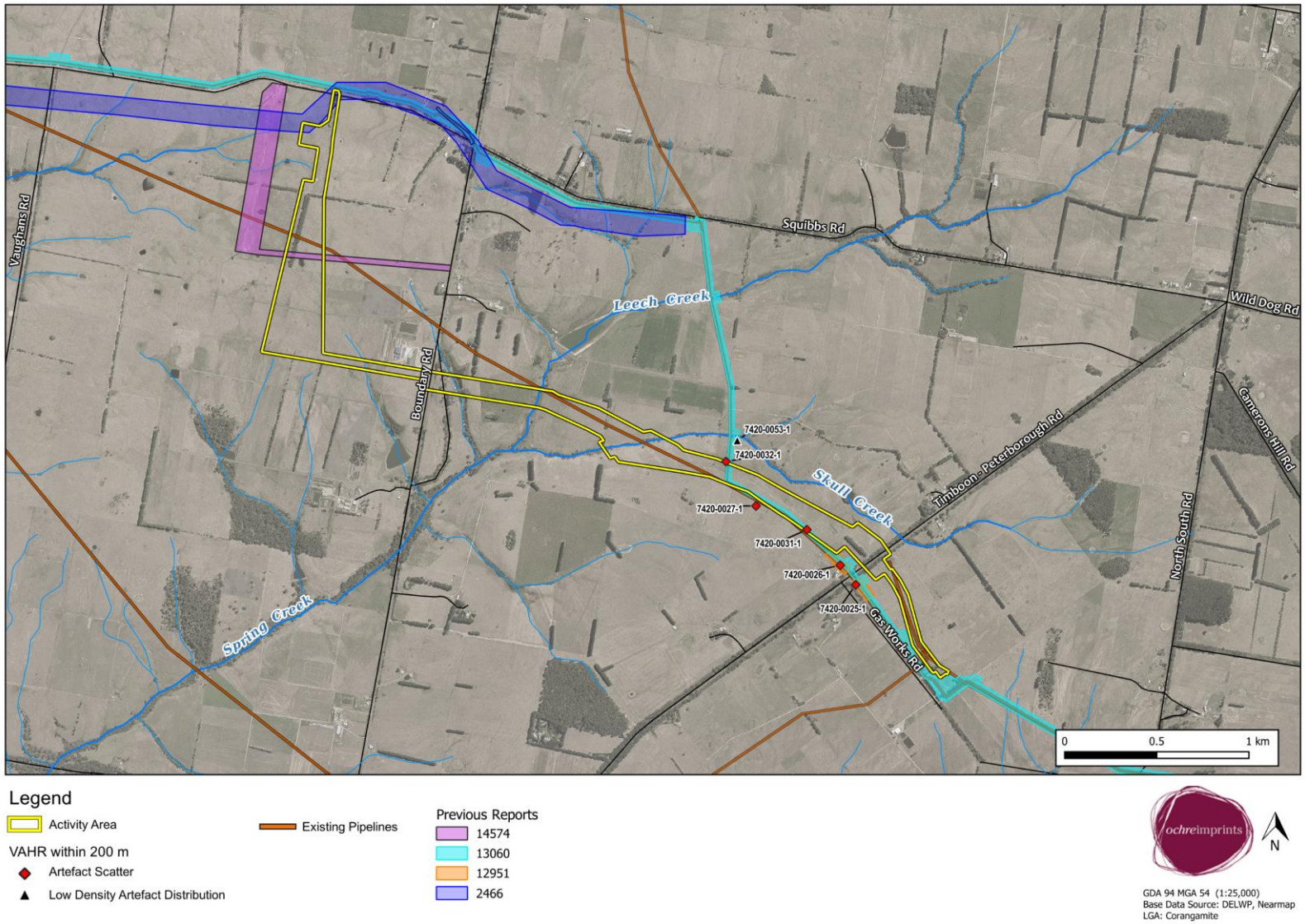


Figure 22: previous assessments with overlapping study areas.

The Complex Assessment that followed involved a program of testing which aimed 'to test for presence or absence of Aboriginal cultural heritage in the areas of likelihood' (O'Connor 2016: 33). The entirety of the study area was located on a low lying, undulating volcanic plain. The subsurface testing involved the excavation of two EPs and 12 STPs (an area of 5 sqm) and resulted in the identification of three silcrete flaked stone artefacts (two in an EP and one in a STP) recovered from soil depths of 400 mm on a low lying undulating volcanic plain landform. The EP and STP were located >1km from each other and the stone artefacts were registered as LDAD VAHR 7420-0056 (O'Connor 2016: 39). No subsurface testing was undertaken in the current CHMP activity area.

The author concluded that (O'Connor 2016: 39)

> the results of the subsurface testing indicate prehistoric Aboriginal activity within the geographic region was at a low level, also known as a background scatter. Considering the variety of creeks, rivers and particularly ephemeral drainage lines situated within the Warrnambool Plain, it is unlikely that fresh water was a significant factor in determining where Aboriginal people chose to camp, hunt or gather resources when water was so easily accessible. It is possible that high ground in the geographic region which was not subject to seasonal flooding was a more attractive camping and hunting place for Aboriginal people.

<u>Halladale, Black Watch & Speculant Pipeline. CHMP 13060. Lane *et al* 2015.</u>

Ochre Imprints (Lane *et al* 2015) were engaged by Origin Energy Resources Ltd to prepare a CHMP ahead of the installation of a DN200 monoethylene glycol (MEG) pipeline and fibre optic cable within a single trench along the Croft to Otway Gas Plant gas pipeline easement. The study area for the CHMP consisted of a roughly linear corridor approximately 33 km in length and 25-27m in width, running between Newfield and Nirranda South, and which partially overlapped with the current activity area in two places (see Figure 22). The first area of overlap was in the northern part of the activity area, running parallel to and north of East and West Road. The second area is in the south, with the study area partially overlapping the activity area in small sections on both sides of Boundary Road.

CHMP 13060 was completed by way of a Desktop, Standard and Complex assessment. The Desktop Assessment noted the large number of previous archaeological assessments undertaken in the study area as a result of the installation of earlier gas pipelines, resulting in extensive ground disturbance (Lane *et al* 2015: 8). It was considered likely, however, that as-yet unidentified Aboriginal cultural heritage would occur in the study area, most likely in the form of 'surface and subsurface isolated stone artefacts or diffuse stone artefact scatters…located in, or on shallow A-horizon soils' (Lane *et al* 2015: 8).

A subsequent Standard Assessment targeted areas of high ground surface visibility and places where the study area deviated significantly from the existing easement. One Aboriginal place, VAHR 7421-0222, an LDAD, was identified during the Standard Assessment 'in a very disturbed context on a built up gravel-surfaced track' (Lane *et al* 2015: 9). Part of the current activity area was subject to survey, in the vicinity of VAHR 7420-0026. No evidence of this place, or any other Aboriginal cultural heritage or areas of potential were identified within this part of the activity area.

A Complex Assessment involved the excavation of ten 1 x 1 m test pits and one 2 x 1 m test pit. No part of the current activity area was subject to subsurface testing as part of CHMP 13060. Two LDADs (VAHR 7420-0052 and -0053) were recorded as a result of the Complex Assessment. These two Aboriginal places comprised 5 stone artefacts (VAHR 7420-0052) and one stone artefact (VAHR 7420-0053) recovered from the upper 200mm of soil, and were located on gently sloping land / rise overlooking the Curdies River as well as on flat land on its western side, and on sloping land on the south side of Skull Creek (Lane *et al* 124-5). The Complex Assessment found that 'A-horizon soils over much of the activity area are relatively shallow, with roughly 20cm of soil overlying a mineral pan or clay' (Lane *et al* 2015: 116).

The results of the Complex Assessment were found to accord with the Desktop Assessment, that 'Aboriginal cultural material is likely to exist in the activity area, but it is likely to be present as sparse or dispersed stone artefact scatters of quartz, flint and possibly silcrete that are relatively difficult to detect during either ground surface survey or subsurface testing, owing to the relatively low density of material' (Lane *et al* 2015: 120). Furthermore, 'A-horizon soils across much of the activity area are, for the most part, likely to be shallow, meaning that subsurface artefacts are only likely to be found in relatively shallow and, consequently disturbed, contexts' (Lane *et al* 2015: 120).

Croft To Heytesbury Gas Pipeline Dig Ups Project. CHMP 12951 (Schell *et al* 2014)

In 2014, Ochre Imprints was commissioned by Origin Energy Resources Ltd to complete a CHMP ahead of the Croft to Heytesbury Gas Pipeline Dig Ups Project (Schell *et al* 2014). The study area for this project consisted of four separate 'dig up' locations, one of which ('dig up 2') overlapped slightly with the southern part of the current activity area, west of Timboon-Peterborough Road (see Figure 22). It was noted in the CHMP that surface artefact scatters VAHR 7420-0025 and 7420-0026 had been recorded within the study area in the past, in the existing pipeline easement, and although the artefacts recorded at these locations had been collected, 'there is potential for further stone artefacts associated with these two Aboriginal Places to occur within the activity area' (Schell *et al* 2014: 68).

Although a Standard Assessment was conducted at these places, no Aboriginal cultural material was found. No subsurface testing was undertaken as part of this CHMP, as the proposed activity was limited to areas of previously disturbed ground within the pipeline easement (Schell *et al* 2014: 59).

Croft, Tregony, Mckintee Pipelines South Western Victoria. FPSR Report 2466. (Lance 2001a)

On behalf of Santos, Lance (2001a) conducted an archaeological assessment of the proposed gas pipelines connecting existing and proposed gas wells. This included a gas pipeline connecting the Croft Gas Well to the Heytesbury Gas Plant, encompassing a small section of the current activity area, where it turns south from East and West Road (see Figure 22). Lance's survey of the Croft route was limited by poor ground surface visibility. One Aboriginal place was identified north of the current study area during the survey, VAHR 7420-0036, an isolated quartz artefact located on the surface of a rabbit burrow. The artefact was not considered to be *in situ*. Sandy soils in the remainder of the study area were considered to have potential to contain Aboriginal cultural heritage (Lance 2001a: 18).

Penryn 1 Pipeline Survey and Monitoring, South Western Victoria. FPSR Report 1856. (Lance 2001b)

Lance (2001b) undertook an archaeological survey of the proposed Penryn gas well to Heytesbury gas plant pipeline. Part of the study area for this project overlapped with the current activity area at its southern end, west of Timboon-Peterborough Road. Dense ground cover at the time of survey limited surface visibility and no Aboriginal cultural material was identified in the study area. Following the field survey archaeological monitoring of the pipeline right-of-way corridor and the inspection of spoil was undertaken during works. Despite increased ground visibility on the cleared right of way no Aboriginal cultural material was identified in the study area. No areas of increased archaeological potential were identified in the study area during the field survey or subsequent archaeological monitoring (Lance 2001b: 14).

Fenton Creek, Mylor Gas Fields. FPSR Reports 1414, 1445. (Lance 1999a, 1999b)

Lance (1999a) undertook a cultural heritage assessment of the proposed construction of 7 km of gas pipelines connected Fenton and Mylor Gas wells with Boral North Paaratte Gas Plant (this is now the North Paaratte Production Station). The study areas for these projects overlapped slightly with the current activity area in the south, west of Timboon-Peterborough Road (see Figure 22). No Aboriginal places were identified during a field survey undertaken as part of the initial assessment. This result was considered to be influenced by limited ground surface visibility at the time of the survey. It was determined that Aboriginal cultural heritage,

if present, would occur in sandy deposits near major creeks and waterways. Aboriginal cultural material was considered unlikely to occur in the remainder of the study area and if present would comprise diffuse low density artefact scatters (Lance 1999a: 17-18).

No subsurface testing was considered necessary as prior regional studies revealed that Aboriginal places comprised of diffuse low density artefact scatters that are generally difficult to detect during subsurface testing programs and if present the information provided by such places is limited (Lance 1999b: 3). Subsequent to the cultural heritage assessment archaeological monitoring was undertaken during pipeline construction. A total of 11 Aboriginal places were identified (VAHR 7420-0025, -0026, -0027, -0028, -0029, -0030, -0031, -0032, -0033, -0034 & -0035) comprising low density diffuse stone artefact scatters (Lance 1999b: 7-17).

One of those Aboriginal places, VAHR 7420-0031, is located within the activity area for this project. As discussed in Section 3.5 and summarised in Table 4, this place consisted of an isolated artefact collected and lodged with Framlingham Aboriginal Trust. The place location was subsequently subject to a field assessment to inform CHMP 13060, which was unable to locate any other evidence of this Aboriginal place and allowed for its harm without further mitigation measures in the course of the activity associated with the CHMP.

North Paaratte #1 Well Infrastructure Development. FPSR Report 1417 (Lance 1999c)

Lance (1999c) conducted a cultural heritage assessment of the construction of a 500 m underground gas pipeline right-of-way corridor at the existing North Paaratte #1 Gas Well that included ground preparation for drilling two additional gas wells. The study area for this project overlapped with the current activity area at its southern end, immediately east of Timboon-Peterborough Road (see Figure 22). Archaeological monitoring undertaken during construction involved the visual examination of the graded gas pipeline right-of-way and excavated trench, and sample sieving of stockpiled topsoil through a 4 mm sieve (Lance 1999c: 4-8). No Aboriginal cultural material was identified during the assessment. Lance (1999c: 9) suggests this result possibly reflects occasional visitation and resource exploitation of forests in the Heytesbury area by Aboriginal people. Lance found that Aboriginal cultural material in the study area is therefore likely to be characterised by diffuse, low density occurrences of stone artefacts which are difficult to detect in the archaeological record, rather than an absence of cultural material.

Subsequent to the cultural heritage assessment archaeological monitoring was undertaken during the construction works (Lance 1999d). No Aboriginal cultural heritage material was identified in the course of this monitoring (Lance 1999d: 9), which was found to conform to the

notion that sites in the area 'are likely only to document fleeting visitation and resource exploitation, rather than habitation'.

3.6.4. Other Local and Regional Archaeological Assessments

Nature of prior investigations and any limitations

A range of archaeological assessments have been undertaken in the geographic region in the past for a variety of reasons, although most commonly associated with gas-related infrastructure (its installation, upgrade and maintenance). Most recently, a number of CHMP assessments have been undertaken ahead of proposed ground disturbing works associated with the installation of a water transfer main (Gilding *et al* 2011), of proposed quarry works (Day 2020); a proposed power station project (Schell & Wines 2008), gas field development (Barker 2011) and ahead of the establishment of a walking and cycling trail (Liro & Grinter 2018). Two archaeological salvage programs have also recently been carried out, in compliance with CHMP conditions (Tuechler & Barker 2014; Wines & Turnbull 2011).

CHMP assessments have the advantage of a comprehensive assessment process generally including subsurface testing but are limited by a prescribed study area, as well as in being undertaken for specific projects, generally ahead of development. Associated salvage programs generally have the advantage of providing more detailed, in depth information about a given Aboriginal place prior to its destruction or harm, but are limited to investigations of particular places and by the method and extent of the salvage required by the CHMP.

A number of non-CHMP reports with have been undertaken in the region, from cultural heritage assessments, survey and monitoring exercises overwhelmingly undertaken ahead of proposed works associated with the natural gas industry (Brown 1996; 1996a; Cekalovic 1999; Lane 1996; Rhodes & Catrice 1995; Rhodes & Debney 1997; Schell 2007; Wood 2003; Schell & Howell-Meurs 2005). A number of these earlier assessments did not result in the identification of Aboriginal cultural heritage (Brown 1996; Cekalovic 1999; Rhodes & Debney 1997; Schell 2007; Wood 2003). Of the recent CHMPs undertaken in the wider geographic region, a small number did not result in the identification of Aboriginal cultural heritage (Day 2020; Gilding *et al* 2011).

