Gunlake Quarry Aboriginal Heritage Management Plan

Development Consent SSD 7090 (LEC 2020/337172)

Prepared for Gunlake Quarries Pty Limited | 6 November 2023

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Aboriginal cultural heritage management plan
Gunlake Quarry Development Consent SSD 7090 (LEC 2020/337172)

Gunlake Quarries Pty Limited

J190263 RP17

September 2023

Version	Date	Prepared by	Reviewed by	Comments
V1	3 April 2018	Ryan Desic	Pamela Kottaras	Original document
V7	23 July 2021	Ryan Desic	P. Towler	-
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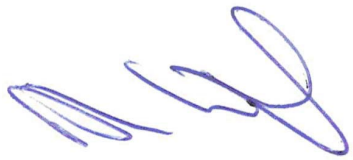
Approved by



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6 November 2023

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1 Background

1.1 Introduction

This Aboriginal heritage management plan (AHMP) documents procedures for the management of Aboriginal heritage values associated with Gunlake Quarry (the project) (Figure 1.1). This AHMP addresses the Aboriginal heritage management conditions of the Gunlake Quarry Extension Project Development Consent for SSDA 7090 (Modification 2, LEC 2020/337172).

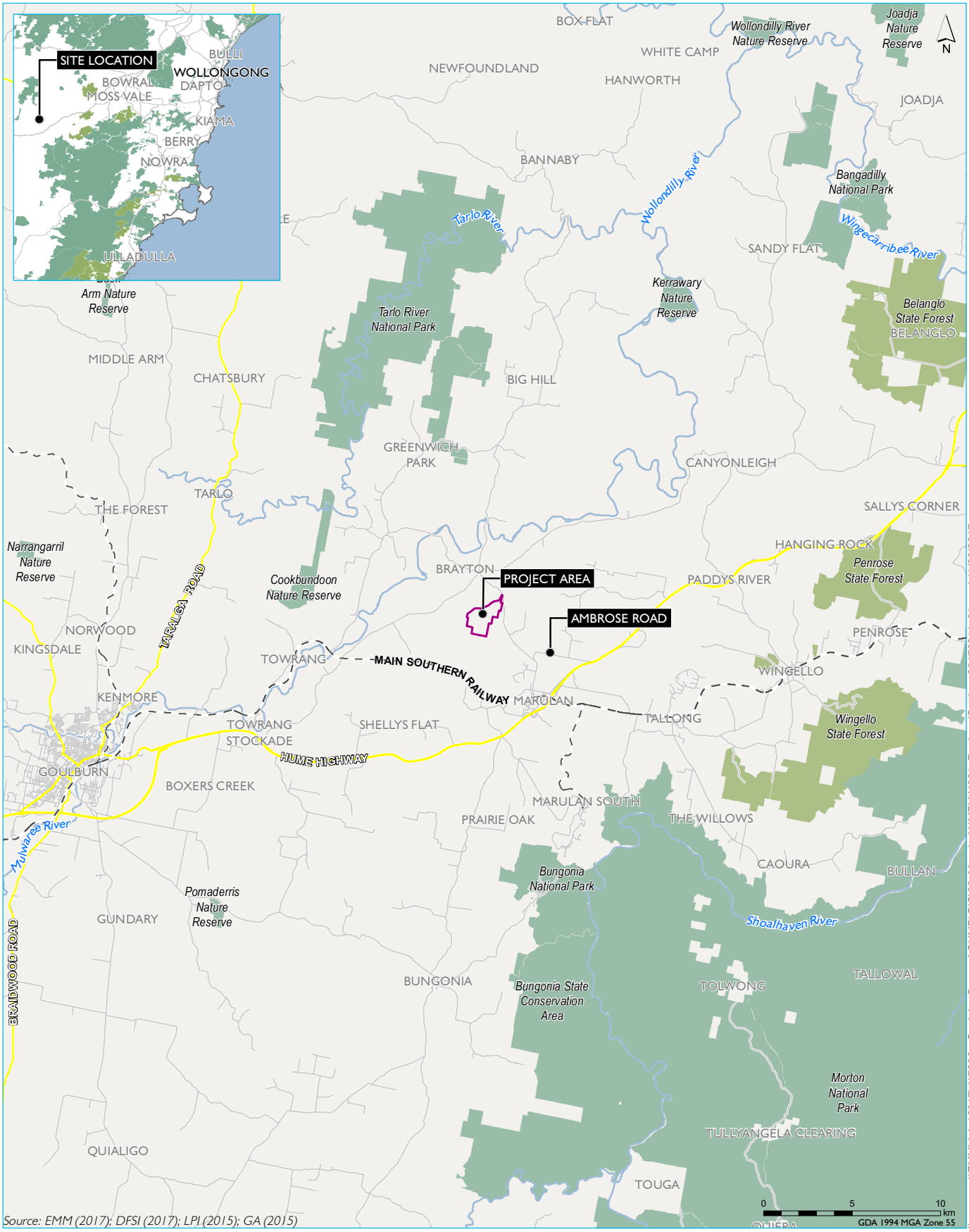
This AHMP:

- details all Aboriginal sites identified in the project area;
- details the management procedures for Aboriginal cultural heritage values within the project area;
- provides the results of archaeological salvage collection fieldwork, analysis and reporting (Appendix C);
- presents the process for ongoing consultation with the Heritage NSW (previously, Office of Environment and Heritage (OEH)) and registered Aboriginal parties (RAPs);
- outlines the obligations of Gunlake Quarries Pty Limited (Gunlake) staff and contractors to protect Aboriginal heritage not subject to approved harm;
- outlines reporting requirements; and
- provides for continuous improvement to the plan through auditing and plan modification.

The AHMP forms one component of the overall quarry Environmental Management Strategy (EMS). The EMS includes a number of commitments and component management plans which together form the basis for the ongoing operation of the quarry.

1.2 Area to which this plan applies

This management plan covers the Gunlake Quarry Extension Project's (extension project) approved disturbance area (Figure 1.2) and Ambrose Road which is approximately 4 km south-east of the quarry (refer Figure 1.2).



Source: EMM (2017); DFSI (2017); LPI (2015); GA (2015)

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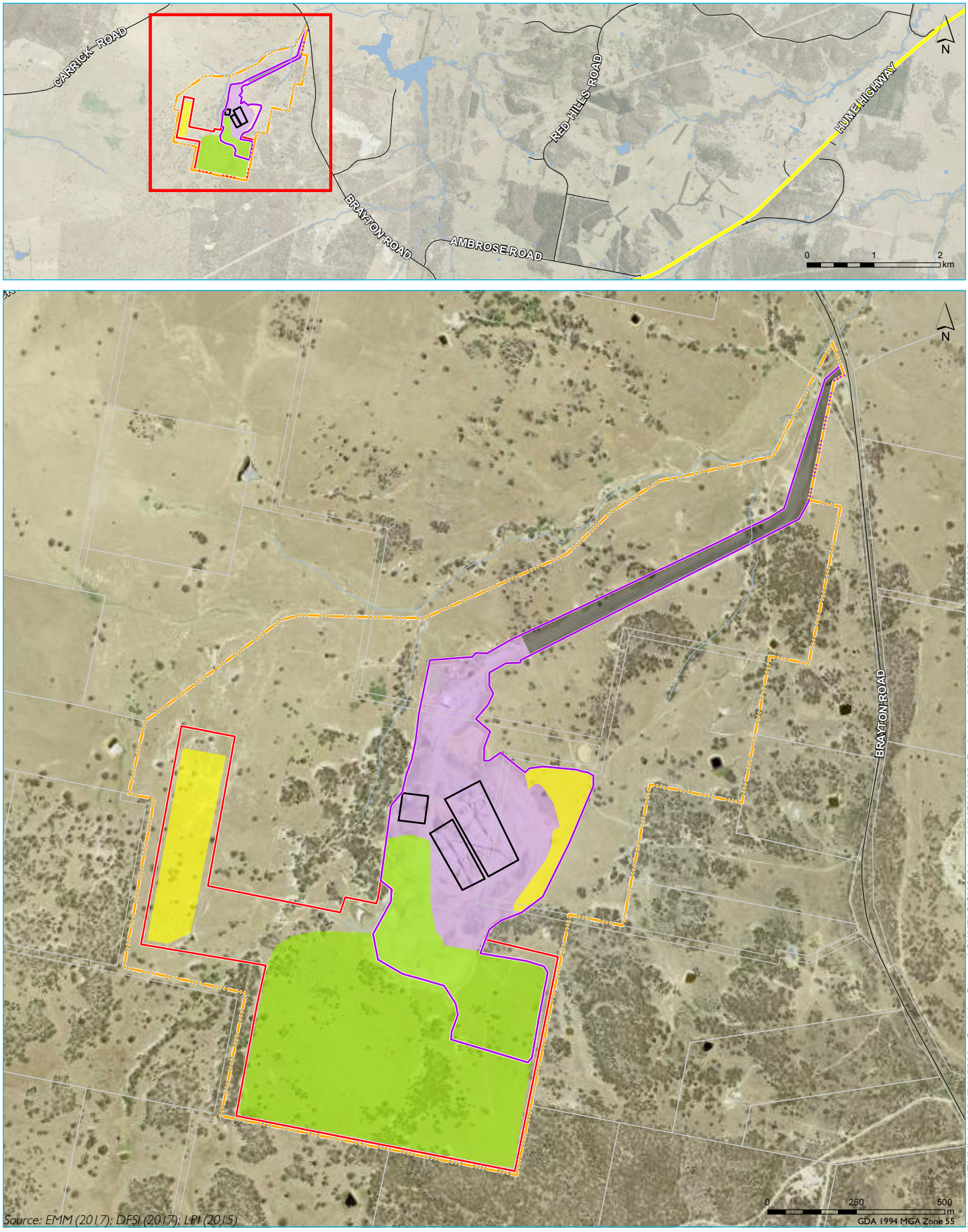
KEY