Nature of the cultural heritage identified

The vast majority of the Aboriginal cultural heritage identified described in recent studies comprises stone artefacts that have been registered as either artefact scatters or LDADs, with a small number of shell exposures or middens also recorded in coastal areas. These Aboriginal places have generally been identified and defined during the fieldwork component of either a non-CHMP archaeological survey (Brown 1996; Barker 2011; Lane 1996; Schell &

Howell-Meurs 2005) or, more commonly, a CHMP Standard and/or Complex Assessment (Barker 2011; Liro & Grinter 2018; Schell & Wines 2008) – and in some instances further investigated and described as part of a salvage program (Tuechler & Barker 2014; Wines & Turnbull 2011).

Recorded Aboriginal place characteristics can be influenced by the manner of recording, and some artefact scatters / isolated finds are recorded as surface finds only, where no subsurface testing has been carried out at their location (Lane 1995: ii; Schell & Howell-Meurs 2005: 2) – most commonly the case where Aboriginal cultural heritage has been assessed using a non-CHMP assessment process. Artefact scatters / LDADs in the geographic region are most often recorded as occurring in subsurface only or a combination of both surface and subsurface contexts, (Barker 2011: 9; Liro & Grinter 2018: 117; Schell & Wines 2008: 9) – often this is due to earlier recordings of surface scatters being revisited as part of a CHMP and subject to subsurface investigation. Of those Aboriginal places recorded as having a subsurface component, the majority of artefacts were recovered from shallow subsurface deposits – with artefacts found as deep as 550 mm below the current ground surface, but the majority confined to the upper 250 mm (Barker 2011: 10; Liro & Grinter 2018: 117; Schell & Wines 2008: 7-8, 82-7; Tuechler & Barker 2014: 31).

Aboriginal places have been recorded on plain (volcanic and/or floodplain) landforms (Lane 1996: ii; Schell & Wines 2008: 82-7), or on elevated land described variously as karsts, ridgelines, hillslopes and escarpments (Barker 2011: 10, 102; Brown 1996: 14; Schell & Wines 2008: 82-7). Raised ground overlooking or in the vicinity of a watercourse – termed a creekbank, terrace within an alluvial plain or rise, has been reported as particularly sensitive (Barker 2011: 102; Liro & Grinter 2018: 116; Schell & Howell-Meurs 2005: 2). Almost all areas assessed as being of Aboriginal archaeological potential in the geographic region are described as being close to, associated with or 'overlooking' a water source in the form of a major river or creek or even a seasonal or ephemeral watercourse (Liro & Grinter 2018: 116, Schell & Wines 2008: 7).

Post-contact disturbance is variable across the region, with most assessments identifying a range of post-depositional processes that may have caused disturbance to Aboriginal places, ranging from stock trampling, to erosion, to the installation of utilities, and construction of houses and roads (Barker 2011: 10; Liro & Grinter 2018: 116; Schell & Wines 2008: 7, 82-7; Schell & Howell-Meurs 2005: 21). In some circumstances, mixing of soils and artefacts is thought to have occurred where soils have been excavated to coffee rock and then re-deposited as fill in the same location (Schell & Wines 2008: 82-7). Most artefacts have been recovered from relatively shallow subsurface soils, thought to have been subject to disturbance through activities such as ploughing, clearing and stock trampling (Barker 2011:

10; Schell & Wines 2008: 7; Schell & Howell-Meurs 2005: 21). Natural forces such as erosion (Liro & Grinter 2018: 116) and bioturbation are also seen as contributors to site disturbance in the region (Barker 2011: 10).

Artefact density at Aboriginal places in the geographic region has generally been recorded as very low (less than one per sqm), and often a very small number of artefacts (fewer than 10) make up the assemblage for a given Aboriginal place (Barker 2011; Liro & Grinter 2018: iv; Schell & Wines 2008: 82-7), with many Aboriginal places consisting of isolated finds of 1-3 artefacts or so. Most artefact scatter / LDADs contained small numbers of recorded artefacts, although larger scatters containing upwards of 70 recorded artefacts have been identified in the wider region (Tuechler & Barker 2014: 28). The most common raw materials on which artefacts were manufactured were quartz, silcrete and chert/flint, with smaller amounts of quartzite and volcanic glass also present (Barker 2011: 99, 102; Brown 1996: 14; Liro & Grinter 2018: 117; Schell & Wines 2008: 82-7; Schell & Howell-Meurs 2005: 20).

Few tools are present among the assemblages analysed, and the most commonly recorded artefact types in the larger assemblages are flakes and flaking debris (Tuechler & Barker 2014: 31; Liro & Grinter 2018: 117). Bipolar flaking is evident at some locations (Tuechler & Barker 2014: 31). Where tools have been recorded, they have generally included artefacts representative of the Australian Small Tool Tradition such as geometric microliths (Tuechler & Barker 2014: 32-3).

Radiometric dating results

No radiometric dating has been carried out as part of any of the recent CHMPs in the region, with a lack of suitable material for dating cited as the reason, where one is provided (Lane *et al* 2015: 121). Management conditions for CHMPs (salvage and contingency measures) increasingly require that if suitable material is identified in the course of future archaeological work, then this material should be subject to such procedures, although thus far, no salvage programs have undertaken radiometric dating in the geographic region.

Interpretive statements

The archaeology of the geographic region is characterised by low densities and numbers of stone artefacts, in surface and shallow subsurface contexts and located across a range of landforms including the dominant volcanic plain / floodplain (as well as on low rises among lower-lying swampy ground and other elevated ground and along creek banks), with a strong association with proximity to a water source (noting water sources are a common occurrence). Shell exposures / middens sites are found close to the coast. The small size and low density of many LDAD / artefact scatters in the region generally precludes detailed interpretation of their contents.

The type of landform itself, along with the way it is formed, was considered likely to have an impact on the Aboriginal archaeological record of the region, which is sparse (Liro & Grinter 2018: iii-iv):

> deposits ranged from shallower silts and clayey silts on the tops of rises, to deeper alluvial terraces on Power Creek. The landforms tested are representative of eroded alluvial lowland plains, modified by water and wind activity. These actions, along with recent farming and other uses have modified the landscape, which may explain the lack of artefactual material or other Aboriginal heritage, within the Activity Area. The depths of terrace deposits depended on their position on crests or lower down, with crests tending to be shallower. A sterile clay layer was typically reached below 350 millimetres with deposits being largely undisturbed.

Because of the generally low density and small size of artefact assemblages in the region, little has been ventured in the way of interpretation by previous assessments. A salvage assessment (Tuechler & Barker 2014) which resulted in the identification of a more extensive artefact scatter, adjacent to the geographic region, has allowed for a more detailed description of a site and interpretation of its contents than has generally been undertaken locally. Tuechler & Barker (2014: 32-3) reported on the salvage of VAHR 7420-0047, an artefact scatter site which displayed an assemblage comprised primarily of quartz flaked stone artefacts 'with predominately water worn/cobble cortex' which indicated that 'quartz was likely sourced from readily available local sources' (Tuechler & Barker 2014: 32). The assemblage as a whole was found to be comprised of a high proportion of flakes and flaking debris including angular fragments, with tools making up a very small portion (2%) of the assemblage.

The assemblage was thought to suggest that 'an expedient stone tool industry may have been undertaken in the activity area with flakes manufactured for immediate use. Expedient stone tool production is generally associated with informal tool types (such as utilised flakes and blades) manufactured on readily available abundant raw material' (Tuechler & Barker 2014: 32). The presence of bipolar flaking was found to indicate that 'at least some primary core reduction occurred elsewhere' and low proportion of formal tools to indicate, similarly 'that at least some core and formal tool curation was undertaken with discard occurring elsewhere' (Tuechler & Barker 2014: 32). The presence of a geometric microlith in the assemblage was found to suggest that 'at least some of the assemblage in the activity area is associated with the mid-late Holocene temporal period' (Tuechler & Barker 2014: 32).

This site was compared with another salvaged site which did not yield a large number of artefacts (Tuechler & Barker 2014: 33):

> Due to the small sample size identified to-date at VAHR 7420-0049 an in-depth interpretation cannot be surmised from the assemblage. However, the presence of a

scraper indicates that as at VAHR 7420-0047 some woodworking activities may have occurred on site. The difference in assemblage size between VAHR 7420-0047 (n=72) and VAHR 7420-0049 (n=3) may be a result of a range of factors such as post deposition processes, with the movement of artefacts horizontally across the landscape due to agricultural activities, or the collection methodology with higher densities of stone artefacts possibly present in an unexcavated portion of the activity area. It is possible that VAHR 7420-0047 was the focus of Aboriginal activities in the area in the past with VAHR 7420-0049 representing an occasional or one off event.

3.7. Summary & Discussion

The Desktop Assessment established that one previously recorded Aboriginal place, VAHR 7420-0031 is present within the activity area, although the single marine chert stone artefact that comprises this Aboriginal place was collected during gas pipeline construction works. It found that the activity area has been subject to historical land use practices associated with pastoral and agricultural industries, as well as the construction and use of a small number of roads, a residential property, two gas pipelines, an underground power line, and a gas plant throughout the post-contact period. A review of the VAHR found that 26 previously registered Aboriginal places occur within the geographic region, with seven Aboriginal places (all either artefact scatters or LDADs) located within 200 m of the activity area boundary. The cultural heritage in most cases comprises stone artefacts registered as both artefact scatters, and LDADs – although it should be noted that potentially all of the artefact scatters were recorded under an older classification system, and if recorded today would be classified as LDADs. One object collection, representing a collected artefact scatter held on private property has also been recorded in the local area.

A total of eight CHMPs have been undertaken within the geographic region, two of which did not identify any Aboriginal cultural heritage. The remaining six CHMPs identified stone artefact scatters, LDADs, midden sites (near the coast), with artefactual material generally found in a shallow subsurface and/or surface context, on both floodplain landforms and associated rises in close vicinity to a watercourse or on coastal land. A number of CHMPs and other non-CHMP localised assessments have been undertaken whose study areas partially overlap with the current activity area, although no previous CHMP assessment has been undertaken over the activity area as a whole. VAHR 7420-0031 has been subject to further assessment via CHMP 13060, which found that its known contents had been removed from site and allowed for its harm without further mitigation measures in the course of the activities described in that CHMP.

Local permanent and ephemeral watercourses and their surrounds have consistently been identified as an area of elevated archaeological potential. Although the Aboriginal

archaeological record in the geographic region is sparse, it is considered reasonably possible that the activity area contains as-yet unrecorded Aboriginal cultural heritage material.

3.8. Implications

The Aboriginal Heritage Regulations 2018 (r. 62) states that a Standard Assessment is required in circumstances where a Desktop Assessment shows that it is reasonably possible that Aboriginal cultural heritage is present in the activity area. On this basis a Standard Assessment is required.

4. STANDARD ASSESSMENT

4.1. Introduction

The Standard Assessment undertaken as part of the preparation of this CHMP involved a pedestrian archaeological field survey. The aims, method, coverage, and results of the field survey are presented in this section.

The field survey was carried out on 25 November 2022. The archaeological field program was supervised by Krista Whitewood (Project Archaeologist), who was assisted by Isobel Simpson (Archaeologist). The following EMAC field workers participated in the field survey:

- Phillip Chatfield;
- Jyran Chatfield.

4.2. Aims Of The Standard Assessment

The aims of the field assessment were to determine the presence, nature, distribution, and significance of Aboriginal cultural heritage in the activity area. The Standard Assessment was undertaken to:

- Assess the current condition of VAHR 7420-0031;
- Whether any Aboriginal cultural heritage was visible in the activity area;
- The nature and distribution of landforms in the activity area and assess their archaeological sensitivity; and,
- The extent of ground disturbance and impacts to any Aboriginal cultural heritage (if present).

4.3. Method And Coverage

4.3.1. Field Method

The field survey involved an examination of the activity area by four people using the following method:

- a survey of the activity area in a c. 12 m wide transect with four people spaced 2-3 m apart;
- the inspection of the location for VAHR 7420-0031 to assess its current condition;
- the inspection of mature native trees, if present, for signs of Aboriginal bark removal and/or other cultural scarring practices;
- the examination and recording of all Aboriginal cultural heritage (if present) at its identified location (no material was to be removed from the original find location); and,

- the use of a differential GPS (Leica Zeno 20 UMTS) to record the location of any identified Aboriginal cultural heritage.
- Caves and rock shelter features were not present in the activity area, and therefore were not examined.

4.3.2. Survey Coverage

Survey coverage is shown in Figure 23 with ground surface visibility conditions and coverage summarised in Table 5 (as per Witter 1990).

The activity area is predominately comprised of privately held land however portions of the activity area are occupied by sealed and unsealed roads and associated road reserves. Most of the activity area is currently unoccupied and is utilised for agricultural purposes. The southeastern most extent of the activity area contains a gas pipeline compound. At the time of the survey, the entirety of the activity area was accessible and was able to be surveyed in full.

Ground surface visibility was found to be consistent across the entire activity area, being observed to be very poor, <1% due to thick vegetation coverage across its entirety. An analysis of the survey coverage results reveals that 1% (6,769 m² out the total of 676,643 m²) of the activity area was effectively surveyed.

The only obstacle encountered during the Standard Assessment was low ground surface visibility conditions.

Table 5: Surface visibility and survey coverage.

Landform	Exposure Type	Area Surveyed (a) (m²)	Visibility (%)	Effective Survey Coverage (ESC) (m²)	ESC % of Area Surveyed
Gently Undulating Plain	Grassed	349151	<1%	3492	1.00%
Dissected Plain	Grassed	327798	<1%	3278	1.00%
Total	**-**	676643	**-**	**6,769.49**	**1.00%**

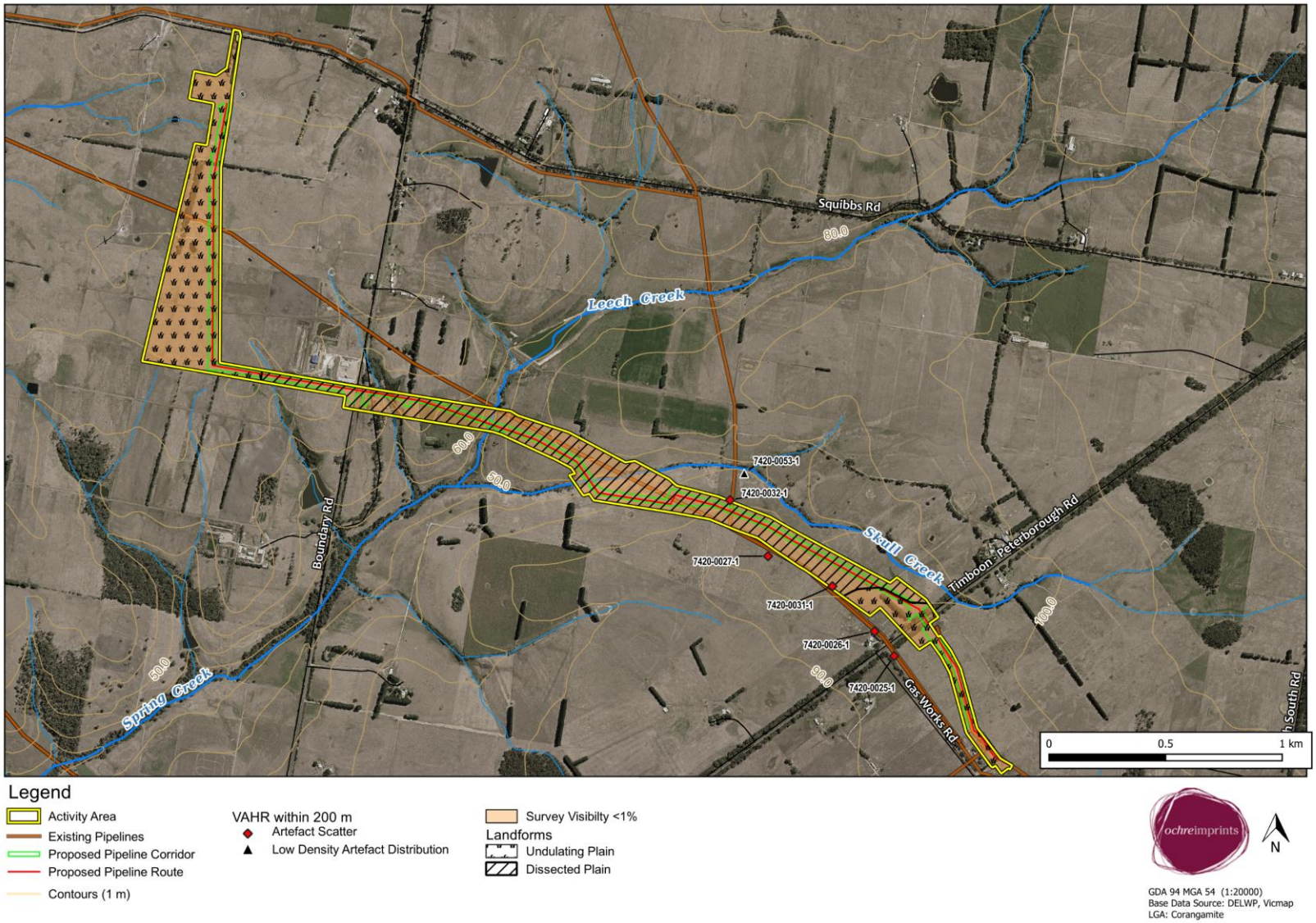


Figure 23: Results of the field survey.

4.4. Assessment Results

4.4.1. General

The activity area is predominately characterised by land which is primarily utilised for agricultural purposes. The Standard Assessment identified two landforms within the activity area: a gently undulating plain and a dissected plain landform (Plates 1-3). Several native trees are present within the activity area however, upon inspection none of the native trees present showed signs of cultural scarring or modification. The location of the registered VAHR 7420-0031 was inspected during the Standard Assessment and no works appeared to have impacted this place since the construction of a gas pipeline in c. 2016. No Aboriginal cultural material was identified within the activity area during the field survey.

Varying levels of ground disturbance was noted across both landforms within the activity area however most ground disturbance observed was noted to be minimal and localised. The most significant ground disturbance identified during the Standard Assessment was found to be the portions of the sealed Boundary Road, Timboon-Peterborough Road and the unsealed East and West Road and Gas Works Road that are within the activity area (Plate 4). In addition to the sealed and unsealed portions of road within the activity area, the other major contributing factor to subsurface ground disturbance is the gas pipeline compound located in the south eastern most portion of the activity area (North Paaratte Production Station) on the gently undulating plain landform (Plate 5). Whilst only part of the gas pipeline compound is located within the current activity area, it is understood that its construction has caused significant ground disturbance within its footprint. Furthermore, several subsurface pipelines exist within the activity area and feed into this compound and traverse the activity area. Whilst this is not observable from the field survey these pipelines would have contributed to significant ground disturbance within its footprint, and the construction of the pipeline is considered to have impacted VAHR 7420-003 (Plate 2).

Other ground disturbance noted within the activity area however is much more localised. The most significant of which are two brick structures which may have been former residential dwellings and/or used as farm sheds (Plate 6-7). Both structures were identified on the dissected plain landform. The construction of these two structures would have caused disturbance within their footprint.

Minor works contributing to ground disturbances include several culverts where Skull Creek and Leech Creek crosses the activity area. These were identified on the dissected plain landform (Plate 8-9). Paddock dividing fences also occur within the activity area on both landforms (Plates 10-11). Finally, land use for pastoral purposes has resulted in stock trampling occurring across the activity area (Plate 12).

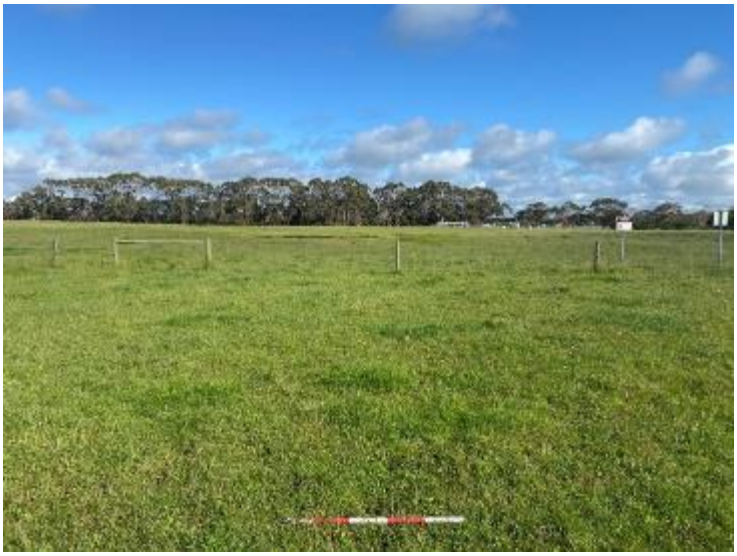


Plate 1: General area shot of gently undulating plain landform (facing north west).

Plate 2: Location of VAHR 7420-0031 (facing north).

Plate 3: General area shot of dissected plain landform (facing west).

Plate 4: Sealed Road and road reserve within activity area (facing north).

Plate 5: General area shot showing the North Paaratte Wellsite (facing south west).

Plate 6: Abandoned structure located on the dissected plain (facing west).

Plate 7: Abandoned structure located on the dissected plain (facing west).

Plate 8: General area shot showing culvert on dissected plain landform (facing south).

Plate 9: General area shot showing culvert on dissected plain landform (facing south).

Plate 10: Fence line on gently undulating plain landform (facing east).

Plate 11: Fence line on dissected plain landform (facing south north).

Plate 12: General area shot showing evidence of stock trampling within the activity area (facing south north).

4.4.3. Landforms & Archaeological Sensitivity

The activity area was found to cover two distinct landforms: a gently undulating plain and a dissected plain landform (Figure 23). An overview of the archaeological sensitivity of each landform is discussed below.

- **Gently Undulating Plain**: The Desktop Assessment found that this landform has potential to contain Aboriginal cultural heritage, with registered Aboriginal places in the geographic region commonly associated with this landform. No Aboriginal cultural heritage was identified on this landform during the Standard Assessment. This landform has been subject to varying levels of disturbance ranging from small scale and localised such as land use activities including agricultural and pastoral use to more significant impacts including the presence of the unsealed East and West Road and Gas Works Road. Furthermore, the gas pipeline compound is present within the landform and connects to several subsurface high pressure gas mains. The construction of the gas pipelines and compound would have caused disturbance within the landform. This landform was rated as having **low archaeological sensitivity.** If present, Aboriginal cultural heritage will most likely be in the form of diffuse stone artefacts that occur in subsurface contexts on elevated land adjacent Spring Creek and Leach Creek.
- **Dissected Plain**: The Desktop Assessment found that this landform had potential to contain Aboriginal cultural heritage with registered Aboriginal cultural heritage having been identified on this landform. There is also a registered Aboriginal place within the activity area, VAHR 7420-0031, which is present on this landform. This landform has been subject to small scale and localised ground disturbance related to pastoral and agricultural use as well as more significant ground including the presence of the sealed roads, subsurface gas mains and the two abandoned brick structures identified during the Standard Assessment. Despite the extensive ground disturbance having occurred on this landform, it is still rated as having **low-moderate archaeological sensitivity** as large portions of the landform are understood to not have been impacted by the above mentioned ground disturbing works. Furthermore, the proximity of Leach Creek and Skull Creek which are present in the activity area on this landform indicates a higher sensitivity for subsurface archaeological deposits to be present. Any Aboriginal cultural heritage that may present will most likely be in the form of diffuse to moderate density stone artefacts that occur in subsurface contexts.

4.5. Implications and Discussion

No Aboriginal cultural heritage was identified in the activity area during the Standard Assessment. Two landforms were identified to exist across the activity area, these being a gently undulating plain and a dissected plain landform. Surface visibility was noted to be poor across both landforms, <1%. The effective survey coverage results indicate approximately 1% or, 7463 m² out the total of 746243 m² of the activity area was effectively surveyed. The location of VAHR 7420-0031 was inspected during the Standard Assessment however no Aboriginal cultural material associated with this Aboriginal place was during the Standard Assessment. In addition, no impacts post the construction of a gas pipeline in c. 2016 were apparent.

Both landforms have the potential to contain Aboriginal cultural heritage though the dissected plain landform is understood to be more sensitive to subsurface Aboriginal cultural material due to its proximity to Leech Creek and Skull Creek. If subsurface Aboriginal cultural material is present, this will most likely comprise diffuse stone artefacts within subsurface deposits.

The Standard Assessment was unable to affirm the results of the Desktop Assessment, which found that diffuse Aboriginal stone artefacts occur within the wider geographic region, particularly on high points across the landscape such as slopes and escarpments. This was due to poor ground surface visibility across the entirety of the activity area. This restricted the effectiveness of the Standard Assessment in being able to identify Aboriginal cultural material.

The Aboriginal Heritage Regulations 2018 (r. 64) state that a Complex Assessment is required in circumstances where a Standard Assessment determines that Aboriginal cultural heritage is, or is likely to be, present in the activity area; and it is not possible to identify the extent, nature and significance of the Aboriginal cultural heritage unless a Complex Assessment is carried out. The CHMP was progressed to a Complex Assessment to determine the potential for Aboriginal cultural heritage to extend to subsurface deposits in the activity area.

5. COMPLEX ASSESSMENT

5.1. Introduction

A Complex Assessment was undertaken as part of this CHMP because the Standard Assessment found that it was possible for Aboriginal cultural heritage to be present within the activity area, but the nature, extent and significance of any cultural heritage (if present) could not be assessed through a field survey alone. The aims, method, coverage, and results of the Complex Assessment are presented in this section.

The subsurface investigation was carried out on 14-16, 20-23 March, 26-27 April, 17-18 July and 24-25 August 2023: Paul Freestone (Ochre Imprints – Archaeologist) supervised the archaeological field program with assistance from John Chadderton (Ochre Imprints – Archaeologist). The following EMAC representatives participated in the subsurface testing program:

- Dion Morgan;
- Lee Morgan;
- Phillip Chatfield;
- Jyron Chatfield;
- Hayden Harradine;
- Mundara Clark.

5.2. Aims of the Complex Assessment

The Aboriginal Heritage Regulations 2018 (r. 64) state that a Complex Assessment is required in circumstances where a Desktop Assessment or Standard Assessment show that Aboriginal cultural heritage is, or is likely to be, present in the activity area; and it is not possible to identify the extent, nature, and significance of that Aboriginal cultural heritage unless a Complex Assessment is carried out. In this instance, subsurface testing (Complex Assessment) of the activity area was required to:

- Determine whether as yet unrecorded Aboriginal cultural heritage occurs within subsurface deposits within the activity area;
- Assess the extent and nature of any subsurface Aboriginal cultural heritage (if present); and,
- Test the archaeological sensitivity of the gently undulating plain and dissected plain landforms in the activity area, and the context of any subsurface cultural heritage (if present).

5.3. Method and Coverage

Subsurface Testing Methodology

The subsurface testing method was developed in consultation with EMAC (see Section 2.5) and involved the manual excavation of excavation pits (EPs), shovel test pits (STPs) and radial STPs. These sought to determine the stratigraphy of the dissected plain and gently undulating plain landforms in a controlled manner and to investigate their archaeological sensitivity.

Testing was not undertaken in the northernmost part of the activity area, north of East and West Road, as there is currently no plan for works to be undertaken in the area. Testing was also not undertaken in the southernmost part of the activity area, south-east of Timboon-Peterborough Road, due to the disturbance caused by previous gasworks in the area and the presence of an extant high pressure gas pipeline within the proposed works corridor.

As discussed and agreed in the RAP meeting held on the 7 February 2023 and 11 July 2023, the subsurface testing program addressed the proposed pipeline corridor, areas likely to be identified as alternative corridor alignments, should adjustments to the route be required and the location of the MCFT wellsite. The following methodology was applied to the subsurface testing program:

- Two 1 x 1 m EPs were to be excavated within the activity area – one on each landform and targeting areas of higher ground in the vicinity of creeks. An additional 1 x 1 m EP was to be excavated at the MCFT well site. EPs were to be excavated by shovel to an underlying culturally sterile deposit, proceeding in 100 mm spits. If *in situ* Aboriginal cultural heritage was located, excavation was to thereafter proceed by trowel in 50 mm spits;
- 50 x 50 cm STPs were to be manually excavated at 250 m intervals along the proposed pipeline corridor, with two additional STPs to be excavated on land in the north west (STPs 23 and 25) in case of adjustments to the proposed pipeline corridor. More intensive STPs were undertaken around Leech Creek due to the identification of Aboriginal cultural heritage on the east side of the Creek. These STPs were excavated to allow for the possibility of shifting the gas pipeline to avoid Aboriginal cultural heritage.
- Extent testing in the form of radial 50 x 50 cm STPs at 5 m intervals along the cardinal points was to be undertaken for EPs and STPs containing two or more stone artefacts, to single negatives. Those radial STPs containing one or more artefacts would be subject to further STP radials;

- Written and photographic documentation was prepared for each EP and STP. This included the taking of pH readings to test for the acidity of the deposits (the greater the acidity, the lower the chances of bone preservation) and Munsell chart readings of the deposits to standardise colour descriptions;
- The locations of all Aboriginal cultural heritage (if present) identified during excavation was to be documented prior to its removal for further analysis and cataloguing;
- All Aboriginal cultural heritage identified during subsurface testing (if present) was to be individually catalogued and collected; and,
- A dGPS was used to record EP, STP and radial STP locations and the location of any identified Aboriginal cultural heritage (if present).

Coverage

A total of three EPs, thirty-eight STPs, and nine radial STPs were excavated during the subsurface testing program. The locations of EPs, STPs and radial STPs are shown in Figure 24. A description of EPs 1 & 2, which are considered representative of the stratigraphy of the dissected plain and gently undulating plain landforms within the activity area are provided in Tables 6 & 7. A description of STP 33 (EP2 R05), from which two artefacts were recovered, is provided in Table 8. A single stone artefact was also recovered from EP 2, and STP 33 represents one of the radial STPs excavated in its vicinity.

A detailed description of all EPs and STPs is provided in Appendix 5.