- Project area
- State forest
- Rail line
- Main road
- Local road
- Watercourse / drainage line
- NPWS reserve

Regional setting

Gunlake Quarry
Aboriginal heritage management plan
Figure 1.1

EMM



KEY

- Project area
- Existing quarry
- Plant location
- Extension area
- Emplacement footprint
- Pit footprint
- Access road
- Existing operations and infrastructure area
- Main road
- Local road
- Watercourse / drainage line
- Waterbody
- Cadastral boundary

Project area and disturbance footprints

Gunlake Quarry
Aboriginal heritage management plan
Figure 1.2

EMM

1.3 Scope and background of the AHMP

The primary purpose of this plan is to define management of Aboriginal heritage values within the project area. The term 'management' includes both Aboriginal heritage protection as well as mitigation of impacts on Aboriginal heritage.

Development consent for the extension project requires an AHMP to be prepared under Schedule 3, Condition 30. EMM prepared this AHMP that covers the entire project area and addresses the conditions of consent.

1.4 Authorship

This plan was prepared by EMM Senior Archaeologist Ryan Desic (BA (hons) Historical and Prehistoric Archaeology) and reviewed by EMM Heritage Services Manager Pamela Kottaras (BA (hons) Historical and Prehistoric Archaeology) as endorsed by the Department of Planning and Environment (DPE) on 10 November 2017 (Appendix B).

As a live document, minor changes and updates have been made to the ACHMP since its original development in 2017. These have typically either been undertaken and/or reviewed by Dr Alan Williams, Technical Lead, Aboriginal Heritage, EMM (Appendix D).

1.5 Relevant conditions of consent

Condition 30 of Schedule 3 of the development consent for SSDA 7090 relate to Aboriginal heritage. The conditions listed in Table 1.1 refer to the relevant sections of the plan which address them.

Table 1.1 Condition 30 of Schedule 3 of development consent

Condition			Where addressed in this document
The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. The plan must:			This document is the AHMP
a)	be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;		Section 1.4
b)	be prepared in consultation with OEH and the Registered Aboriginal Parties;		Sections 1.5 and Chapter 2
c)	be submitted to the Secretary for approval within six months of commencing development under this consent and prior to commencing quarrying operations under this consent; and		This AHMP was submitted to DPE in November 2017, within 6 months of commencing the Extension Project.
d)	include a description of the measures that would be implemented to:		
	i)	protect, monitor and manage known sites of archaeological significance;	Chapter 5
	ii)	manage any new Aboriginal objects or relics that are discovered;	Chapter 6
	iii)	store Aboriginal heritage items salvaged on site; and	Section 5.6

Table 1.1 Condition 30 of Schedule 3 of development consent

Condition		Where addressed in this document
iv)	ensure ongoing consultation and involvement of the Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site.	Chapter 2

1.6 Consultation with Heritage NSW

As required by the development consent for the Extension Project, EMM consulted with the OEH South East (now Heritage NSW) in developing the initial version of this plan. EMM initially called OEH in September 2017 during the preparation of the management plan. OEH advised that the recommended conditions of consent issued by OEH on 20 May 2016 should be followed (OEH, 20 May 2017). EMM incorporated the requirements of the recommended conditions into the plan and provided OEH with the updated AHMP on 1 February 2018 for their review and comment. OEH provided their comments on 16 February 2018. EMM's response to OEH's submission is attached in Appendix B.

As required by Condition B30 (b) of the Extension Project consent, the updated ACHMP was provided to Heritage NSW on 18 May 2023 for review and comment. Heritage NSW noted the change of the condition of GL15, and indicated that no further changes to the ACHMP were required. This consultation is presented in Appendix B.

Gunlake will continue to consult with Heritage NSW in accordance with relevant sections of the plan and in the following circumstances:

- when making material changes to this plan
- when additional Aboriginal heritage assessments or investigations are required for the project
- in the event that Aboriginal skeletal material is found.

1.7 AHMP review

1.7.1 Review cycle for this plan

This AHMP will be reviewed within three months of submitting an Annual Review, an incident report or an independent audit and within three months of receiving approval of a modification to the development consent for the project.

1.7.2 Making changes to this plan

Changes to the plan will be made in the following circumstances:

- where new Aboriginal sites are discovered, they must be added to the inventory in this AHMP within one month of the find;
- where approved modifications to the project introduce new impacts on Aboriginal heritage which are not generally covered by the AHMP; and

- where approved changes to the project change or remove previously planned impacts on Aboriginal heritage where mitigation was proposed in the plan but are no longer required.

1.7.3 Aboriginal consultation for AHMP review

Where changes are made to the AHMP, a draft of the modified plan will be provided to the registered Aboriginal parties for their review. Registered Aboriginal parties will not be required to review the AHMP for minor plan updates. This comprises:

- when a new Aboriginal site is discovered and is at no risk of impact by the project. In this instance, the inventory of the AHMP will be updated to acknowledge the site, but registered Aboriginal parties will not be required to review the AHMP; and

- when the status of a site needs to be updated on the inventory of the AHMP. For example, once a site has been salvaged the AHMP will be updated to reflect the site's status. However, registered Aboriginal parties will not be required to review this action.

Although Registered Aboriginal parties are not required to review the AHMP for minor plan updates, they will be notified if new sites are identified and of updates relating to the status of Aboriginal sites.

Matters raised in consultation which are specific to the changes in the plan will be acknowledged and addressed in the modified plan. Further requirements for Aboriginal consultation are set out in Chapter 2 of this plan.

2 Aboriginal community consultation

2.1 Registered Aboriginal parties

There are 29 Aboriginal groups who registered for the extension project. The RAPs are listed in Table 2.1. These groups were consulted during the ACHA for the extension project (EMM 2016). This included providing a draft report of the ACHA for review and comment that outlined the management measures and which are now detailed in this plan.

Table 2.1 List of RAPs for the project

Organisation	Method of registration	Date of registration
Badu	email	20-Apr-15
Bilinga	email	20-Apr-15
Buru Ngunawal Aboriginal Corporation	email	20-Apr-15
Corroboree Aboriginal Corporation	email	11-May-15
Duncan Falk Consultancy	email	24-Apr-15
EORA	email	12-May-15
Gangangarra	email	12-May-15
Goobah Development Pty Ltd	email	11-May-15
Gulgunya Ngunawal Heritage Aboriginal Consultancy	letter	10-Apr-15
Gundungurra Aboriginal Heritage Association Inc	email	20-Apr-15
Gunjeewong Cultural Heritage Aboriginal Corporation	letter	28-Apr-05
Gunyuu	email	20-Apr-15
Karrial	email	29-Apr-15
Koomurri Ngunawal Aboriginal Corporation	email	03-May-15
Merrigarn	email	22-Apr-15
Munyunga	email	20-Apr-15
Murri Bidgee Mullangari Aboriginal Corporation	email	23-Apr-15
Murrumbull	email	20-Apr-15
Ngunawal	email	13-May-15
Ngunawal Heritage Aboriginal Corporation	email	11-May-15
Nundagurri Aboriginal Corporation	email	20-Apr-15
Pejar Local Aboriginal Land Council	email	20-Apr-15
Peter Falk Consultancy	email	20-Apr-15

Table 2.1 List of RAPs for the project

Organisation	Method of registration	Date of registration
Thunderstone Aboriginal Cultural and Land Management Services	email	04-May-15
Walbunja Aboriginal Corporation	email	20-Apr-15
Wandandian	email	13-May-15
Wingikara	email	20-Apr-15
Wullung	email	20-Apr-15
Yerramurra	email	20-Apr-15

Gunlake and EMM would like to thank all Aboriginal site officers involved in fieldwork during the assessment to date. They are listed below:

- Justin Boney (Pejar LALC);
- Wally Bell (Buru Ngunawal Aboriginal Corporation);
- Glen Freeman (Gulgunya Ngunawal Heritage Aboriginal Consultancy);
- Duncan Falk (Duncan Falk Consultancy);
- Kieran McNally (Gundungurra Aboriginal Heritage Association Inc);
- Steve Johnson (Corroboree Aboriginal Corporation);
- Ryan Johnson (Murri Bidgee Mullangari Aboriginal Corporation);
- Darleen Johnson (Murri Bidgee Mullangari Aboriginal Corporation);
- Peiro Delponte (Ngunawal Hertiage Aboriginal Corporation;
- Shaun Carroll (Merrigarn); and
- Hike Tekowhai (Walbunja Aboriginal Corporation).

2.2 Aboriginal consultation in developing this plan

Aboriginal consultation for this plan continued in the same manner as that conducted during the ACHA for the extension project. Reference was made to the development of an AHMP with invitation for feedback throughout the ACHA consultation.

A draft of this AHMP was provided to all of the RAPs on 6 October 2017 allowing for a 28 day review period. Feedback was received from Pejar LALC, Duncan Falk Consultancy and Gulgunya Ngunawal Heritage Aboriginal Consultancy. A summary of feedback is provided in Table 2.2. Documentation of this consultation process is included in Appendix A.

The ACHMP was subsequently provided to the RAPs on 18 May 2023. This outlined the updated condition of GL15 and sought any further comments on the ACHMP (Appendix A). No responses were received.

Table 2.2 Comments made through consultation for AHMP

Date	Registered Aboriginal Party	Summary of submission	EMM response
09/10/2017	Pejar Local Aboriginal Land Council	An initial response was provided requesting for a meeting to discuss the plan. It also requested that the report stated which Aboriginal people attended fieldwork during the ACHA.	EMM archaeologist Ryan Desic discussed the plan with Delise Freeman (Pejar LALC) on 10/10/2017 during a telephone meeting. Ryan answered general questions about the plan and upcoming fieldwork. It was resolved that the Aboriginal people that participated in past fieldwork were also acknowledged in the plan, which has been added to Section 2.1. No further issues were raised during the meeting.
10/10/2017	Gulgunya Ngunawal Heritage Aboriginal Consultancy	That RAPs other than those of Ngunawal descent should not be involved in the artefact reburial procedure set out in this plan.	Suitable RAP representatives will be invited to attend the reburial procedure. This will involve further discussions with RAPs who have an interest in the reburial activity.
31/10/2017	Duncan Falk Consultancy	The submission raised no issues with the plan and endorsed the document.	No response required.

2.3 Ongoing consultation

2.3.1 When consultation is required

The RAPs will continue to be consulted on matters of Aboriginal heritage management for the project. Instances where further consultation is required is set out throughout this report. In summary, consultation will be undertaken for (but may not be limited to) following circumstances:

- when making changes to this plan, including the circumstances that trigger the changes to the plan (refer Section 1.7);
- when additional Aboriginal heritage assessments or investigations are required for the project; and
- when new sites are discovered and input on their management is required (refer Chapter 6).

2.3.2 Process

The following process for consultation applies:

- The environmental manager or delegate will be responsible for consulting with project RAPs;
- primary communication between RAPs and environmental manager will be via letter which may be faxed, posted or emailed;
- issues that arise in conversations, whether by telephone or in person, will be documented in a letter by the person raising the concern, and within a reasonable time after the conversation;

- issues requiring the attention of the RAPs will be communicated no later than one week of the issue arising; and
- feedback from the RAPs will be requested by environmental manager the no later than two weeks from the date the correspondence is issued by environmental manager.

2.4 Access to Aboriginal sites and objects

Local Aboriginal community access to Aboriginal sites will be made available by Gunlake subject to reasonable safety and security measures; landowner permission (if on land not owned by Gunlake); location of quarrying operations; prior notification and availability of Gunlake assistance as per standard quarry procedures.

Local Aboriginal community members seeking access to Aboriginal sites will need to obtain prior written endorsement from one of the RAPs which identifies the name of the person, briefly describes their basis of interest and nominates the timeframe for access to the Aboriginal sites. This measure will provide confidence to Gunlake that the access request is authentic.

2.5 Aboriginal involvement in Aboriginal heritage management measures

Gunlake will give consideration to expressions of interest from suitably skilled, equipped and insured Aboriginal persons to provide services to assist during salvage fieldwork.

3 Aboriginal sites and objects

3.1 Aboriginal sites

Aboriginal cultural heritage assessments were completed as part of the environmental assessments for the original quarry environmental assessment (Project Approval 07-0074) and for subsequent modifications. A further Aboriginal cultural heritage assessment was prepared as part of the environmental impact statement for the Gunlake Quarry Extension Project (SSDA 7090). The project area therefore covers the approved disturbance boundary of the Extension Project which incorporates the disturbance area that was covered by the original Project Approval 07-0074 (as modified). Project Approval 07-0074 was surrendered on commencement of development under the Extension Project consent. The sites identified by these assessments are summarised below.

3.1.1 Sites identified in the original quarry area (Project Approval 07-0074)

In 2007, Australian Archaeological Survey Consultants (AASC) completed an ACHA for the original quarry layout and associated infrastructure. Three small artefact scatters, with artefact numbers ranging from four to six, of low significance were identified in the then proposed quarry footprint. These sites were named GL1, GL2 and GL3. A further two sites, GL4 and GL5 (one isolated find and one artefact scatter comprising two artefacts), were identified on the then proposed Ambrose Road alignment over 4 km south-east of the quarry.

Sites GL1 to GL5 were subsequently collected. The contents of sites GL1, GL2 and GL3 were reburied together close to their original location north of the quarry site access road. This new location was registered on AHIMS as “GL123 (Gunlake Quarry) relocated GL1, GL2 and GL3”. The contents of GL4 and GL5 were reburied together close to the original location of GL4. This new location was registered on the Aboriginal Heritage Management System (AHIMS) as “GL45 (Gunlake Quarry) relocated GL4 and GL5”.

The locations of these sites and their reburied locations are shown on Figure 3.1. The management status of these sites is detailed in Table 5.1.

Cultural Heritage Management Australia (CHMA) completed an ACHA for a modification to the original Gunlake Quarry pit and overburden embankment areas (Modification 2 of Project Approval 07-0074) (CHMA 2014) in September 2014; however, no Aboriginal objects or places were identified.

3.1.2 Sites identified in the extension area (SSDA 7090)

EMM archaeologist Ryan Desic, accompanied by five Aboriginal sites officers, surveyed the extension area over two days in July 2015. The survey covered the entire extension area and was divided into 15 transects covering hill spur crests, hill slopes, foot slopes and stream channels.

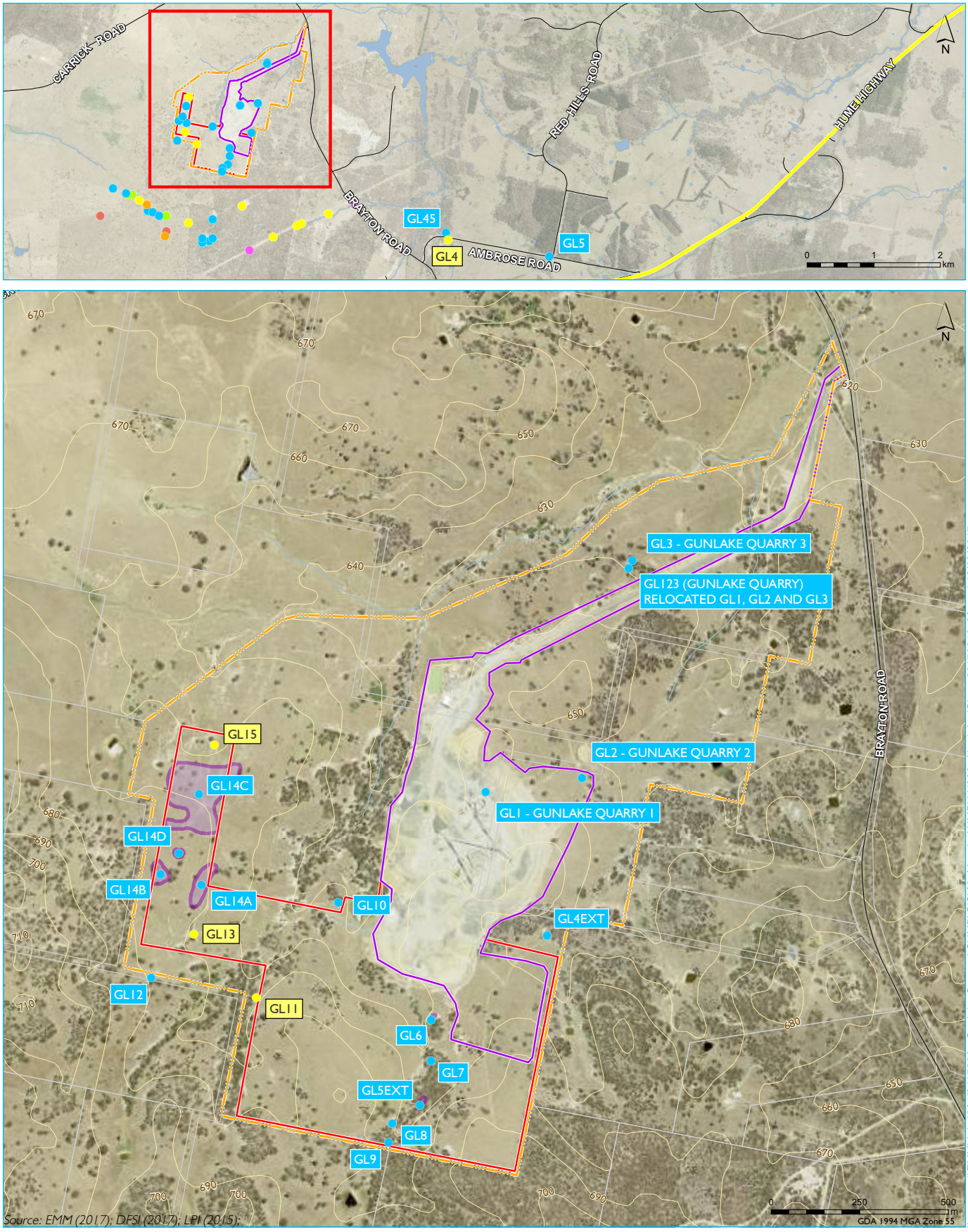
The survey team identified 15 Aboriginal sites in the extension area. All of the Aboriginal sites comprised stone artefacts, 12 of which were open stone artefact sites and three which were isolated finds. The sites are shown on Figure 3.1 and summarised in Table 5.1.