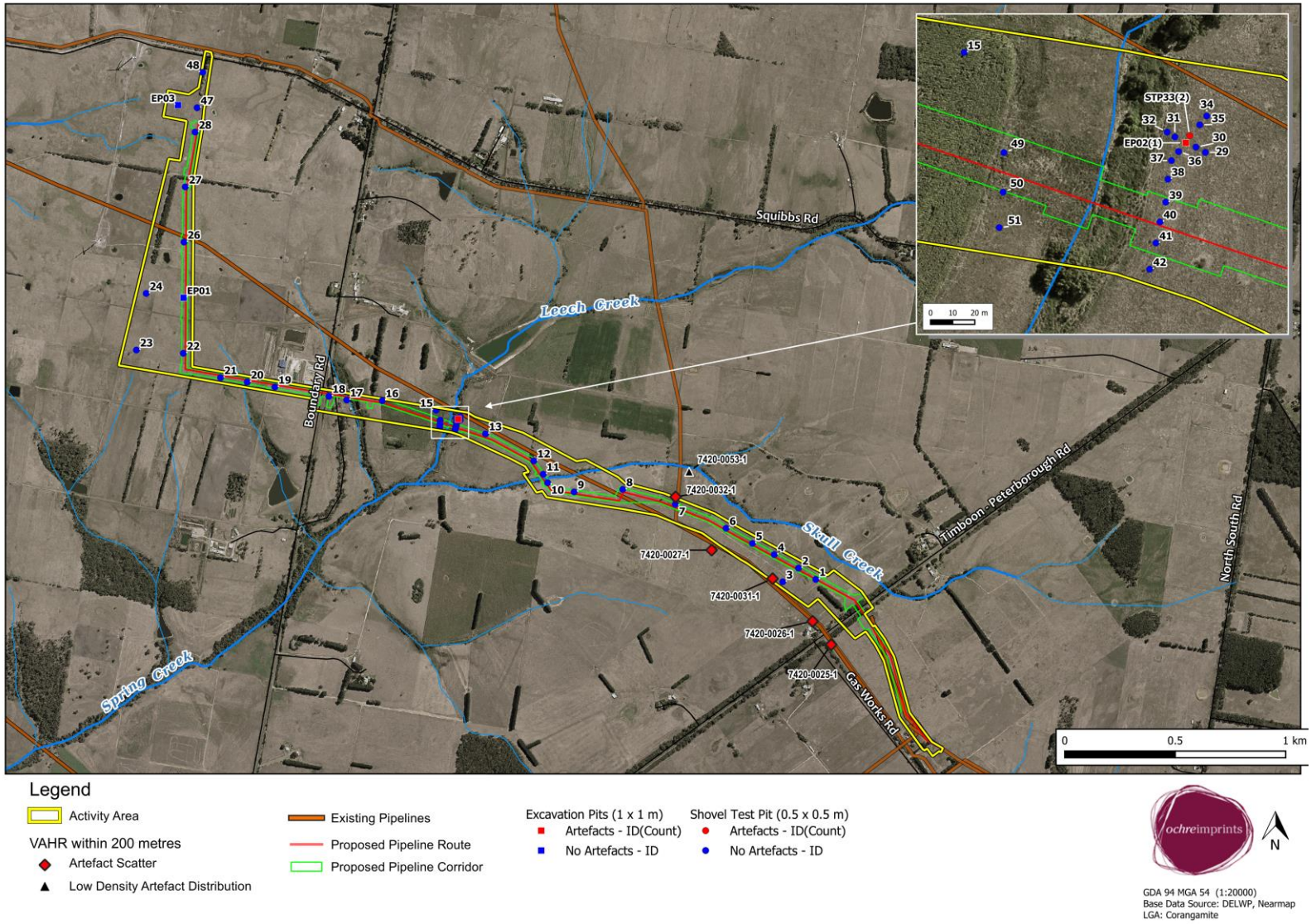


Figure 24: Complex Assessment results.

Table 6: Results of EP 1.

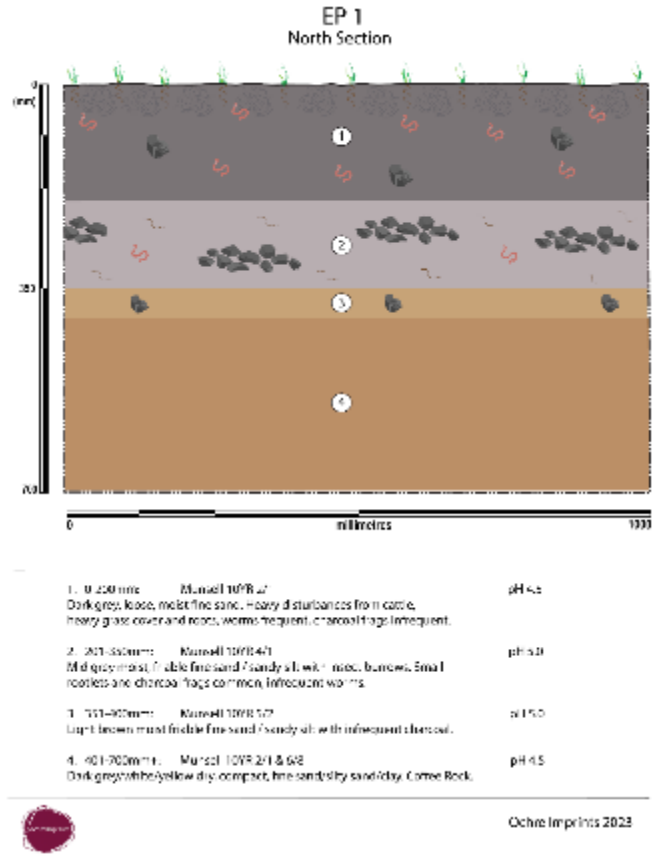
Excavation Pit 1 (1 X 1 m) Gently Undulating Plain	**Grid Reference GDA 94** **MGA Zone 54** E 667239 N 5732686
Soil Horizons 0-200 mm: Munsell 10YR 2/1 pH 4.5 Dark grey moist fine sand / sandy silt with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, charcoal fragments. 201-350 mm: Munsell 10YR 4/1 pH 5.0 Mid grey moist friable fine sand / sandy silt with insects and insect burrows. Small rootlets common, infrequent worms, charcoal fragments. 351-400 mm: Munsell 10YR 5/2 pH 5.0 Light brown moist friable fine sand / sandy silt with infrequent charcoal fragments. 401-700 mm +: Munsell 10YR 2/1 & 6/8 pH 4.5 Dark grey/white/yellow, dry, compact fine sand /silty sand and clay. Coffee rock.	**Maximum Depth:** 700 mm **Disturbance**: Heavy stock trampling, burrowing insects, charcoal and roots. **Obstacles**: None.
Aboriginal Cultural Heritage: None.	
	EP 1 North Baulk 

Table 7: Results of EP 2.

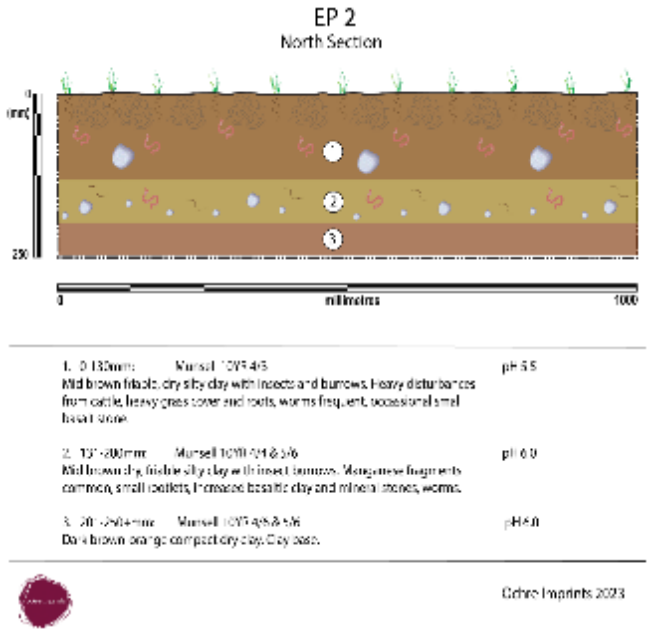
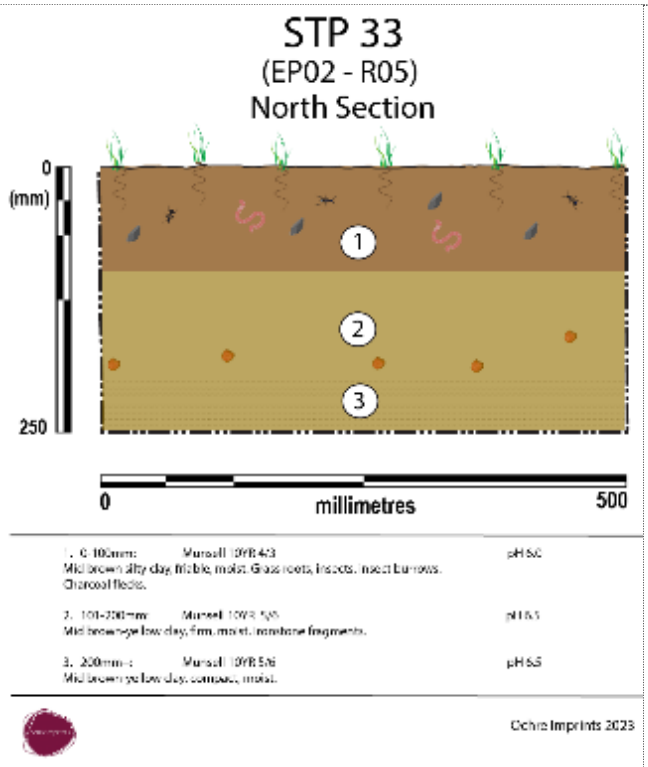
Excavation Pit 2 (1 X 1 m) Dissected Plain (low to moderate slope on a creek gully)	**Grid Reference GDA 94** **MGA Zone 54** E 668482 N 5732118
Soil Horizons 0-130 mm: Munsell 10YR 4/1 pH 5.5 Mid brown dry, friable silty clay with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, occasional small basalt stone (basaltic clays). 131-200 mm: Munsell 10YR 4/4 & 5/6 pH 6.0 Mid brown-yellow dry, friable compact silty clay with insects and insect burrows. Small rootlets, increased basaltic clay and mineral stones, worms, yellow mottle. Manganese fragments. 201-250 mm+: Munsell 10YR 4/6 & 5/6 pH 6.0 Dark brown dry compact clay.	**Maximum Depth:** 250 mm **Disturbance**: Heavy stock trampling, insect bioturbation, roots, agricultural material (manganese). **Obstacles**: None.
Aboriginal Cultural Heritage: 1 x silcrete artefact recovered from 50 mm depth.	
	EP 2 North Baulk 

Table 8: Results of STP 33 (EP2 R05).

Shovel Test Pit 33 (50 x 50 cm) Dissected Plain	**Grid Reference GDA 94 MGA Zone 54** E 668484 N 5732120
Soil Horizons 0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks. 100-200 mm: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, firm, moist. Ironstone fragments 200 mm + Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist	**Maximum Depth:** 200 mm **Disturbance**: Grass roots, insects, insect burrows. **Obstacles**: None.
Aboriginal Cultural Heritage: 2 artefacts recovered from a depth of 0-100 mm.	
	STP 33 East to top 

5.4. Assessment Results

5.4.1. Stratigraphy of landforms

The Complex Assessment resulted in the excavation of a 14.75 sqm area across the activity area. A detailed description of all EPs and STPs is provided in Appendix 4. The stratigraphy of the gently undulating and dissected plain landforms are discussed below and depicted in Tables 6 & 7.

Gently Undulating Plain

The soil profile of the gently undulating plain was characterised in EP1 by a dark grey, loose and moist fine sand topsoil to approximately 200 mm depth which had been heavily disturbed by cattle treading, and whose surface was heavily grassed, and which contained thick roots, frequent worms and charcoal fragments. Below this topsoil was a deposit of mid-grey moist, friable, fine sand / sandy silt with evidence of disturbance via the presence of insects and their burrows. Charcoal fragments were also common in this stratigraphic layer, which continued to a depth of approximately 350 mm. A light brown layer of fine sand / sandy silt with some charcoal fragments lay beneath this, to a depth of around 400 mm. Beneath this was a dark grey/white/yellow dry, compact fine sand / silty sand and clay layer comprised largely of coffee rock. STPs excavated across this landform displayed a generally similar stratigraphic profile, with topsoils ranging in depth from 100 to 360 mm, and basal coffee rock and / or clay layers present from depths between 450-750 mm. STPs 47-48 and EP3 (excavated on gently undulating plain at the MCFT well site) had a slightly different soil profile to that described above. Soil profiles at the well site comprised dark grey silty sand to a depth of 200mm, overlying white sand to depths between 200-450mm, overlying mottled brown and orange clay mixed with coffee rock at a depth of 500mm. All coffee rock / basal clay horizons were considered to be soil layers deposited pre-Aboriginal occupation of the activity area.

Dissected Plain

The soil profile of the dissected plain was characterised by mid-brown silty clay, overlying sterile brown-orange clay at depths between 200- 250 mm. STPs excavated across this landform displayed a generally similar stratigraphic profile, with mid brown silty clay, overlying basal clay layers present from between 160-400 mm. All coffee rock / basal clay horizons were considered to be soil layers deposited pre-Aboriginal occupation of the activity area.

Table 9: Excavated area and volume by landform.

Landform	Excavated Sediment Volume (m^3)	Excavated Area sqm	Number of Artefacts	Average Artefact Density per m^2 (m^3)
Dissected Plain	2.8	4	3	0.75 (1.07)
Gently Undulating Plain	7.65	18	0	0
Total	10.45	22	3	**0.75 (1.07)**

5.4.2. Aboriginal Cultural Heritage in the Activity Area

Aboriginal cultural heritage in the form of three subsurface stone artefacts were identified in the upper 100 mm of soils in EP2 (n=1) and one of its radials, STP 33 (n=2), during subsurface testing (see Figure 24). Results for all EPs, STPs and radial STPs are provided in Appendix 5.

A detailed description of the Aboriginal cultural heritage recorded as a result of the subsurface testing, including a significance assessment, analysis of the stone artefacts and a site plan are provided in Section 6. An Aboriginal place gazetteer is provided in Appendix 4.

Artefact Distribution and Context

The density of stone artefacts for each landform is presented in Table 9. The average subsurface artefact density for the activity area, as determined by the Complex Assessment, was 0.75 artefacts per sqm (or 1.07 per m^3). All three stone artefacts were recorded on the dissected plain landform within 30m of Leech Creek. One artefact was recovered from a 1 x 1 m EP, and two from a 50 x 50 cm STP. All stone artefacts were recovered from the upper 100 mm of soil and are thus considered to have been affected by agricultural and pastoral practices in the historical period – such as stock trampling and ploughing, as well as potentially other historical land use practices associated with the use of the activity area for pastoral and agricultural purposes. No Aboriginal cultural heritage was identified on the gently undulating plain landform. The absence of Aboriginal cultural heritage on the gently undulating plain suggests stone artefacts occur at densities less than 0.75 per m^2 on this landform.

Archaeological Sensitivity

The results of the Complex Assessment, along with a consideration of the previous subsurface testing undertaken in the activity area, provides insights into the subsurface distribution of Aboriginal cultural heritage – finding that subsurface artefact density is generally very low in the activity area. Overall, subsurface deposits were found to be shallow, diffuse and likely subject to some degree of historical disturbance. A number of observations were made about the archaeological testing of the activity area:

- the Desktop Assessment identified one previously recorded Aboriginal place within the activity area, VAHR 7420-0031, a single marine chert flake identified and collected during grading of a pipeline easement. This place which is situated within the dissected plain landform on the upper margin of elevated land overlooking Skull Creek was subsequently reassessed as part of CHMP 13060, which was unable to identify any Aboriginal cultural heritage in its vicinity. CHMP 13060 MM4 permitted part or all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16);
- the Desktop Assessment identified that low density stone artefact scatters and isolated finds in surface or shallow subsurface contexts (often discovered during monitoring of grading activities) were the most commonly recorded Aboriginal cultural heritage in the geographic region;
- the Desktop Assessment identified the elevated land in the vicinity of watercourses as being of increased Aboriginal archaeological potential compared to the surrounding area, and plains, floodplains and slopes/rises as landforms on which artefacts have been identified in the geographic region;
- The Standard Assessment identified two distinct landforms in the activity area – a gently undulating plain and a dissected plain rated as having low archaeological sensitivity. Land in vicinity to Leech and Skull Creek were identified as areas of increased archaeological potential;
- Aboriginal cultural heritage material identified during the Complex Assessment was located on the dissected plain landform, on elevated land within 30m of Leech Creek, suggesting proximity to water was a factor in the distribution of Aboriginal stone artefacts in the activity area, and confirming the increased sensitivity of elevated land adjacent to water sources;
- Subsurface testing undertaken nearest to VAHR 7420-0031 (STPs 1-5) did not identify any Aboriginal cultural heritage, and all recorded heavy disturbance to the topsoil, caused by cattle trampling;

- the stratigraphy of both the undulating and dissected plain landforms showed evidence of heavy disturbance to the topsoil caused by cattle as well as the actions of insects, and this heavily disturbed stratigraphic layer was where artefacts were recovered from;
- all known Aboriginal cultural heritage material in the activity area, including VAHR 7420-0031 identified prior to this CHMP during grading activities, was recovered from the upper 300 mm of soil, and was thus likely to have undergone a degree of disturbance relating to historical land use activities such as ploughing and stock trampling; and
- the density of stone artefacts in the activity area is generally very low, with 3 artefacts recovered from 14.75 sqm of excavated soils – equivalent to 0.75 artefacts per m^2.
- The low density of stone artefacts in the activity area mirrors the findings of the Desktop Assessment which had all Aboriginal places in the geographic region contain 12 or less stone artefacts.

These results demonstrate the slightly increased archaeological sensitivity of the dissected plain, and particularly of land in close proximity to creeks, but that the overall archaeological sensitivity of the activity area is very low. The archaeological sensitivity of the activity area is discussed in greater detail in Section 6.5.

5.5. Conclusion

A total of three stone artefacts were identified within the activity area during the Complex Assessment, registered as LDAD VAHR 7420-0063. Three EPs (1 x 1 m), and thirty seven STPs (including nine radial STPs) were excavated across the gently undulating plain and dissected plain landforms that make up the activity area during the Complex Assessment, representing a spatial area of 14.75 sqm.

The stratigraphy of the gently undulating plain was found to be largely comprised of a dark grey, heavily disturbed topsoil over a mid-grey fine sand / sandy silt layer, with a basal layer comprised of a compact mineral pan and/or coffee rock at a depth of between 400-1000 mm. No Aboriginal cultural heritage was identified within the undulating plain landform during the Complex Assessment.

The dissected plain in the activity area contained shallower soils, and was found to be generally comprised of a mid to dark brown, heavily disturbed topsoil to approximately 100 mm (and up to 220 mm) depth, atop a mid to light brown or grey silty clay layer containing small basalt stone, atop a basal mottled clay ranging in colour from black-orange to brown, to yellow, present from between 160 mm and 350/400 mm in depth. Aboriginal cultural heritage in the form of flaked stone artefacts were recovered from the top 100 mm of soil during the

Complex Assessment, and during previous monitoring work were likely also confined to the top 300 mm of soil (depth not recorded, identified during grading activities).

There is no evidence for intensive use or occupation of any part of the activity area, and it is likely that the activity area was travelled over and used as an occasional stopping point between more favourable locations potentially associated with larger watercourses in the wider region.

The absence of stone artefacts across the majority of the activity area indicates that if Aboriginal cultural heritage occurs across the wider undulating or dissected plain, it is at such low densities that it could not be detected during the Complex Assessment.

6. ABORIGINAL CULTURAL HERITAGE

6.1. Introduction

This section provides a full description of Aboriginal places in the activity area including a significance assessment and an analysis of the lithic assemblage. The archaeological sensitivity of the activity area is also assessed in this section.

6.2. Aboriginal Cultural Heritage

The details of the assessment of the Aboriginal cultural heritage that informed an analysis of the nature, extent and scientific significance of Aboriginal places in the activity area are provided in Sections 4 and 5. A lithic analysis is presented below. A full significance assessment is provided in Section 6.4. No radiometric or optically stimulated luminescence (OSL) dating has been undertaken as part of the CHMP as no datable material was identified during the assessment.

A total of one previously recorded Aboriginal place (isolated artefact VAHR 7420-0031) is located within the activity area, and three stone artefacts were identified during the Complex Assessment undertaken to inform this CHMP, which has been registered as LDAD 7420-0063 (components 1-3). VAHR 7420-0031 and VAHR 7420-0063 are described in section 6.2.1. below.

Krista Whitewood (Ochre Imprints) catalogued the subsurface stone artefacts identified during CHMP 18865. A brief analysis of the lithic assemblage is presented in Section 6.2.2 below. A full artefact catalogue is provided in Appendix 6.

6.2.1. Description of Aboriginal Places

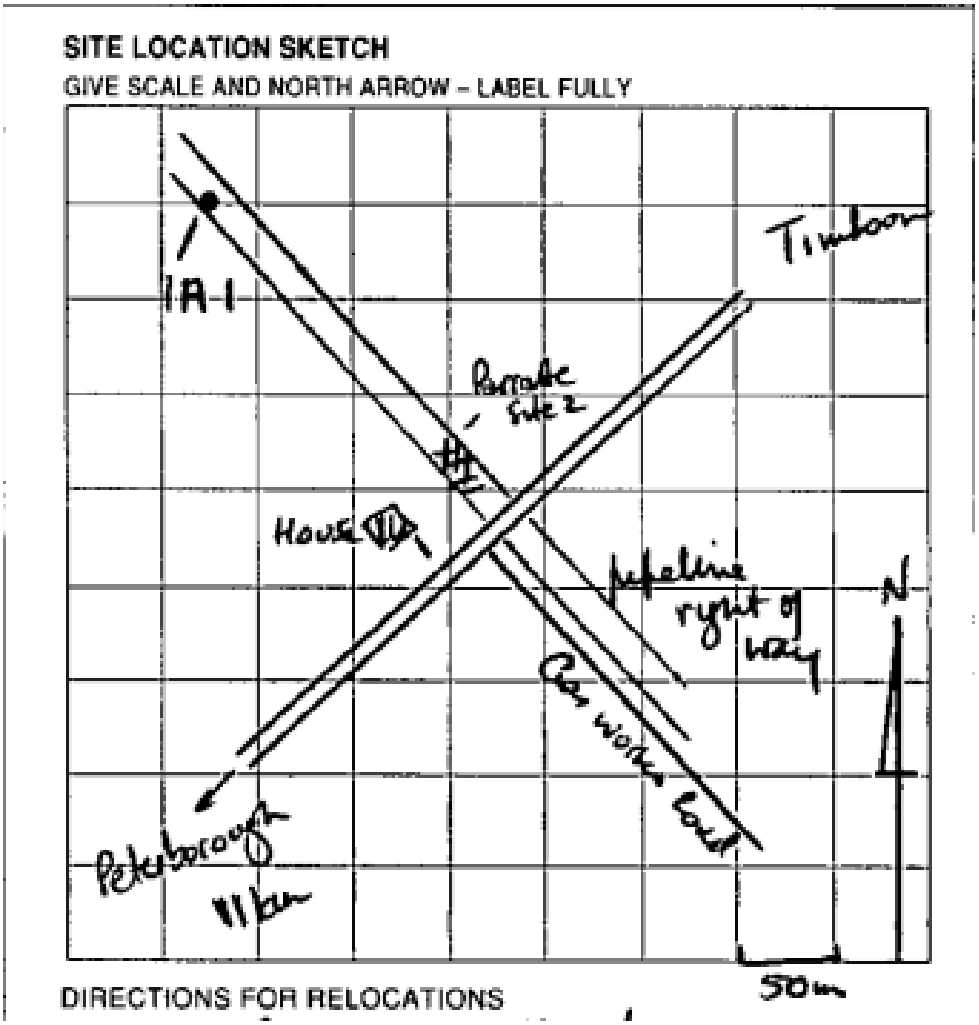
The two Aboriginal places located within the activity area are described in Tables 10 & 11, and

Figure 25 shows the location of these places within the activity area.

Figure 25: Location of VAHR within the activity area.

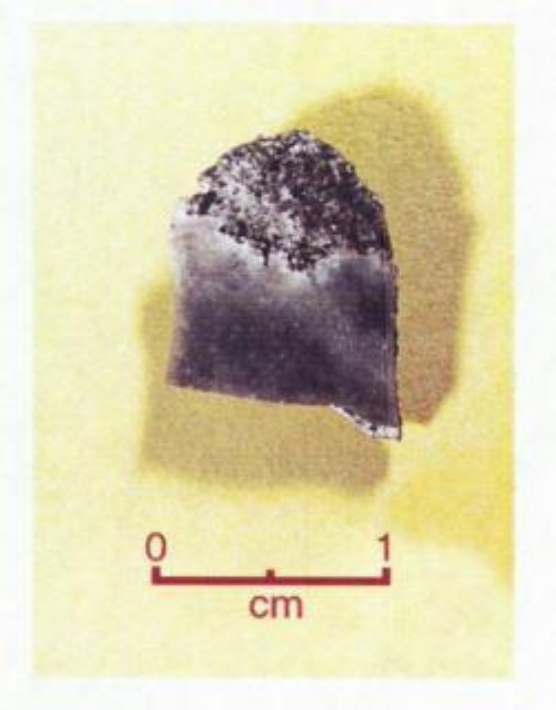
Table 10: Description of VAHR 7420-0031.

VAHR No.	**Cadastral Description:**
VAHR 7420-0031	Parish of Paaratte, County of Heytesbury, Shire of Corangamite
Paaratte IA 1	CT6791 Folio 024 (642-742 Timboon-Peterborough Rd, Paaratte)
Type: Artefact Scatter (Isolated Artefact) – no photo available **Context:** Surface material **Density:** Not applicable	**Context** and **Condition:** This Aboriginal place is comprised of one marine chert flake, found on flat land roughly 260 m south of Skull Creek. The artefact was identified on a cleared right of way following grading for a gas pipeline. The artefact was collected and lodged with Framlingham Aboriginal Trust. An inspection of the location of the recorded place was undertaken as part of CHMP 13060. No Aboriginal cultural heritage material was identified at the site, and MM4 of CHMP 13060 permitted part or all of this Aboriginal place to be harmed by the proposed pipeline works (Lane *et al* 2015: 16). No Aboriginal cultural heritage was identified in the vicinity of this Place during the course of the field assessment for this CHMP.
Primary Grid Coordinate: MGA 54 GDA 94 E 669905 N 5731396	**Contents/Stone Artefact Assemblage** and **Archaeological Significance**: VAHR 7420-0031 is of high cultural significance to the Traditional Owners and was rated as having low scientific significance (see Section 6.4 for further details). The lithic assemblage comprised: Raw material: coastal flint (n=1) Primary Forms: flake (n=1)



VAHR 7420-0031 site plan

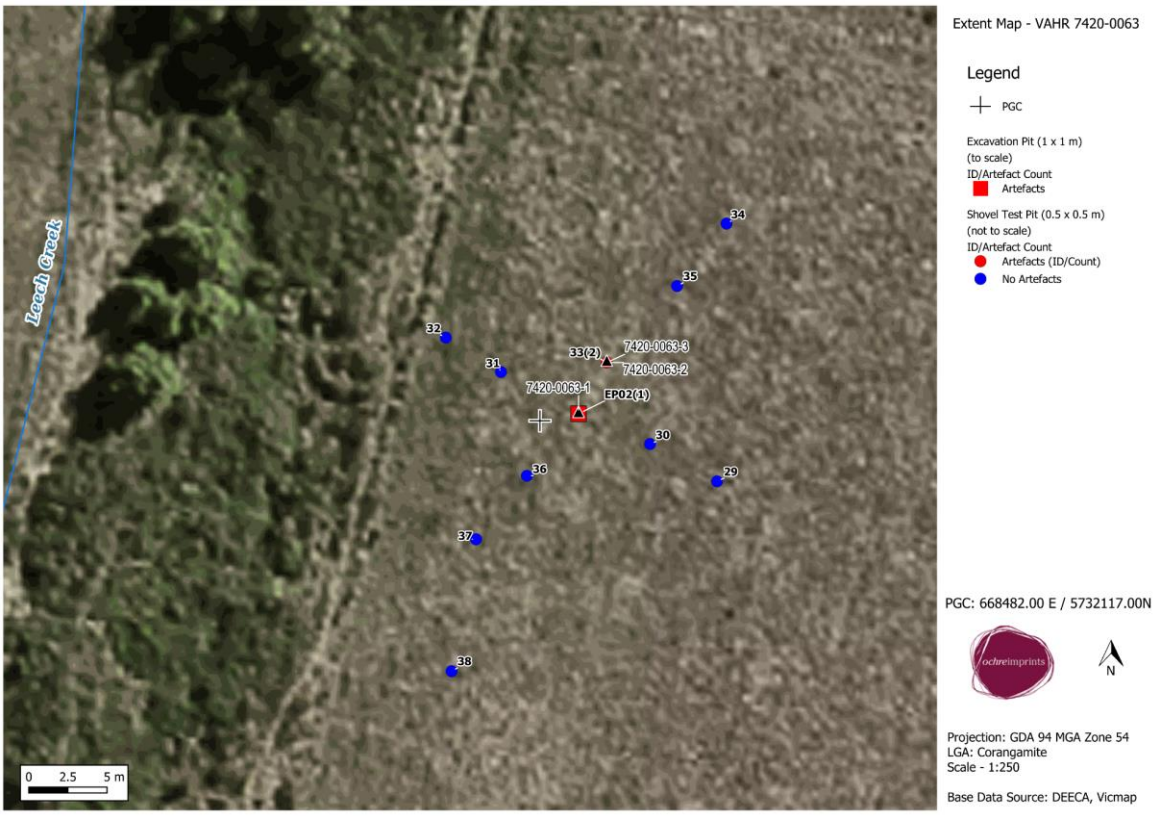
VAHR 7420-0031 location facing north



VAHR 7420-0031

Table 11: Description of VAHR 7420-0063 LDAD.

VAHR No.	**Cadastral Description:**
VAHR 7420-0063	Parish of Paaratte, County of Heytesbury, Shire of Corangamite
HUGS Pipeline LDAD	Boundary Road, Timboon West
Type: Low Density Artefact Distribution (LDAD) **Context:** Subsurface material **Density:** Not applicable	**Context** and **Condition:** This Aboriginal place comprises three flaked stone artefacts recovered from STP 33 (components 2-3) and EP 2 (component 1) on Leech Creek embankment (sloping land), approximately 30m east of the Creek line. The artefacts were identified in shallow subsurface contexts (100 mm depth) during subsurface testing undertaken for this CHMP. Soil profiles on this landform generally comprised mid to dark brown silty clay between depths of 100- 220mm, overlying mid to light brown or grey silty clay, overlying mottled black, orange to brown, yellow sterile clay at depths between 160 mm and 400 mm. European inclusions such as plastic and glass were identified in the top 0-100mm of soil. All stone artefacts were recovered from the upper 100 mm of soil. It is therefore considered likely that they will have been subject to a degree of disturbance by historical land use practices associated with the use of the area as farmland (clearing, ploughing, stock trampling).
Primary Grid Coordinate: MGA 54 GDA 94 E 668482 N 5732117	**Contents/Stone Artefact Assemblage** and **Archaeological Significance**: VAHR 7420-0063 is of high cultural significance to the Traditional Owners and was rated as having low scientific significance (see Section 6.4 for further details). The lithic assemblage comprised: <u>Raw material</u>: quartzite (n=2) silcrete (n=1) <u>Primary Forms</u>: core (n=2) flake (n=1)



VAHR 7420-0063 site plan

VAHR 7420-0063, EP 2 facing north.

VAHR 7420-0063 artefacts.

6.2.2. Stone Artefact Analysis

This section details the results of the analysis of the three flaked stone artefacts identified and recorded during the Complex assessments for CHMP 188654. These artefacts were registered as one Aboriginal place, VAHR 7420-0063 (LDAD), identified a subsurface context.

The section concludes with a brief comparison to recorded Aboriginal cultural heritage places across the geographic region, as reviewed in the Desktop Assessment.

Recorded artefact attributes

The recorded artefact attributes are based on those outlined in the *AV Standards for Recording Victorian Aboriginal Heritage Places and Objects* (DPC 2008) and guidelines for recording *Low Density Artefact Distributions* (DPC 2013). All stone artefacts were measured

to the nearest hundredth of a millimetre using electronic callipers. A 20x magnification hand lens was used to identify the presence of macroscopic edge modification.