In October 2015 EMM archaeologists, accompanied by Aboriginal sites officers, conducted an archaeological test excavation in the extension area over five days. The archaeological test excavation program aimed to characterise the subsurface archaeological deposit of known surface sites and surrounding landforms in the extension area that had limited ground surface visibility. The excavation comprised eight test pit transects made up of 1 m x 1 m test pits (Figure 3.2).

In total, 42 m^2 was excavated. Eighty-nine artefacts were recovered from the 42 test pits which equates to an average frequency of 2.12 artefacts per m^2. One third of test pits contained one or more artefacts and the majority of artefacts (92%) were recovered from the top 20 cm of soil. Artefact frequencies per 1 m x 1 m square ranged from zero to 35. The highest densities of artefacts were recovered from the hill spur crest in the proposed embankment area in association with sites GL14a, GL14b, GL14c and GL14d. Conversely, only three artefacts were recovered away from these sites and were associated with site GL5ext.

The paucity of subsurface artefact frequencies in all tested areas was attributed to the poor integrity of the soil deposit, which was severely truncated by erosion. It was concluded that the surface artefact distributions offered a better representation of the local archaeological record.

All of Aboriginal sites identified, except one, were assessed to have low archaeological significance. It has been concluded that sites GL14a, GL14b, GL14c and GL14d were fragmented parts of a larger distribution, which was assessed to have moderate archaeological significance. This was because these sites are extensive artefact scatters with good examples of artefact types and raw materials. However, they lack archaeological integrity because of the highly eroded skeletal soils on this landscape.



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

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KEY

- Project area
- Existing quarry
- Extension area
- Main road
- Local road
- Watercourse / drainage line
- Waterbody
- 10 m contour (mAHD)
- Cadastral boundary
- Aboriginal site area

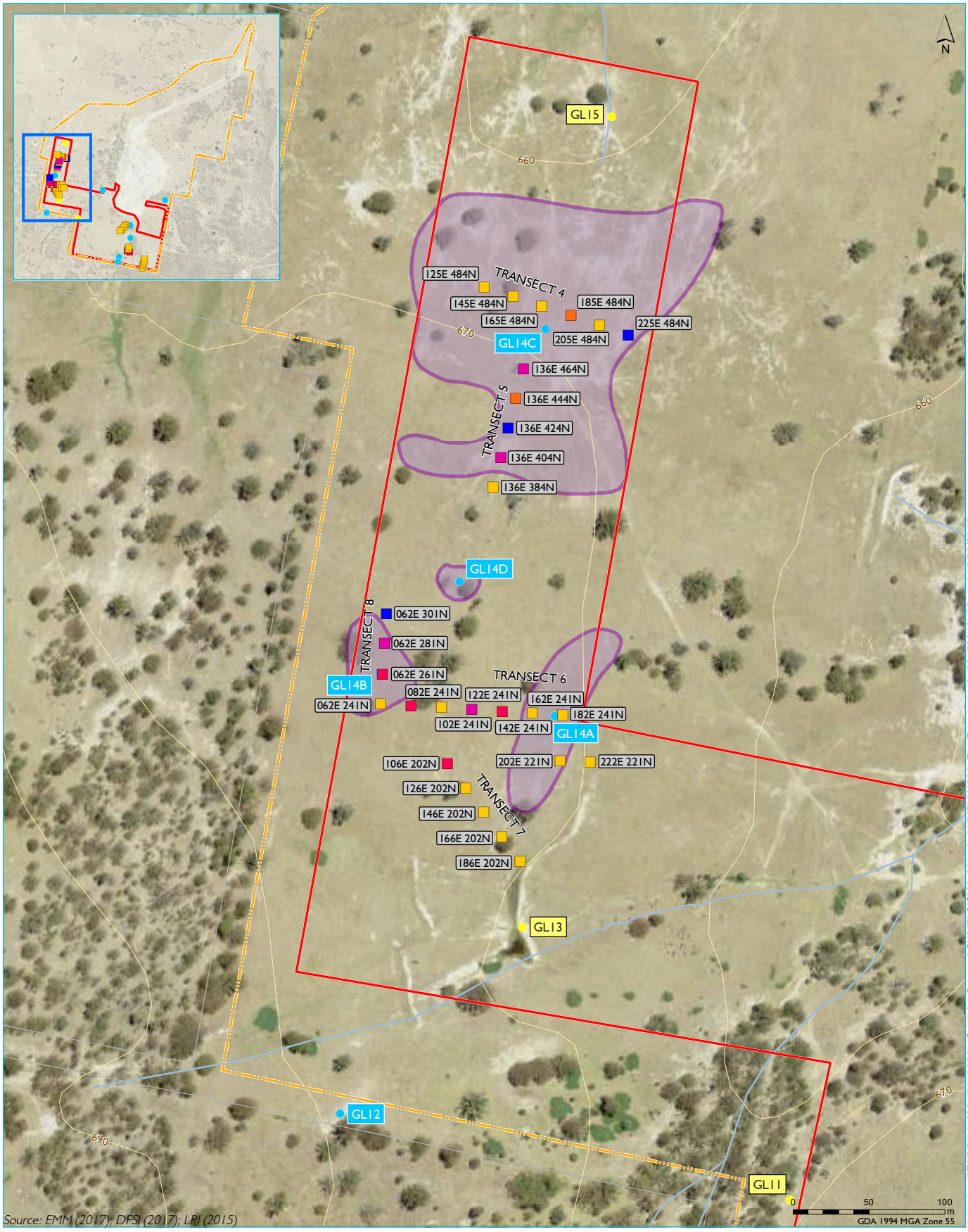
AHIMS record

- Open artefact site
- Isolated find
- Isolated find with PAD
- Modified tree
- Open artefact site with PAD
- PAD

Recorded Aboriginal sites in the project area and its vicinity

Gunlake Quarry
Aboriginal heritage management plan
Figure 3.1

EMM



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

KEY

- Site boundary
- Extension area
- Cadastral boundary
- Watercourse / drainage line
- 10 m contour (mAHD)

Test pit artefact count*

- 0
- 1
- 2 - 5
- 6 - 10
- 11 - 20

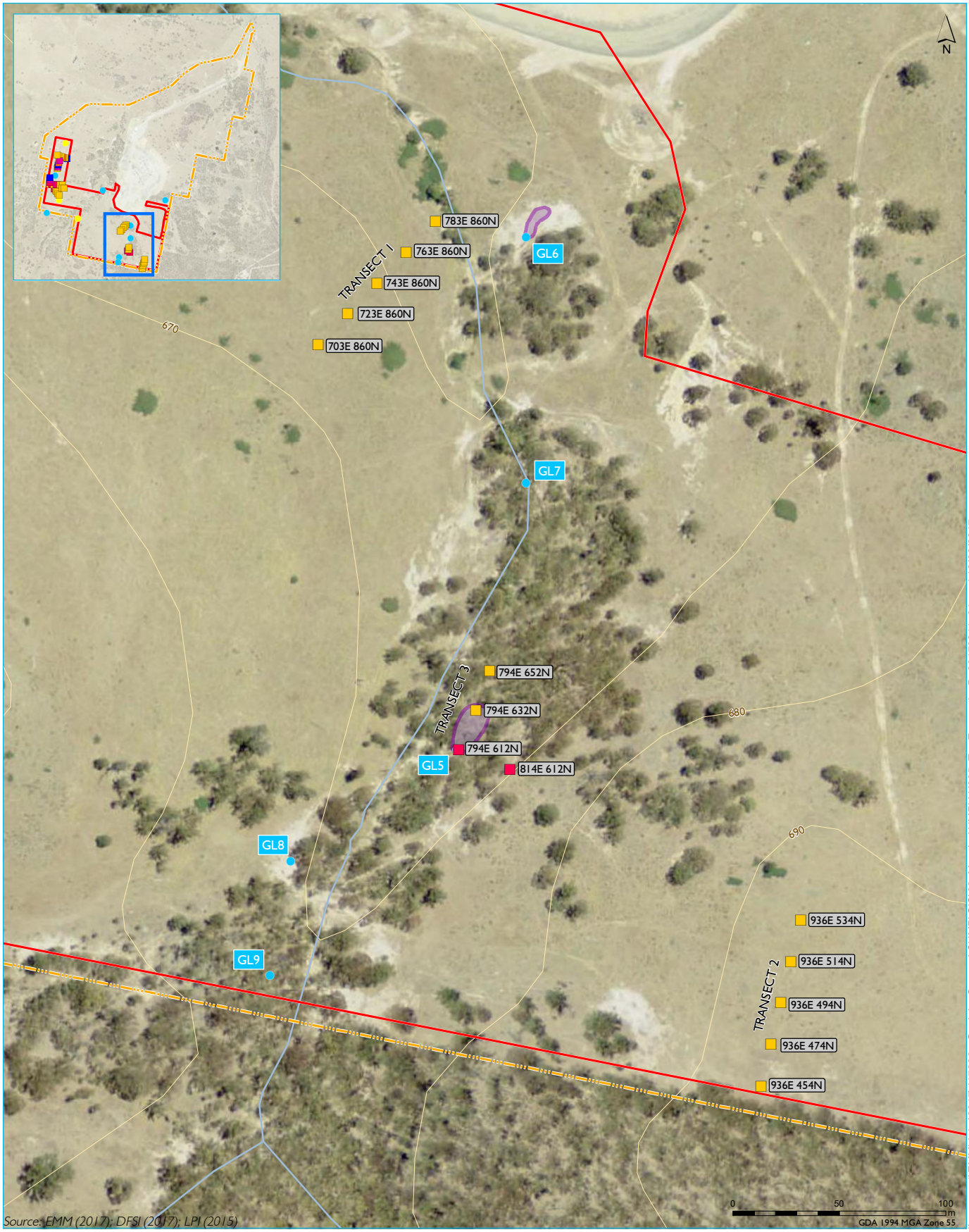
- Aboriginal site area
- Isolated find
- Open artefact site

Note: test pit size is not to scale

Test excavation results in the extension area

Gunlake Quarry
Aboriginal heritage management plan
Figure 3.2

EMM



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

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KEY

- Site boundary
- Extension area
- Watercourse / drainage line
- 10 m contour (mAHD)

Test pit artefact count*

- 0
- 2 - 5

- Aboriginal site area
- Open artefact site

Note: test pit size is not to scale

Test excavation results in the extension area

Gunlake Quarry
Aboriginal heritage management plan
Figure 3.3

EMM

4 Operational and training protocols

4.1 Obligation to protect Aboriginal cultural heritage

4.1.1 Obligation to avoid harm

All employees, contractors, sub-contractors and visitors to Gunlake Quarry have an obligation to avoid harming Aboriginal heritage unless engaged in an Aboriginal heritage management activity described in this plan.

The *National Parks and Wildlife Act 1974* (NPW Act) defines "harm" to an object or place as any act or omission that:

> (a) destroys, defaces or damages the object or place, or
>
> (b) in relation to an object-moves the object from the land on which it had been situated, or
>
> (c) is specified by the regulations, or
>
> (d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),
>
> but does not include any act or omission that:
>
> (e) desecrates the object or place, or
>
> (f) is trivial or negligible, or
>
> (g) is excluded from this definition by the regulations.

4.2 Aboriginal heritage induction and permitting process

All employees, contractors, sub-contractors and visitors to Gunlake Quarry will be made aware of their obligation to avoid harm to Aboriginal heritage through an Aboriginal heritage component of the general site induction.

The Aboriginal heritage component of the site induction will include the following points expressed in plain English. The message is to convey that Aboriginal sites and objects:

- are protected by law;
- were distributed across the project area and that new sites may be exposed in areas outside of the disturbance footprints;
- are of significance to the Aboriginal community, are important to the wider community and must be treated with respect;
- have included stone tool sites; and
- can be hard to recognise, therefore reference must be made to the Aboriginal heritage maps in this AHMP in order to clearly identify them.

4.3 Implementation of this plan

The individuals responsible for the implementation of the plan are provided in Table 4.1. The plan will be stored in Gunlake's document control system; the latest version will be available electronically at all times. As the document owner, Gunlake is the contact point for this plan and its requirements, and will provide guidance and training to any person that requires additional training regarding this plan.

Table 4.1 Roles and responsibilities for Aboriginal heritage management

Role	Responsibilities
Project Director	• Ensure that adequate financial and personnel resources are made available for the implementation of the plan. • Primary contact with RAPs. • Oversee signage and fencing of areas containing artefacts in accordance with the plan.
Operations manager	• Manage the implementation of the plan at Gunlake Quarry
Environmental manager	• Ensure the Aboriginal heritage management measures required to be undertaken prior to construction are conducted in accordance with the measures outlined in this plan. • Ensure signage and fencing of artefacts is maintained. • Ensure inclusion of Aboriginal heritage in work inductions through delivery or input to induction documents. • Distribute copies of this plan as required. • Maintain records of Aboriginal consultation. • Arrange for a review of the plan if any new sites are identified at Gunlake Quarry, or if an approved modification to the development consent introduces new impacts on Aboriginal heritage which are not generally covered by the AHMP.

4.4 Measuring performance

Actions undertaken under the plan will be reported as part of the Annual Environmental Review report to the Department of Planning and Environment (DPE). Compliance with the plan will be measured by standard environmental auditing procedures undertaken at regular intervals.

5 Aboriginal site management

5.1 Management overview of Aboriginal sites

A summary of the Aboriginal sites identified in the project area, how each site is to be managed, and the current management status is presented in Table 5.1. A summary of the site locations and their management status is provided on Figure 5.1.

5.2 Aboriginal heritage protection

5.2.1 Active protection

Sites GL4ext, GL12 and GL13 will be avoided through active protection. Active protection means erecting fencing and installing signage to protect Aboriginal sites from nearby development activities. This is achieved by installation of star-pickets and bunting or similar around this visible extent of the site within an approximate 5 m buffer.

The relocated salvaged artefacts at GL123 and GL45 also receive active protection.

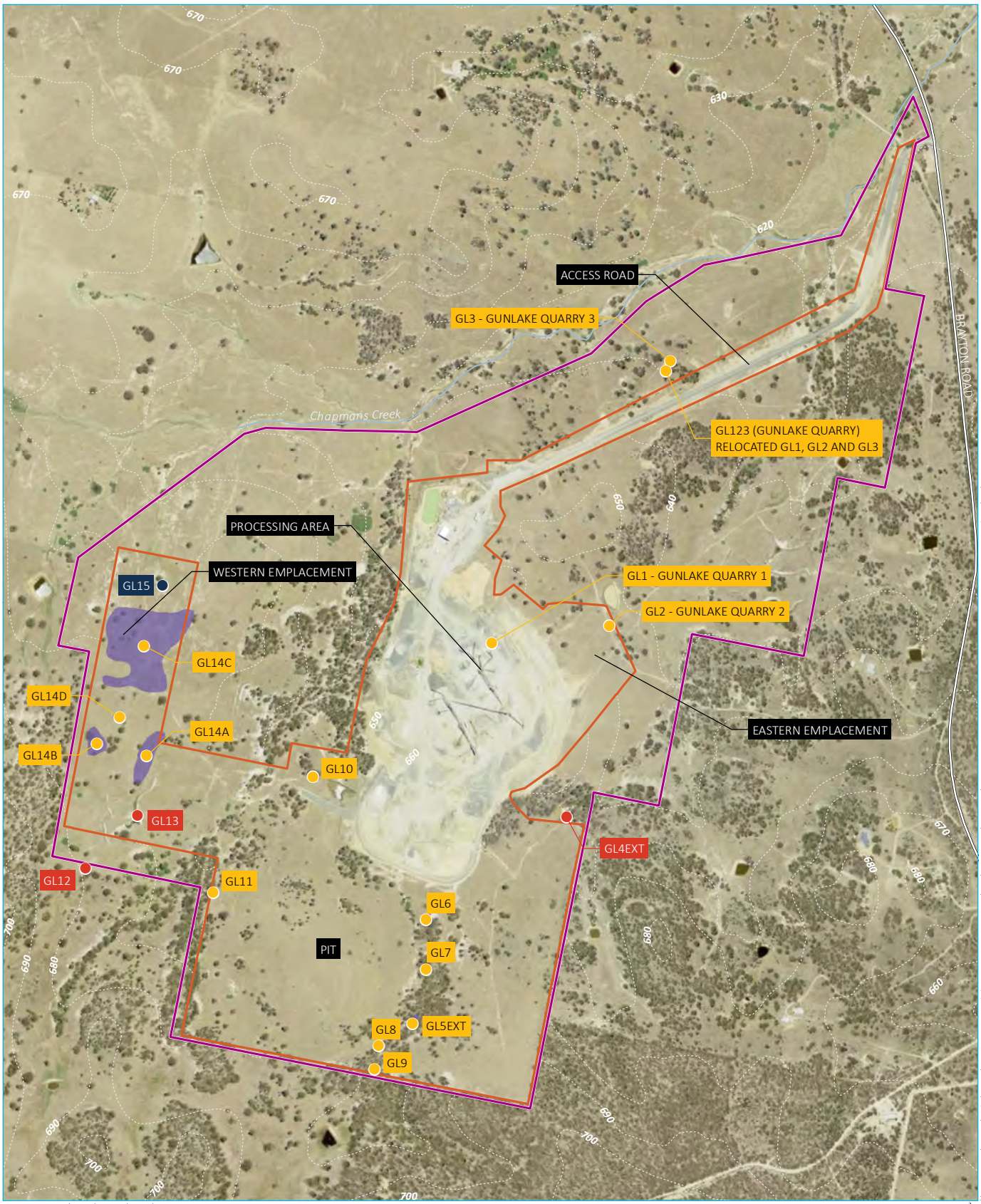
A suitably durable sign will be attached to the posts including words to the effect of:

> "Aboriginal heritage protection area
>
> Do not disturb
>
> Contact the Property Manager for more information on [phone number]".