Limitations in analysis

Stone artefact assemblages are the most durable remains of past human activity, and often form the basis of our understanding of archaeological sites. However, there are limitations in their study to understand human behaviour. Over decades of research, including careful observation of, and collaboration with, Indigenous stone workers, archaeologists have demonstrated that much of the variation in Australian stone tool assemblages can be explained by the proximity to and availability of raw materials, and their original form and flaking properties. In other words, there is no clear link between assemblage composition and site function (Holdaway & Stern 2004: 71).

The way a site forms, and the physical impacts to the site over time ('post-depositional processes'), also influences the composition of stone artefact assemblages. The abandonment, loss or discard of stone artefacts results in their falling out of a system (Ammerman & Feldman 1974; Schiffer 1972, 1976, 1996) and the creation of archaeological sites. However, it also means that the archaeological record only contains the parts of a living system that were disconnected and subsequently preserved at a particular location (Binford 1980: 5). Post-depositional processes, such as wind and water erosion, can remove items subsequently from an assemblage – or introduce them. In general, a lack of fine- grained contextual information (e.g. X, Y and Z co-ordinates for individual artefacts) precludes a detailed spatial analysis to investigate whether disturbance to the site has moved artefacts vertically or horizontally. Lastly, strategies for the recovery of material – that is, how stone artefacts are collected in the field – also affect assemblage composition.

What stone artefact analysis can tell us, when field methods are rigorous, is how certain raw materials were exploited, what type of stone-working techniques were employed, and which kinds of tools were made. Intact archaeological deposits provide a tangible link to a discrete moment in the distant past when a person used his or her skills to knap a piece of stone, to make workable stone tools for use in everyday life. This tangible link holds great value to both Indigenous and non-Indigenous people.

Age estimates

Unless dated material can be unequivocally associated with stone artefacts or used to generate bracketing age estimates for the stratigraphic unit from which the artefacts originated, no age estimates can be generated for an assemblage. In some instances, the geological feature with which the assemblage is associated can indicate the time period of

discard. No material suitable for dating was identified during the Standard and Complex Assessments for CHMP 18865.

A stratified deposit provides a good basis for investigating technological change over time. In the past, the presence of certain types of cores and tools was used to denote the age of an assemblage in Australia. For example, backed blades and geometric microliths were ascribed to the Australian Small Tool Tradition (ASTT; Gould 1969), which was thought to date to the last 5,000 years. However, more recent studies have identified backed artefacts in much older deposits, reinforcing the notion that tool typologies are not reliable indicators of the age of Australian assemblages. No artefacts that can be unequivocally tied to the ASTT were identified in the assemblage uncovered during the field assessment for CHMP 18865.

Analysis Results

VAHR 7420-0063 Assemblage

The VAHR 7420-0063 assemblage is comprised of three flaked stone artefacts recovered from subsurface contexts in STP33 and EP2 which are situated 5m apart. Subsurface artefacts (n=3) at this place were recovered from mid brown friable silty clay soils at a depth of 0 -100 mm. The dominant raw material in the assemblage is quartzite, with 66.67% or two of the three recovered artefacts manufactured on this material. The remaining artefact was manufactured on silcrete. The assemblage contained two cores (one unidirectional, one bidirectional) and one complete flake. The flake displayed a flaked platform and feather termination.

Maximum dimensions for the artefacts ranged from 32 mm to 9 mm. The small size of the stone artefacts generally suggests they were most likely associated with the ASTT, and manufactured during the Holocene period (although, as discussed above, relative dating using artefact typology can be problematic).

The small size of this assemblage, the absence of other Aboriginal places recorded at the same time and with the same methods, and the disturbed context of the site which limited subsurface testing makes it difficult to make any interpretative statements at this stage.

Comparison with other Aboriginal places recorded in the geographic region

The VAHR 7420-0063 assemblage is typical of the type of places found commonly across the geographic region. The vast majority of the Aboriginal cultural heritage places recorded in the region have been registered as artefact scatters or LDADs, and many of the artefact scatter sites recorded in the past, if recorded today, would be defined as LDADs. Artefact density at recorded sites across the region is generally very low, and many Aboriginal places consist of small assemblages of fewer than 10 artefacts, including a number of isolated finds of between

1-3 artefacts (Barker 2011; Liro & Grinter 2018: iv; Schell & Wines 2008: 82-7). The small number of artefacts recorded as VAHR 7420-0063 is thus typical of Aboriginal places recorded in the surrounding region.

VAHR 7420-0063 comprises artefacts recovered from a shallow subsurface context in soils described as silty clay and containing evidence of bio and faunalturbation due to the presence of grassroots and insects and obvious disturbance from cattle trampling. Similarly, Aboriginal places in the geographic region typically comprise shallow subsurface artefacts whose soils display evidence of disturbance in the form of bioturbation, ploughing, clearing and stock trampling (Barker 2011: 10; Schell & Wines 2008: 7; Schell & Howell-Meurs 2005: 21). The location of VAHR 7420-0063 on a dissected plain landform in proximity to a watercourse is also typical of previously recorded sites in the wider region (Barker 2011: 102; Liro & Grinter 2018: 116; Schell & Howell-Meurs 2005: 2).

The raw materials quartzite, and silcrete, which make up the materials of VAHR 7420-0063, are present at other places locally, although quartzite is not as common as silcrete among artefacts at previously recorded places (Barker 2011: 99, 102; Brown 1996: 14; Liro & Grinter 2018: 117; Schell & Wines 2008: 82-7; Schell & Howell-Meurs 2005: 20). Assemblages of the geographic region generally contain few formal tools, with flakes and flaking debris the most commonly recorded artefact types (Tuechler & Barker 2014: 31; Liro & Grinter 2018: 117). Although the assemblage at VAHR 7420-0063 is too small to make detailed comparisons about its composition, the absence of formal tools and small size of the artefacts, suggestive of the ASTT, is not unusual for assemblages recorded locally.

6.3. Information Provided by RAPs or Other Persons

None of the Aboriginal stakeholders who were involved in the preparation of the CHMP provided any specific information about the Aboriginal cultural values in the activity area.

6.4. Significance of Aboriginal Places

The significance of Aboriginal cultural heritage in the activity area is described within a framework provided by ‘The Burra Charter’ (Australia ICOMOS Burra Charter 2013), which defines aesthetic, historic, scientific, social and spiritual values. A general statement of the significance for each value is presented below. This is based on the results of the assessment undertaken as part of this CHMP.

Aesthetic values: while the aesthetic value of the activity area has been altered by European land use practices it is likely to retain some important aesthetic values to Aboriginal people.

Historic values: The activity area is important as a place which has evidence of Aboriginal occupation and where aspects of Aboriginal people's association with the area have been clearly demonstrated.

Social values: Landforms in the activity area and associated flora and fauna resources have value to Aboriginal people.

Spiritual values: Aboriginal people continue to have spiritual connections to their country and Aboriginal places that occur within it.

Scientific values: Bowdler (1984) developed a method for the assessment of scientific significance through ranking the contents, condition, and representativeness of individual Aboriginal places. This method has been used as a basis – although it has been slightly modified – for assessing the scientific significance of VAHR 7420-0063 and VAHR 7420-0031.

The results of the scientific significance assessment are presented in Table 12. The significance determination may change on the basis of future research and analysis.

VAHR 7420-0031. Artefact scatter was rated as having **low** scientific significance based on limited range of cultural material and the relatively common occurrence of this type of Aboriginal place in the region.

VAHR 7420-0063 LDAD was rated as having **low** scientific significance based on the small and disparate nature of the LDAD and the relatively common occurrence of this type of Aboriginal place in the region.

Table 12: Scientific significance of Aboriginal places in the activity area

VAHR No.	Place Type	Place Contents	Place Condition	Represent-ativeness	Scientific Significance
7420-0031	LDAD	**1**	**0**	1	2 (low)
7420-0063	LDAD	1	2	1	4 (low)

Key:

Place Contents: 0 – No remnant cultural material; 1 – Limited range and / or low number (e.g. 0-10 stone artefacts) of cultural material; 2 – Moderate range and/or density of cultural material; 3 – High density and diverse range of cultural material and/or presence of rare artefact types.

Place Condition: 0 – Place destroyed; 1 – Place displaced / eroded from original context; 2 – Place contains some remnant *in situ* or intact components (surface or subsurface); 3 – Place is predominantly *in-situ* or intact (surface or subsurface).

Representativeness: 1 – Common occurrence; 2 – Occasional occurrence; 3 - Rare occurrence.

Scientific Significance: 1-4 Low scientific significance; 5-7 Moderate scientific significance; 8-9 High scientific significance.

6.5. Archaeological Sensitivity of the Activity Area

Archaeological places frequently consist of buried deposits of material, which are not visible on the ground surface due to a range of factors (cf. sedimentation, vegetation cover, etc.). It is usually not possible to identify every archaeological place within a given area due to these factors, or because the size of an area is too large to survey fully. Most heritage impact assessments rely on predictive modelling to define areas of archaeological sensitivity.

An area of Aboriginal archaeological sensitivity potentially contains Aboriginal cultural heritage. Areas of archaeological sensitivity are rated from low to high, depending on the relative probability that archaeological deposits will be present. The known registered Aboriginal place distribution and the types of landforms present influence the end rating. The conditions that *generally* apply for each rating level that is used in the report are described below, though it is stressed that other factors may come into play depending on the individual area.[4]

Low: No registered Aboriginal places are present or Aboriginal places are confined to single stone artefacts or Low Density Artefact Distributions (LDAD). Landforms in the activity area are not known to be associated with Aboriginal places (aside from isolated stone artefacts) in the wider region.

Moderate: No registered Aboriginal places or registered Aboriginal places of low-moderate significance are present. Landforms in the activity area are not known to be associated with Aboriginal places in the wider region.

High: No registered Aboriginal places or registered Aboriginal places of moderate to high significance are present. Landforms in the activity area are known to be associated with significant Aboriginal places in the wider region.

As a result of the desktop and field assessment undertaken to inform this CHMP, the Aboriginal archaeological sensitivity of the activity area has been rated as low. This result is due to the general paucity of Aboriginal cultural heritage recorded across the region and the nature of the type of material that has been recorded to date: low density scatters and isolated artefacts in shallow subsurface contexts which have often been subject to heavy disturbance from stock trampling, agriculture and construction. If present, Aboriginal cultural heritage would occur in the form of isolated stone artefacts / low density artefact distributions, likely outside of their original context.

[4] For instance, an area may contain registered Aboriginal scarred tree places, but the potential for any other places to occur in the area may be non-existent due to the absence of further mature trees.

6.6. Areas Likely to Contain Aboriginal Cultural Heritage

Aside from the area immediately adjacent VAHR 7420-0063, there are no areas with increased likelihood to contain Aboriginal cultural heritage in the activity area that will not be impacted by the proposed activity.

6.7. Conclusion

This CHMP identified two Aboriginal places that occur in the activity area. VAHR 7420-0031 was previously identified in the activity area during construction of a gas pipeline clear and grade, while VAHR 7420-0063 was identified during the Complex Assessment undertaken to inform this CHMP. Aboriginal places within the activity area are as follows:

- **VAHR 7420-0031** consists of a single marine chert flake identified and collected during grading of a pipeline easement in c. 2016 located on the upper part of a rise c.230 m from Leech Creek. This Aboriginal place was reassessed as part of CHMP 13060, which was unable to identify any Aboriginal cultural heritage in its vicinity. CHMP 13060 MM4 permitted part or all of this Aboriginal place to be harmed by proposed gas pipeline works (Lane *et al* 2015: 16). No Aboriginal cultural heritage was identified in the vicinity of this place during the course of the field assessment for this CHMP.
- **VAHR 7420-0063** consists of three flaked stone artefacts of quartzite and silcrete recovered from a shallow subsurface context (to 100 mm depth) on a dissected plain landform close to Leech Creek. Artefacts were recovered from two locations – an EP and STP, and the soils from which they were recovered had been subject to cattle trampling and disturbance by grassroots and insect activities. This place was identified and recorded as part of the Complex Assessment for CHMP 18865.

7. CONSIDERATION OF SECTION 61 MATTERS

CHMPs are required to address matters raised in Section 61 of the *Aboriginal Heritage Act* 2006. These matters concern the management of Aboriginal cultural heritage prior to, during, and after the activity. A discussion of these matters is provided below in relation to VAHR 7420-0063 and VAHR 7420-0031. The location of these Aboriginal places is shown in Figure 26. The matters raised in this section inform the management conditions presented in Section 1.

Section 61a whether the activity will be conducted in a way that avoids harm to Aboriginal cultural heritage.

VAHR 7420-0031: This artefact scatter consists of a single marine chert flake identified and collected during grading of a pipeline easement located on the upper part of a rise c. 230m from Leech Creek. This Aboriginal place has been subject to management by CHMP 13060, which permitted part or all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16). This place will not be impacted by the proposed CHMP 18865 works as it is located outside of the pipeline corridor.

VAHR 7420-0063: This LDAD is comprised of three subsurface artefacts that recovered from one EP and one STP on a plain landform near Leech Creek. The Sponsor has adjusted the pipeline alignment and corridor so that it does not impact this place.

Section 61b if it does not appear to be possible to conduct the activity in a way that avoids harm to Aboriginal cultural heritage, whether the activity will be conducted in a way that minimises harm to Aboriginal cultural heritage.

VAHR 7420-0031: As stated above, this place has been subject to management by CHMP 13060, which permitted part or all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16). Harm will be avoided to this Aboriginal place under CHMP 18865 proposed works.

VAHR 7420-0063: As stated above, harm will be avoided to this Aboriginal place.

Section 61c any specific measures required for the management of Aboriginal cultural heritage likely to be affected by the activity, both during and after the activity.

VAHR 7420-0031: No specific protection and repatriation measures are required to address the management and custody of stone artefacts that are associated with this Aboriginal place.

VAHR 7420-0063: Specific protection and repatriation measures are required to address the management and custody of stone artefacts that are associated with this Aboriginal place.

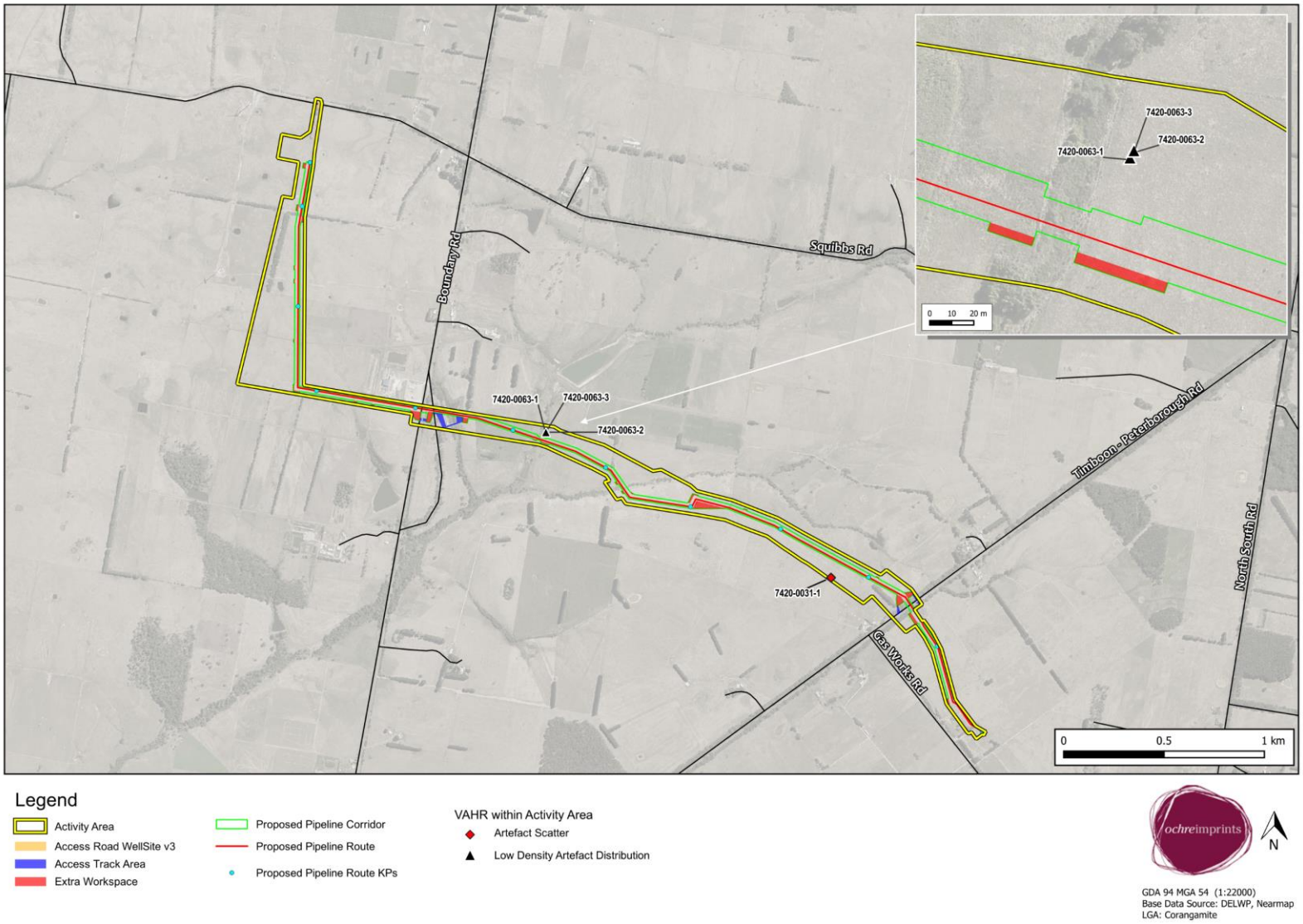


Figure 26: Location of VAHR places over the development plan.

Section 61d any contingency plans required in relation to disputes, delays and other obstacles that may affect the conduct of the activity.

Processes to be followed in relation to delays, disputes, communication and other matters are outlined in the management contingencies (Section 1.3). Procedures are also outlined for other factors that may affect the conduct of the activity, such as contingency measures to deal with the discovery of previously unidentified Aboriginal cultural heritage and suspected human remains.

Section 61e requirements relating to the custody and management of Aboriginal cultural heritage during the course of the activity.

The custody and management of Aboriginal cultural heritage that may be uncovered during the activity is addressed in Section 1.3.

Other Considerations

CHMPs are required to consider the 'cumulative impact' of the activity on Aboriginal cultural heritage in the activity area and in relation to the Aboriginal cultural heritage of the region. Aboriginal Victoria's Guide to Preparing a Cultural Heritage Management Plan states that:

"an assessment of the likely impacts on Aboriginal cultural heritage of the activity should also include consideration and assessment of the cumulative impact of the activity on Aboriginal cultural heritage in the activity area in relation to the Aboriginal cultural heritage of the region (Aboriginal Victoria, 2016)".

The cumulative impact of the activity on Aboriginal cultural heritage

Harm will be avoided to both VAHR 7420-0031 and VAHR 7420-0063, the only known Aboriginal places in the activity area. These Aboriginal places will not be impacted by the HUGS pipeline.

VAHR 7420-0063 may have been impacted by previous land use practices and was disturbed during the Complex Assessment.

VAHR 7420-0031 has been subject to management by CHMP 13060, which permitted part or all of this Aboriginal place to be harmed by the proposed gas pipeline works (Lane *et al* 2015: 16). In addition to this, this place was impacted by construction of an earlier pipeline (c.2016).

The cumulative impact of the activity on Aboriginal cultural heritage of the region.

There has been a moderate level of impact, or impacts planned (according to completed CHMPs), to known Aboriginal places in the geographic region. The majority of Aboriginal places within the region are located along pipeline easements on farmland. Some of these

places have been recorded during monitoring of grading works ahead of pipeline installation and have been subject to salvage as part of the monitoring process.

The impacts to as yet unidentified Aboriginal cultural heritage difficult to quantify, as few Aboriginal cultural heritage assessments have been undertaken in the geographic region. However, the broader area likely retains Aboriginal cultural heritage which will have likely been impacted by some land use practices but may retain some relatively intact components. The impacts to cultural heritage are expected to be due to land clearing, agricultural land use practices and the construction of gas infrastructure. The rural nature of the wider region means that generally speaking, development has been and remains limited and wide areas of land and associated Aboriginal cultural heritage, while subject to impacts from farming, are otherwise relatively protected from harm.

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Google Earth. Accessed November 2021- May 2022.

National Trust Database online. http://vhd.heritage.vic.gov.au/search/nt_search , accessed May 2022.

NatureKit Online interactive mapping . Department of Environment, Land, Water and Planning - https://naturekit.biodiversity.vic.gov.au accessed May 2022.

VicPlan online mapping database https://mapshare.vic.gov.au/vicplan/ , accessed May 2022.

Victorian Resources Online (VRO) http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/vrohome, accessed Mary 2022.

APPENDIX 1: COPY OF 'NOTICE OF INTENT TO PREPARE A CHMP'

VICTORIA State Government | Premier and Cabinet

Notice of Intent to prepare a Cultural Heritage Management Plan for the purposes of the *Aboriginal Heritage Act 2006*

This form can be used by the Sponsor of a Cultural Heritage Management Plan to complete the notification provisions pursuant to s.54 of the *Aboriginal Heritage Act 2006* (the "Act").

For clarification on any of the following please contact Victorian Aboriginal Heritage Register (VAHR) enquiries on 1800-726-003.

SECTION 1 - Sponsor information

Sponsor:	Lochard Energy (Iona Operations) Pty Ltd		
ABN/ACN:	67 608 441 729		
Contact Name:	Jimmy Soni		
Postal Address	Level 10, 2 Southbank Boulevard, Southbank VIC 3006		
Business Number:	0438 317 603	Mobile:	
Email Address:	jimmy.soni@lochardenergy.com.au		

Sponsor's agent (if relevant)

Company:			
Contact Name:			
Postal Address			
Business Number:		Mobile:	
Email Address:			

SECTION 2 - Description of proposed activity and location

Project Name:	Heytesbury Underground Gas Storage (HUGS) Pipeline
Municipal district:	Corangamite Shire Council

Clearly identify the proposed activity for which the cultural heritage managment plan is to be prepared (ie. Mining, road construction, housing subivision)

Pipeline

SECTION 3 - Cultural Heritage Advisor

Albert Francis	Ochre Imprints	albert@ochreimprints.com.au
Name	*Company*	*Email address*

SECTION 4 - Expected start and finish date for the cultural heritage management plan

Start Date:	23-May-2022	Finish Date:	23-May-2023

Submitted on: 23 May 2022

VICTORIA State Government Premier and Cabinet

SECTION 5 - Why are you preparing this cultural heritage management plan?

☑ A cultural heritage management plan is required by the Aboriginal Heritage Regulations 2007

What is the high Impact Activity as it is listed in the regulations?

Is any part of the activity an area of cultural heritage sensitivity, as listed in the regulations? 1

☐ Other Reasons (Voluntary)

☐ An Environment Effects Statement is required

☐ A Cultural Heritage Management Plan is required by the Minister for Aboriginal Affairs.

☐ An Impact Management Plan or Comprehensive Impact Statement is required for the activity

SECTION 6 - List the relevant registered Aboriginal parties (if any)

This section is to be completed where there are registered Aboriginal parties in relation to the management plan.

EASTERN MAAR Aboriginal Corporation RNTBC

SECTION 7A - List the relevant Aboriginal groups or Aboriginal people with whom the Sponsor intends to consult (if any)

*This section is to be completed only if the proposed activity in the management plan is to be carried out in an area where there is **no Registered Aboriginal Party.***

Eastern Maar Aboriginal Corporation

SECTION 7B - Describe the intended consultation process (if any)

*This section is to be completed only if the proposed activity in the management plan is to be carried out in an area where there is **no Registered Aboriginal Party.***

Consultation with the RAP will take place throughout the entire project. This will include but not be limited to participation in all fieldwork components (Standard Assessment - SA, Complex Assessment - CA and any salvage requirements). Consultation with the RAP will take place in the form of meetings at project inception, post SA and post CA. Feedback regarding the CHMP will be asked for.

SECTION 8 – State who will be evaluating this plan (mandatory)

The plan is to be evaluated by:

☐ Joint - Registered Aboriginal Party AND The Secretary

☑ A Registered Aboriginal Party

If checked, list the relevant Registered Aboriginal Party Evaluating:

☐ The Secretary

☐ Victorian Aboriginal Heritage Council

SECTION 9 – Preliminary Aboriginal Heritage Tests (PAHTs)

List the Reference Number(s) of any PAHTs conducted in relation to the proposed activity:

SECTION 10 - Notification checklist

Submitted on: 23 May 2022

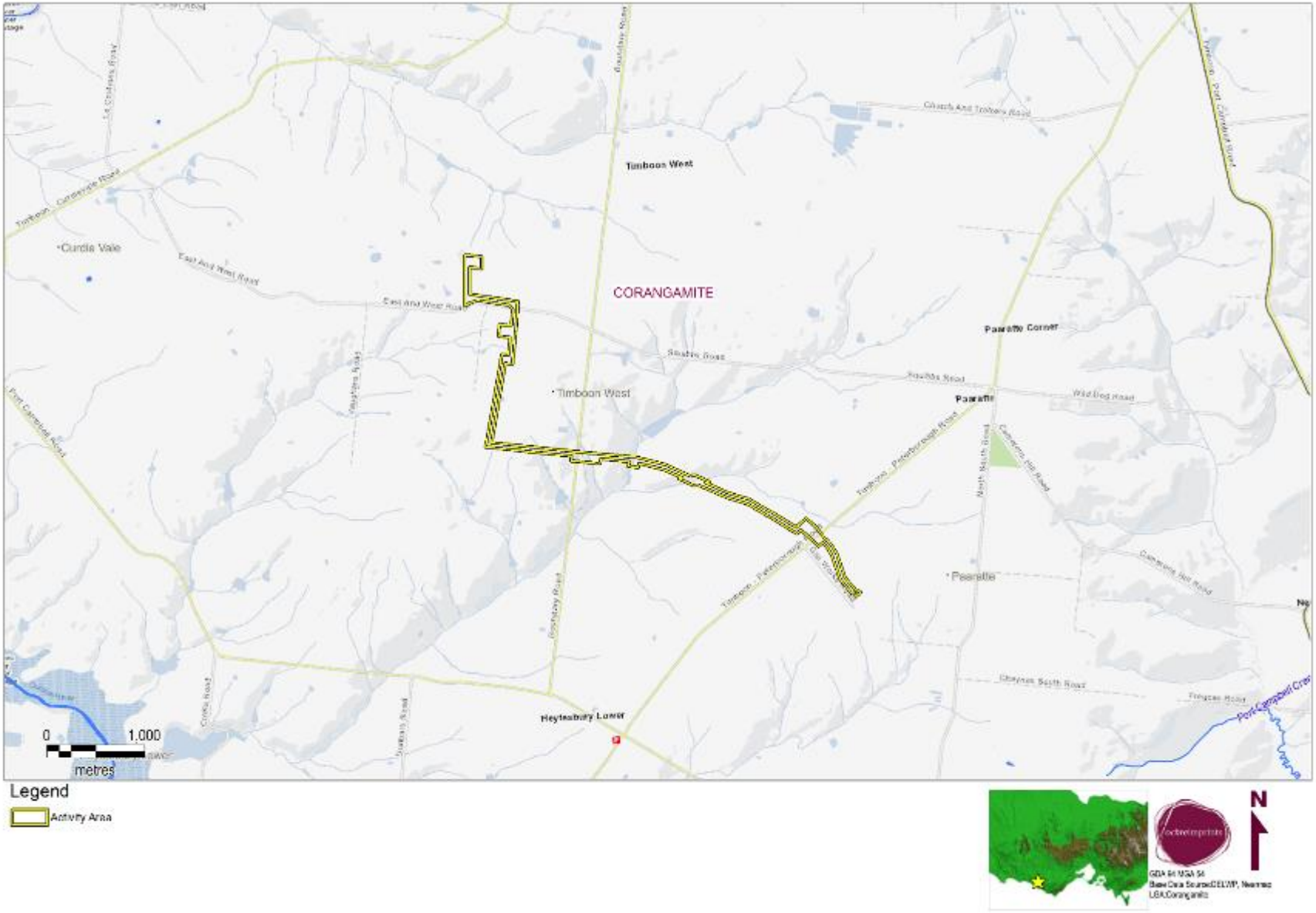
VICTORIA State Government | Premier and Cabinet

Ensure that any relevant registered Aboriginal party/ies is also notified. A copy of this notice with a map attached may be used for this purpose.
(A registered Aboriginal party is allowed up to 14 days to provide a written response to a notification specifying whether or not it intends to evaluate the management plan.)

In addition to notifying the Deputy Director and any relevant registerd Aboriginal party/ies, a Sponsor must also notify any owner and/or occupier of any land within the area to which the management plan relates. A copy of this notice with a map attached may be used for this purpose.

Ensure any municipal council, whose municipal district includes an area to which the cultural heritage management plan relates, is also notified. A copy of this notice, with a map attached, may also be used for this purpose.

Submitted on: 23 May 2022


Timboon West
Curdie Vale
CORANGAMITE
Timboon West
Peerrite Corner
Peerrite
Heytesbury Lower
0
1,000
metres
Legend
Activity Area
N

APPENDIX 2: RESPONSE FROM EMAC

Eastern Maar
Aboriginal Corporation

PO Box 546
Warrnambool VIC 3280

Monday, 23 May 2022

Jimmy Soni
Lochard Energy
Level 10, 2 Southbank Boulevard,
Southbank VIC 3006

Ngatanwarr Jimmy Soni,

EASTERN MAAR ELECTS TO EVALUATE CHMP 18865 – Heytesbury Underground Gas Storage (HUGS) Pipeline (s55).

I refer to your notice of intent to prepare a cultural heritage management plan (CHMP), received on 23/05/2022, for Heytesbury Underground Gas Storage (HUGS) Pipeline. The Eastern Maar Aboriginal Corporation, as the Registered Aboriginal Party (RAP) for the area, Elects to evaluate the CHMP.

As part of the CHMP process, Eastern Maar Aboriginal Corporation expects that Sponsors and Heritage Advisors will make reasonable efforts to consult with us before the design phase and during the preparation of the CHMP (s.59(2) of the Act). Eastern Maar Aboriginal Corporation expects the consultation to take place in the form of cultural heritage meetings, typically three meetings, which will allow us to discuss assessment methodology, reburial and repatriation of artefacts, Aboriginal Place registration,CHMP conditions, and most importantly harm avoidance or minimisation of harm to cultural heritage values.

Please contact Nathalia Guimaraes (nathalia.guimaraes@easternmaar.com.au) to arrange an initial inception meeting (Tuesday and Wednesday Only), using the booking form attached, no sooner than two weeks after providing a copy of the completed desktop assessment and relevant mapping.

To book field representatives please complete the booking form attached and forward to Craig.Edwards@easternmaar.com.au with your preferences. Note that assessments can only be undertaken once consultation has occurred.

A copy of the Eastern Maar Aboriginal Corporation schedule of fees is attached for your reference.

I look forward to consulting with you to protect our Aboriginal cultural landscape as an integral part of your project.

Yours sincerely,

Nathalia Guimaraes
RAP Cultural Heritage Manager
Eastern Maar Aboriginal Corporation
Phone: 0452 350 728
Email: nathalia.guimaraes@easternmaar.com.au
Website: www.easternmaar.com.au

Attached: Booking Form and Schedule of Fees

APPENDIX 3: GLOSSARY

This glossary utilises definitions taken from the following reference books:

- Bahn, P. 2004. *The New Dictionary of Archaeology*. Penguin Books, London.
- Holdaway, S. & N. Stern. 2004. *A Record in Stone: The Study of Australia's Flaked Stone Artefacts*. Museum Victoria, Melbourne.