5.3 Aboriginal site collection

The Aboriginal sites, within the original quarry footprint (GL1; GL2; GL3; GL4; and GL5) were collected prior to disturbance under the original project approval. Aboriginal sites within the extension project footprint (L5ext, GL6, GL7, GL8, GL9, GL10, GL11, GL14a, GL14b, GL14c, GL14d) were collected by a qualified archaeologist and RAPs on 19 June 2018. The Aboriginal site collection report for these sites is provided in Appendix C.

During the collection activities in June 2018, GL15 was inspected to mark the area for active protection, but the artefacts could not be re-located (Appendix C). Given this site was an isolated stone artefact, it is considered that this site has been destroyed through natural processes, such as erosion. As such no further actions are proposed for this site, and it is considered destroyed. An Aboriginal Site Impact Recording Form has been completed and submitted to the AHIMS Registrar to update the site status as per Section 7.1 of this Plan



Source: EMM (2023); DFSI (2017)

0 250 500 m

GDA 1994 MGA Zone 55

N

\\emmsvr1\EMMJobs\2019\J190263 - Gunlake Quarry SSD MOD2\GIS\02_Maps_AHMP\AHMP001_SiteManagementSummary_20230510_03.mxd 10/05/2023

KEY

- Site boundary
- Continuation project disturbance area

Existing environment

- Major road
- Topographic contour (10 m interval)
- Named watercourse
- Aboriginal site area

Aboriginal site status

- Salvaged
- Site valid - active protection
- Destroyed by natural processes

Site management summary

Gunlake Quarry
Aboriginal Heritage Management Plan
Figure 5.1

EMM
creating opportunities

5.4 Disposition of recovered artefacts

5.4.1 Overview

Short- and long-term management is needed for the stone artefact assemblages (recovered artefacts) collected during the salvage and the test excavation in the extension area.

5.4.2 Temporary storage of recovered artefacts

Following the salvage fieldwork, the collected artefacts were taken to EMM's Sydney Office for cataloguing and temporary storage prior to their final deposition. The artefacts are kept in a secure and locked room alongside the artefacts previously recovered during the test excavation.

5.4.3 Long-term storage

All recovered artefacts will be reburied on Gunlake property within approximately 10 m of the reburied artefacts location GL123 (AHIMS #51-6-0750). The reburied location will receive the same active protection as GL123.

The reburial procedure will follow the stone artefact disposition procedures as set out in Section 3.7 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010).

The reburial fieldwork will be undertaken by a qualified archaeologist so that it is recorded appropriately. RAPs who wish to be involved in the activity will also be invited to participate.

5.4.4 Salvage collection

On 19 June 2018, two EMM archaeologists and five RAP representatives conducted a salvage collection of Aboriginal stone artefacts within the disturbance footprint of the Gunlake Quarry Extension Project area (see Appendix C).

Site collection was carried out at: GL5EXT; GL6; GL7; GL8; GL9; GL14a,b,c,d; GL10; and GL11 (Figure 5.1).

In addition, four sites designated for active protection (fencing) were also inspected. Sites GL12 and GL13 were identified and the locations marked with a flag to ensure that fencing is correctly placed. Two other site locations, GL4EXT and GL15 requiring active protection, were visited but no artefacts were found. Both sites were on eroded and sloping terrain and may have washed away during rain. In the case of GL 15, as an isolated Aboriginal object in these conditions, it is considered to have been destroyed by natural processes for the purposes of future management.

Reburial of the artefacts collected during the salvage collection in June 2018 will be undertaken (see Section 5.6.3).

Reporting of these activities is presented in Appendix C and as required in Section 7.

Table 5.1 Management overview of identified sites in the project area

Site name	Quarry location	Site type	AHIMS number	Significance	Impact type	Level of impact	Consequence of impact	Management method	Site status
GL1	Existing quarry	Open stone artefact scatter	51-6-0747	Low	Quarry	Total loss	Total loss of value	Collection	Salvaged and relocated with GL2 and GL3 as GL 123
GL2	Existing quarry	Open stone artefact scatter	51-6-0748	Low	Quarry	Total loss	Total loss of value	Collection	Salvaged and relocated with GL 1 and GL3 as GL 123
GL3	Existing quarry	Open stone artefact scatter	51-6-0749	Low	Quarry	Total loss	Total loss of value	Collection	Salvaged and relocated with GL 1 and GL2 as GL 123
GL123 (relocated)	Existing quarry	Reburied artefacts	51-6-0750	Low	N/A	N/A	N/A	Active protection	Site valid
GL4	Existing quarry (Bypass Road)	Isolated find	TBC	Low	Bypass road	Total loss	Total loss of value	Collection	Salvaged and relocated with GL5 as GL45
GL5	Existing quarry (Bypass Road)	Open stone artefact scatter	TBC	Low	Bypass road	Total loss	Total loss of value	Collection	Salvaged and relocated with GL4 as GL45
GL45 (relocated)	Existing quarry	Reburied artefacts	TBC	Low	N/A	N/A	N/A	Active protection	Site valid
GL4ext	Extension area	Open stone artefact scatter	47-6-0777	Low	None	No impact	Nil	Active protection	Site valid
GL5ext	Extension area	Open stone artefact scatter with deposit	47-6-0778	Low	Pit extension	Total loss	Total loss of value	Collection	Salvaged
GL6	Extension area	Open stone artefact scatter	47-6-0779	Low	Pit extension	Total loss	Total loss of value	Collection	Salvaged
GL7	Extension area	Open stone artefact scatter	47-6-0780	Low	Pit extension	Total loss	Total loss of value	Collection	Salvaged
GL8	Extension area	Open stone artefact scatter	47-6-0781	Low	Pit extension	Total loss	Total loss of value	Collection	Salvaged
GL9	Extension area	Open stone artefact scatter	47-6-0782	Low	Pit extension	Total loss	Total loss of value	Collection	Salvaged

Table 5.1 Management overview of identified sites in the project area

Site name	Quarry location	Site type	AHIMS number	Significance	Impact type	Level of impact	Consequence of impact	Management method	Site status
GL10	Extension area	Open stone artefact scatter	47-6-0785	Low	Haul road	Total loss	Total loss of value	Collection	Salvaged
GL11	Extension area	Isolated find	47-6-0783	Low	Pit extension	Total Loss	Total loss of value	Collection	Salvaged
GL12	Extension area	Open stone artefact scatter	47-6-0784	Low	None	No impact	Nil	Active protection	Site valid
GL13	Extension area	Open stone artefact scatter	47-6-0786	Low	None	No impact	Nil	Active protection	Site valid
GL14a, GL14b, GL14c, GL14d	Extension area	open stone artefact scatter with deposit	47-6-0787 47-6-0788 47-6-0789 47-6-0790	Moderate	Embankment	Partial loss	Partial loss of value	Collection	Salvaged
GL15	Extension area	Isolated find	47-6-0791	Low	None	No impact	Total loss of value	-	Destroyed as a result of natural processes – validated by site investigations in 2018.

6 Unexpected finds protocol

6.1 Discovery of Aboriginal ancestral remains

In the event that known or suspected human skeletal remains are encountered during the activity, the following procedure must be followed:

- the immediate vicinity will be secured to protect the find and the find will be immediately reported to the work supervisor who will immediately advise the site supervisor or other nominated senior staff member;
- the environmental manager or other nominated senior staff member will notify the police and the state coroner on the same day of the find (as required for all human remains discoveries);
- the environmental manager or other nominated senior staff member will contact Heritage NSW for advice on identification of the skeletal material as Aboriginal and if so, management of the material;
- if it is determined that the skeletal material is ancestral Aboriginal remains, the RAPs will be contacted and consultative arrangements will be made to discuss ongoing care of the remains;
- if the remains are historical and not of Aboriginal origin, the Heritage NSW will be notified for further instruction; and
- works will not recommence until written approval is received.