ASSTT	Australian Small Stone Tool Tradition.
Backed / Backing	Any stone artefact on which one (usually) or more margins contains consistent retouch, opposite a sharp working edge.
Blade	Blade: Any stone artefact retaining observable and complete fracture planes, platform, lateral margins and termination and has a length more than twice its width. Broken Blade: Any stone artefact retaining partial diagnostic features of a blade.
BP	Before Present
Chalcedony	Very fine grained cryptocrystalline silica quartz found in a range of colours from transparent to opaque. Branded forms include agate, jasper and onyx.
Chert	Very fine grained siliceous rock of organic and inorganic origin with no macroscopic visible grains.
Core	Any stone artefact retaining more than two negative scars of previous flakes struck from the piece.
Cortex	The original surface of the stone prior to the flaking episode. This may be further divided into nodule, pebble and terrestrial cortex indicating the original source of the material (i.e. pebble indicates a river or beach source).
Flaked Piece/ Angular Fragment	Any stone artefact retaining evidence of cultural modification (i.e. fracturing consistent with stone tool manufacture) but no diagnostic features associating it to other artefact class categories.
Edge Damage	Minor retouch or use-wear that is unable to be described as formal retouch. May also be a result of post deposition breakage.

Flake	Broken flake: Any stone artefact retaining partial diagnostic features of a flake. Complete/Whole flake: Any stone artefact retaining observable and complete fracture planes, platform, lateral margins and termination. Distal Flake: Any flake on which the breakage removes the platform but retains the termination. Left Split Flake: Any flake on which the breakage removes the right portion of the flake (the left is retained) when oriented platform down and dorsal surface exposed. Proximal Flake: Any flake on which the breakage removes the termination but retains the platform. Right Split Flake: Any flake on which the breakage removes the left portion of the flake (the right is retained) when oriented platform down and dorsal surface exposed.
Flint	A member of the chalcedony group of silica minerals characterised by its dark (black, grey or brown) colour resulting from included organic matter.
Geometric Microlith	A piece on which at least one end and sometimes one lateral margin is backed forming a tool that is 'symmetrical around its transverse axis' (e.g. triangles, trapezoids) (Holdaway & Stern 2004: 262).
Manuport	Any object, generally stone material, transported and deposited by humans.
Platform	Cortical Platform: A platform retaining cortex. Crushed Platform: A platform which retains the diagnostic features of a proximal flake but on which too much damage has occurred to identify its features. Facetted Platform: A platform on which negative flake scars (≥1) are present. Plain Platform: A platform surface that shows no evidence of preparation, cortex, or negative scars.

	Overhung Platform: A platform surface that shows evidence of overhang removal prior to being struck.
Quartzite	A metamorphic rock; 'a quartz-rich sandstone that has been recrystallised by heat, by pressure, or by both… [it is] granular (or sugary) in texture and varies in grain size' (Holdaway & Stern 2004: 24).
Quartz	A mineral that, while not ideal for flaking due to its irregularity (difficult to predict fracturing behaviour), was often utilised for artefact production.
Tool	Complete Tool: Any piece retaining edges modified by use or consistent retouch. Broken Tool: Any piece retaining a partial edge modified by use or consistent retouch. Formal Tool: Any tool that is unambiguously a known tool type (cf. artefact type (Holdaway & Stern 2004)).
Tachylite	A fine grained grey to black volcanic material, often with a thin grey weathered cortex.
Scraper	Scraper: Any piece with systematic retouch along part of its margin. Thumbnail Scraper: Small semi-discoidal flake with unifacial and systematic steep retouch around a curved margin.
Stone Artefact Dimensions	Oriented Length: In this case, the distance from the impact point to the distal margin in the direction of flaking. Maximum Dimension: The largest measurement possible to take on a stone artefact. Oriented Thickness: In this case, measured at right angles to the oriented width and oriented length. Oriented Width: In this case, the width of the artefact at the mid-point at right angles to the oriented length. Quadrants: artefact is oriented with proximal end down and dorsal side facing observer.

Retouch	Scalar: Shallow scale like scars on margin with feather terminations. Usually small rounded scars. Step: Small, abrupt flake scars on margin, with step terminations.
Silcrete	A sedimentary rock; 'formed through the impregnation of a sedimentary layer with silica [consisting] of quartz grains in a matrix of either amorphous or fine-grained silica' (Holdaway & Stern 2004: 24).
Stone Artefact	A piece of stone that has been formed by Aboriginal people to be used as a tool or is the bi-product of Aboriginal stone tool manufacturing activities. Stone artefacts can be flaked (i.e. to make points and scrapers) or ground (i.e. ground-edge axes, grinding stones).
VAHR	Victorian Aboriginal Heritage Register.

APPENDIX 4: ABORIGINAL PLACE GAZETTEER

VAHR NO.	Place Name	Place Type	Place Content	Grid Coordinates MGA Zone 55 GDA94	
				Easting	Northing
7420-0031	Paaratte IA 1	Artefact Scatter	1 x marine chert stone artefact in a subsurface context	669905	5731396
7922-0063	HUGS Pipeline LDAD	Artefact Scatter	3 stone artefacts (quartzite n=2, and silcrete n=1) in a subsurface context	668482	5732117

APPENDIX 5: DETAILED DESCRIPTION OF EPs AND STPs

EPS	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
EP1	E 667239 N 5732686	1 x 1 m 700 mm	Gently undulating plain		0-200 mm: Munsell 10YR 2/1 pH 4.5 Dark grey moist fine sand / sandy silt with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, charcoal fragments. 201-350 mm: Munsell 10YR 4/1 pH 5.0 Mid grey moist friable fine sand / sandy silt with insects and insect burrows. Small rootlets common, infrequent worms, charcoal fragments. 351-400 mm: Munsell 10YR 5/2 pH 5.0 Light brown moist friable fine sand / sandy silt with infrequent charcoal fragments. 401-700 mm +: Munsell 10YR 2/1 & 6/8 pH 4.5 Dark grey/white/yellow, dry, compact fine sand /silty sand and clay. Coffee rock.
EP2	E668482 N 5732118	1 x 1 m 250 mm	Dissected plain	1: 0-100	0-130 mm: Munsell 10YR 4/1 pH 5.5 Mid brown dry, friable silty clay with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, occasional small basalt stone (basaltic clays). 131-200 mm: Munsell 10YR 4/4 & 5/6 pH 6.0 Mid brown-yellow dry, friable compact silty clay with insects and insect burrows. Small rootlets, increased basaltic clay and mineral stones, worms, yellow mottle. Manganese fragments. 201-250 mm+: Munsell 10YR 4/6 & 5/6 pH 6.0 Dark brown dry compact clay.
EP3	E 667214 N 5733539	1 x 1 m 250 mm	Gently undulating plain		0-200 mm: Munsell 10YR 2.5/1 pH 6.0 Dark grey silty sand with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, 200-400 mm: Munsell 10YR 7/1 pH 6.0 Light grey/white sand, wet. 400-500mm: Munsell 10YR 7/1 pH 6.0 Brown orange mottled clay with coffee rock inclusions

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
STP1	E 670307 N 5731354	0.5 x 0.5 m 350 mm	Dissected plain		0-130 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks and small basalt stones 130-200 mm: Munsell 10YR 4/4 pH 6.0 Mid brown-grey silty clay, friable, moist. Grass roots, insects, insect burrows 200-350 mm: Munsell 10YR 4/6 pH 6.5 Light to mid brown grey / orange clay, compact, moist
STP2	E 670100 N 5731392	0.5 x 0.5 m 350 mm	Dissected plain		0-130 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks and small basalt stones 130-200 mm: Munsell 10YR 4/4 pH 6.0 Mid brown-grey silty clay, friable, moist. Grass roots, insects, insect burrows 200-350 mm: Munsell 10YR 4/6 pH 6.5 Light to mid brown grey / orange clay, compact, moist
STP3	E 670022 N 5731444	0.5 x 0.5 m 350 mm	Gently undulating plain		0-130 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks and small basalt stones 130-200 mm: Munsell 10YR 4/4 pH 6.0 Mid brown-grey silty clay, friable, moist. Grass roots, insects, insect burrows 200-350 mm: Munsell 10YR 4/6 pH 6.5 Light to mid brown grey / orange clay, compact, moist
STP4	E 669950 N 5731382	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 100-150 mm: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, firm, moist. Grass roots

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
					150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP5	E 669912 N 5731505	0.5 x 0.5 m 150 mm	Dissected plain		0-150 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP6	E 669813 N 5731555	0.5 x 0.5 m 150 mm	Dissected plain		0-150 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP7	E 669694 N 5731624	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP8	E 669464 N 5731733	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP9	E 669226 N 5731800	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP10	E 669006	0.5 x 0.5 m 150 mm	Dissected plain		0-150 mm: Munsell 10YR 4/3 pH 6.0

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
	N 5731788				Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP11	E 668886 N 5731830	0.5 x 0.5 m 170 mm	Dissected plain		0-170 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 170 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP12	E 668866 N 5731868	0.5 x 0.5 m 150 mm	Dissected plain		0-150 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP13	E 668824 N 5731929	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP14	E 668605 N 5732051	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP15	E 668382 N 5732158	0.5 x 0.5 m 250 mm	Dissected plain		0-250 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 250 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP16	E 668138	0.5 x 0.5 m 250 mm	Dissected plain		0-250 mm: Munsell 10YR 4/3 pH 6.0

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
	N 5732201				Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 250 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP17	E 667977 N 5732204	0.5 x 0.5 m 250 mm	Dissected plain		0-250 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 250 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP18	E 667896 N 5732221	0.5 x 0.5 m 450 mm	Dissected plain		0-450 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 450 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP19	E 667652 N 5732263	0.5 x 0.5 m 250 mm	Dissected plain		0-250 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 250 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP20	E 667527 N 5732286	0.5 x 0.5 m 450 mm	Dissected plain		0-450 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 450 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP21	E 667406 N 5732305	0.5 x 0.5 m 450 mm	Dissected plain		0-400 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 400 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
STP22	E 667237 N 5732416	0.5 x 0.5 m 450 mm	Dissected plain		0-400 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 400 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP23	E 667025 N 5732430	0.5 x 0.5 m 300 mm	Gently undulating plain		0-300 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 300 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP24	E 667235 N 5732442	0.5 x 0.5 m 350 mm	Gently undulating plain		0-350 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 350 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP25	E 667069 N 5732687	0.5 x 0.5 m 450 mm	Dissected plain		0-400 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 400 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP26	E 667241 N 5732919	0.5 x 0.5 m 450 mm	Gently undulating plain		0-400 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 400 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP27	E 667246 N	0.5 x 0.5 m 450 mm	Gently undulating plain		0-400 mm: Munsell 10YR 4/3 pH 6.0

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
	5733169				Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 400 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP28	E 667291 N 5733417	0.5 x 0.5 m 300 mm	Gently undulating plain		0-300 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 300 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP29	E 668491 N 5732113	0.5 x 0.5 m 350 mm	Dissected plain		0-130 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks and small basalt stones 130-200 mm: Munsell 10YR 4/4 pH 6.0 Mid brown-grey silty clay, friable, moist. Grass roots, insects, insect burrows 200-350 mm: Munsell 10YR 4/6 pH 6.5 Light to mid brown grey / orange clay, compact, moist
STP30	E 668487 N 5732116	0.5 x 0.5 m 240 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-240 mm: Munsell 10YR 5/6 pH 7.0 Mid brown-yellow clay, firm, moist. Grass roots 240 mm +: Munsell 10YR 5/6 pH 7.0 Mid brown-yellow clay, compact, moist
STP31	E 668477 N 5732120	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Brick fragments 100-150 mm: Munsell 10YR 5/6 pH 6.5

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
					Mid brown-yellow clay, firm, moist. Grass roots 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP32	E 668473 N 5732122	0.5 x 0.5 m 250 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-250 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-yellow silty clay, friable, moist. Grass roots, insects, insect burrows 250 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, firm-compact, moist
STP33	E 668484 N 5732121	0.5 x 0.5 m 200 mm	Dissected plain	2: 0-100	0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks 100-200 mm: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, firm, moist. Ironstone fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP34	E 668491 N 5732130	0.5 x 0.5 m 240 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-240 mm: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow silty clay, friable, firm, moist. Grass roots, insects, insect burrows. Ironstone and manganese 240 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, firm, moist
STP35	E 668488 N 5732126	0.5 x 0.5 m 200 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows. Charcoal flecks 100-200 mm: Munsell 10YR 5/6 pH 6.5

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
					Mid brown-yellow clay, firm, moist. Insects, insect burrows. Ironstone and manganese fragments 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP36	E 668479 N 5732113	0.5 x 0.5 m 200 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-200 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-yellow silty clay, firm, moist. Grass roots, insect burrows 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-yellow clay, compact, moist
STP37	E 668475 N 5732109	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP38	E 668474 N 5732101	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP39	E 668473 N 5732091	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
					Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP40	E 668470 N 5732082	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP41	E 668468.902 N 5732072	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP42	E 668466 N 5732060	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 100-150 mm: Munsell 10YR 4/4 pH 6.5 Mid brown-orange silty clay, friable, moist. Grass roots, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP47	E 668692 N 5733527	0.5 x 0.5 m 150 mm	Gently undulating plain		0-200 mm: Munsell 10YR 2.5/1 pH 6.0 Dark grey silty sand with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, 200-400 mm: Munsell 10YR 7/1 pH 6.0

STP	GPS coordinates (MGA 55 GDA 94) Easting Northing	Size / Depth	Landform	Artefact / Depth	Stratigraphy
					Light grey/white sand, wet. 400-500mm: Munsell 10YR 7/1 pH 6.0 Brown orange mottled clay with coffee rock inclusions
STP48	E 668697 N 5733687	0.5 x 0.5 m 150 mm	Gently undulating plain		0-200 mm: Munsell 10YR 2.5/1 pH 6.0 Dark grey silty sand with grassroots, insects and insect burrows. Heavy cattle disturbance, thick grass cover, frequent worms, 200-400 mm: Munsell 10YR 7/1 pH 6.0 Light grey/white sand, wet. 400-500mm: Munsell 10YR 7/1 pH 6.0 Brown orange mottled clay with coffee rock inclusions
STP49	E 668400 N 5732113	0.5 x 0.5 m 200 mm	Dissected plain		0-200 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 200 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP50	E 668399 N 5732095	0.5 x 0.5 m 150 mm	Dissected plain		0-100 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 150 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist
STP51	E 668397 N 5732079	0.5 x 0.5 m 300 mm	Dissected plain		0-300 mm: Munsell 10YR 4/3 pH 6.0 Mid brown silty clay, friable, moist. Grass roots, insects, insect burrows 300 mm +: Munsell 10YR 5/6 pH 6.5 Mid brown-orange clay, compact, moist

APPENDIX 6: STONE ARTEFACT CATALOGUE

VAHR 7420-0063 LDAD

Easting	Northing	Zone	Depth (m)	Raw Material	Primary Form	% of edge with retouch/ usewear	Flake Platform	Flake Termination	Number of complete scars	Longest scar (axial mm)	Length (mm)	Width (mm)	Thickness (mm)	Maximum Dimension (mm)
668482	5732117	54	0.1	Silcrete	Core - Unidirectional				1	17.09	31.87	20.13	12.38	32.03
668486	5732121	54	0.1	Quartzite	Core - Bidirectional				1	8.26	20.33	16.3	8.94	20.71
668486	5732121	54	0.1	Quartzite	Flake - Complete	None	Flaked	Feather			8.84	6.86	3.34	9.02