6.2 Discovery of new Aboriginal sites

In the event of discovery of new Aboriginal sites which are outside of the approved disturbance footprint of project (which is already subject to salvage measures), the following will apply:

- the immediate vicinity will be secured to protect the find and the find will be immediately reported to the work supervisor who will immediately advise the environmental manager or other nominated senior staff member;
- an archaeologist and members of the RAPs must be contacted to validate the find and determine the significance of the objects(s);
- this AHMP will be updated within one month of the find; and
- any new sites must be registered in the AHIMS database and appended to an inventory in this AHMP.

6.3 Management of new Aboriginal sites

Newly identified sites that are not at risk of impact (ie over 50 m from approved disturbance areas) will be avoided through passive protection. Sites that are within 50 m of approved disturbance will be managed through active protection measures identified in this plan (refer Section 5.2).

In the event that newly identified sites (as defined in Section 6.2 above) will be impacted by an approved activity and cannot be avoided, they will be managed in a manner commensurate with their assessed significance consistent with the management measures provided in this plan, meaning:

- sites (stone artefacts) of low and moderate significance will be collected prior to ground disturbance according to the method described in Appendix C;
- decisions about sites (stone artefacts) of high significance will require further consultation with RAPs and Heritage NSW to determine an appropriate salvage methodology (eg archaeological test excavation or salvage excavation); and
- if new site types are identified (ie other than stone artefact sites), further consultation with RAPs and Heritage NSW will be undertaken to determine appropriate salvage measures.

7 Reporting and communication

7.1 Statutory reporting requirements

Notifications to Heritage NSW are required in relation to discovery, impact and care of Aboriginal objects under the NPW Act. This will be the responsibility of the environmental manager.

7.1.1 Discovery of Aboriginal objects

Under Section 89A of the NPW Act, it is a requirement that Heritage NSW is notified of the existence of Aboriginal objects as soon as practicable after they are first identified. This is done through the completion of a Heritage NSW Aboriginal Site Card which is submitted to the Registrar of AHIMS for inclusion on the Aboriginal site database. Information regarding AHIMS and site recording forms can be downloaded from the Heritage NSW website located at:

https://www.heritage.nsw.gov.au/assets/Aboriginal-Site-Recording-Form.pdf

7.1.2 Care agreements

Under s85A of the NPW Act, Aboriginal objects remain the property, and under the protection of, the Crown until formal transfer to a person or persons of a class prescribed by the regulations occurs. There is currently no requirement for a care agreement because the salvaged Aboriginal objects will be reburied on Gunlake property (refer Section 5.6) and assigned an AHIMS number.

7.1.3 Reporting impact to Aboriginal sites

An Aboriginal Site Impact Recording Form must be completed following impacts to AHIMS sites that are:

a) a result of test excavation carried out in accordance with the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW;

b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by Heritage NSW;

c) undertaken for the purpose of complying with Secretary's environmental assessment requirements issued by the Department of Planning and Environment (DPE) for:

   i) state significant development (SSD),

   ii) state significant infrastructure (SSI), or

   iii) a major project, or

d) authorised by a SSD/SSI/former Part 3A consent/approval under the EP&A Act.

Completed forms must be submitted to the AHIMS Registrar at:

- ahims@environment.nsw.gov.au

Aboriginal Site Impact Recording Forms can be downloaded from the Heritage NSW website located at:

- https://www.environment.nsw.gov.au/resources/cultureheritage/aboriginal-site-impact-recording-form-120558.pdf

7.1.4 Gunlake Quarry annual report

Gunlake is required to submit an Annual Review to DPE each year. The Annual Review will include any additional matters relating to Aboriginal Heritage management and in particular any additional sites that may be identified during the life of project.

References

AASC (Australian Archaeological Survey Consultants) 2007, *Proposed hard rock quarry Marulan NSW: Preliminary archaeological assessment.* Prepared by AASC for Gunlake Quarries Pty Ltd.

CHMA (Cultural Heritage Management Australia) 2008, *Gunlake Aboriginal Heritage Management Plan*. Prepared by CHMA for Gunlake Quarries Pty Ltd.

- 2014, Gunlake Quarry, Marulan, NSW, Modification to Quarry Pit and Overburden Emplacement, Aboriginal Cultural Heritage Assessment. Prepared by CHMA for Gunlake Quarries Pty Ltd.

DECCW (Department of Environment Climate Change and Water) 2010, *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*, Department of Environment Climate Change and Water.

- 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, Department of Environment Climate Change and Water.

EMM (EMM Consulting Pty Limited) 2016, *Gunlake Quarry Extension Project Aboriginal cultural heritage assessment, including the results of an archaeological test excavation*. Prepared by EMM for Gunlake Quarries Pty Ltd.

Gunlake Quarries Pty Ltd February 2016, *Aboriginal Heritage Management Plan*. Prepared by and for Gunlake Quarries Pty Ltd.

OEH 20 May 2017, *DOC16/242158: Gunlake Quarry extension project (SSD 7090)*, Office of Environment and Heritage.

Appendix A

Consultation documentation

Aboriginal Consultation Log	Gunlake Quarry Project		
Draft AHMP sent	**Column1**	**Column2**	**Column3**
Organisation	Contact type	Date Sent	Comments
Gulgunya Ngunawal Heritage Aboriginal Consultancy	email	6/10/2017	Comment received
Wullung	email	6/10/2017	
Nundagurri Aboriginal Corporation	email	6/10/2017	
Pejar LALC	email	6/10/2017	Comment received
Walbunja Aboriginal Corporation	email	6/10/2017	
Gunyuu	email	6/10/2017	
Gundungurra Aboriginal Heritage Association Inc	email	6/10/2017	
Murrumbull	email	6/10/2017	
Bilinga	email	6/10/2017	
Wingikara	email	6/10/2017	
Munyunga	email	6/10/2017	
Yerramurra	email	6/10/2017	
Badu	email	6/10/2017	
Merrigarn	email	6/10/2017	
Murri Bidgee Mullangari Aboriginal Corporation	email	6/10/2017	
Duncan Falk Consultancy	email	6/10/2017	Comment received
Gunjeewong Cultural Heritage Aboriginal Corporation	email	6/10/2017	
Karrial	email	6/10/2017	
Buru Ngunawal Aboriginal Corporation	email	6/10/2017	
Koomurri Ngunawal Aboriginal Corporation	email	6/10/2017	
Thunderstone Aboriginal Cultural and Land Management Services	email	6/10/2017	
Corroboree Aboriginal Corporation	email	6/10/2017	
Goobah Development Pty Ltd	email	6/10/2017	
Gangangarra	email	6/10/2017	
Wandandian	email	6/10/2017	
Ngunawal	email	6/10/2017	
EORA	email	6/10/2017	
Ngunawal Heritage Aboriginal Corporation	email	6/10/2017	

From:	Pejar LALC
To:	Ryan Desic
Subject:	RE: Gunlake Quarry Aboriginal Heritage Management Plan
Date:	Monday, 9 October 2017 9:44:55 AM
Attachments:	image001.png

Morning Ryan

Is it possible for you to come to our office and sit down and go through the plan.

Can you also tell me who the reps were that were onsite? All it says in the report was that you had 5 reps, no mention of their names which is a bit rude, and also the organisation that they are from? Why aren't they mentioned?

If you could give me a call if that is easier.

Kind regards

Delise Freeman
CEO
Pejar Local Aboriginal Land Council
80 Combermere Street
Or PO Box 289
Goulburn NSW 2580
(T) 0248223552
(F) 0248223551
(M) 0417254813

From: Glen Freeman
To: Ryan Desic
Subject: Re: Gunlake Quarry Aboriginal Heritage Management Plan
Date: Saturday, 7 October 2017 5:18:12 PM
Attachments: image001.png

Dear Ryan,

Please understand that this is Ngunawal Dharwra(Land, Country, Nation) and that according to our Spiritual Lore, irrespective of the so called legislative requirements? we are connected to any tangible or intangible elements on our Country, to involve any other RAP other than those of Ngunawal descent in the reburial requirements is totally inappropriate and disrespectful to us as custodians on our country, it's way past time that your organisation realise that any Cultural involvement on country is to be carried out by the Custodians of Country and nobody else, please respect our Cultural and Spiritual beliefs, as to the other aspects of the management plan, I have no issues.

Regards

Glen

Sent from Outlook

Duncan Falk Consultancy

Duncan Falk
Manager
T +61 406 610 644
E: duncanfalk@hotmail.com

31 October 2017

EMM Consulting
c/o Ryan Desic

Via e-mail: rdesic@www.emmconsulting.com.au

Dear Ryan,

RE: Gunlake Quarry Aboriginal Heritage Management Plan
Project Approval 07-0074 and Development Consent SSD7090

Duncan Falk Consultancy has read the AHMP for the said project and endorses the document, the management plan and its procedures that are set out.

Duncan Falk Consultancy would also like to express interest in the salvage operations to be conducted.

Regards

Duncan

Gunlake Quarry Extension Project, Marulan - ACHMP update - May 2023

Alan Williams
To Alan Williams
Cc Kirsty Nielsen
Bcc Alan Williams; OEH HD Heritage Mailbox; Delice Freeman Pejar LALC; Duncan Falk; corroboreecorp@bigpond.com.au; mazza51; Darleen Johnson; ngunawalhac@gmail.com; 'merrigarn@hotmail.com'; 'gulgunyaNHAC@hotmail.com'; 'walbunja@gmail.com'; 'walbell@bigpond.net.au'; 'ghal6522@bigpond.net.au'

Reply Reply All Forward

Thu 18/05/2023 2:2

J190263 Gunlake Quarry AHMP_V10mod.pdf
8 MB

Dear All,

In 2017, the Gunlake Quarry Extension Project just northwest of Marulan was approved (SSD 7090). As part of the approval, there was a requirement for an Aboriginal cultural heritage management plan (ACHMP) to be developed to inform post-approval requirements for the ongoing management and/or mitigation of cultural materials. The plan was developed in early 2018, and the mitigation measures (including a range of artefact collection) was undertaken in July 2018. A number of sites were also identified for avoidance into the future.

The ACHMP has recently been part of a broader independent environmental audit for the project. Only a single minor issue was identified with the ACHMP in relation to GL15, an isolated artefact at the northern edge of the project area. Specifically, the mitigation works undertaken in 2018 demonstrated that the site had been lost through natural processes between the assessment (in 2016) and the post-approval works (in 2018), but the ACHMP did not reflect this. It was proposed that the plan be updated to reflect the actual status of the site to ensure compliance with the ongoing heritage management of the project. We have now updated the AHIMS database and ACHMP to reflect this status.

In accordance with the agreed consultation processes outlined in the ACHMP, we have attached an updated copy of the document with these changes for your review, comment and input. We will look to finalise the ACHMP update in two weeks time, unless further time is sought by anyone during the review. (Please let me know if you'd like a hard copy provided and I'll get it in the post).

We will continue to keep you informed of the project and the ACHMP as it progresses, and will be in touch if additional on-site requirements or updates to this document are needed into the future.

Happy to discuss,
Thanks
Al

Dr Alan Williams FSA FRSA MAACAI MEIANZ
Associate Director
Technical Lead, Aboriginal Heritage
EMM creating opportunities
T 02 9493 9500
M 0438 104 740
D 02 9493 9584
Connect with us
SYDNEY | Ground floor, 20 Chandos Street, St Leonards NSW 2065

Associate Investigator
ARC Centre of Excellence for Australian Biodiversity and Heritage (CABAH)

Adjunct Senior Lecturer
School of Biological, Earth and Environmental Sciences
University of New South Wales,

Industry Fellow
Institute of Sustainable Futures
University Technology Sydney

Appendix B

Government consultation

Planning Services
Resource Assessments
Contact: Anthony Barnes
Phone: 8289 6709
Email: anthony.barnes@planning.nsw.gov.au

Mr David Kelly
Head of Development
Gunlake Quarries
PO Box 1665
Double Bay NSW 1360

Dear Mr Kelly,

Gunlake Quarry (SSD 7090)
Aboriginal Cultural Heritage Management Plan

I refer to your email dated 8 November 2017 requesting the Secretary's endorsement of two suitably qualified and experienced persons to prepare the Aboriginal Cultural Heritage Management Plan for Gunlake Quarry (SSD 7090).

The Department has reviewed the credentials of Mr Ryan Desic and Ms Pamela Kottaras of EMM Consulting Pty Ltd and agrees that they are suitably qualified. In accordance with condition 30(a) of Schedule 3 of the above consent, the Secretary endorses Mr Ryan Desic and Ms Pamela Kottaras to prepare the plan.

If you wish to discuss this matter further, please contact Anthony Barnes at the details listed above.

Yours sincerely

JEvans 10/11/17

Jessie Evans
A/Director
Resource Assessments
as the Secretary's nominee

Memorandum

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E info@emmconsulting.com.au

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19 February 2018

From Ryan Desic (Senior Archaeologist EMM Consulting Pty Limited)

Subject Gunlake Quarry AHMP: response to DPE and OEH submissions

This memorandum provides responses by EMM Consulting Pty Limited (EMM) to submissions received from the Department of Planning and Environment (DPE) and the Office of Environment and Heritage (OEH) in regard to the Gunlake Quarry Aboriginal Heritage Management Plan (AHMP) for Gunlake Quarry.

The AHMP has been prepared in accordance with condition 32 of Schedule 3 of MP 07_0074 and condition 30 of Schedule 3 of the Conditions of Consent issued by the NSW Land and Environment Court on 20 June 2017 (2017/108663).

Table 1 provides responses to DPE's outstanding requirements issued on 30 January 2018. Table 2 provides responses to OEH's comments issued on 16 February 2018.

Table 1 Response to DPE's outstanding requirements

Requirement	Comment (DPE)	Action required	Response (EMM)
(a) Be prepared in consultation with OEH and the registered Aboriginal parties	No evidence of OEH correspondence provided in relation to the draft plan. Agency consultation undertaken during the assessment of SSD 7090 will not be sufficient.	Provide evidence of OEH consultation in an Appendix	EMM initially called OEH in September 2017 during the preparation of the management plan. OEH advised that the recommended conditions of consent issued by OEH on 20 May 2016 should be followed. However, OEH also expected to be provided with the AHMP by DPE for review and comment. EMM have addressed OEH's recommended conditions of consent in Table 1.2 of the AHMP. Additionally, EMM provided OEH with the AHMP on 1 February 2018 for their review and comment. OEH provided their comments on 16 February 2018. EMM's response to OEH's submission is presented in Table 2 of this letter which also references where the AHMP has been updated to address OEH's comments.
General comment 1	The AHMP must provide clear commitments, rather than recommendations. Please replace the word 'should' with 'will' or 'must' throughout the document. E.g. Sections 1.6.2, Section 4.2, Section 6.3 and Section 7.1.2.	Update AHMP	Relevant sections have been updated to address DPE's comment.
General comment 2	In Section 5.2.1 site "GL12" is incorrectly identified as "G12".	Update AHMP	Relevant section has been updated to address DPE's comment.
General comment 3	Note typographical error in the heading of section 5.2.2 "projection" instead of protection.	Update AHMP	Relevant section has been updated to address DPE's comment.

Table 2 Response to OEH's comments

Section	Comment (OEH)	Action required	Response (EMM)
Section 1.5 Consultation with OEH	(a) OEH provided recommended conditions of consent on the 20 May 2016 not 2017.	Update AHMP	Relevant section has been updated to address OEH's comment
	(b) It is noted that the Conditions of Consent in Annexure 'A' of S34 Agreement Filed 30 June 2017 in Proceedings NO: 108663 of 2017, Conditions of Consent, Appendix 2 Statement of Commitments, Aspect Aboriginal Heritage, are not the same as those provided in the OEH recommended conditions of consent (20 May 2016).	N/A	This is acknowledged. Notwithstanding, EMM have incorporated all of OEH's recommended conditions of consent in the AHMP which are addressed in Table 1.2 of the AHMP. As such, the inclusion of these recommendations in the AHMP will have the same outcomes for Aboriginal cultural heritage management.
	(c) Conditions of Consent – Avoiding Aboriginal Sites; states that 'The Aboriginal Sites, GL4, GL 12, GL 13 and GL 15 will be fenced and avoided by the project. • It is noted that GL4 has been salvaged. A justification/explanation should be provided within the AHMP as why this Condition of Consent has not been adhered to. • It is understood that GL 12 is not being fenced and that passive protection is being used as a protection strategy as it lies over 50 metres from project disturbance boundaries. OEH supports this protection strategy as long as GL4ext and GL 12 remain visible on all mapping associated with the project and are included in standard environmental auditing procedures undertaken at regular intervals as per Section 4.4 Measuring performance.	Update AHMP	<u>Response to first point</u> Site GL4, as referenced in the Conditions of Consent, has not been salvaged. This error is explained by the following: EMM recorded GL4 (47-6-0777) and GL5 (47-6-0778) during the Aboriginal cultural heritage assessment for the extension project (EMM 2016). Subsequent to the ACHA and during the preparation of the AHMP, EMM identified that site names GL4 and GL5 had previously been issued to two nearby sites that were recorded in 2007. EMM therefore relabelled the sites recorded the during extension project in 2016 as GL4ext and GL5ext to avoid confusion in the AHMP. As such, the site GL4 designated for avoidance in the Conditions of Consent is actually site GL4ext referenced in the AHMP. This site has not been salvaged and will remain avoided. <u>Response to second point</u> Gunlake and EMM agree with this comment.
Section 4.2	(a) How will the records of staff inductions be managed?	N/A	The Aboriginal heritage component of the site induction will be included as part of the general site induction that needs to be completed by all staff and contractors working within the quarry. Records of induction are managed by Gunlake. As the Aboriginal heritage component forms part of a general site induction, the records of staff/contractors completing the general induction will be evidence that they have been inducted on Aboriginal heritage matters.

Table 2 Response to OEH's comments

Section	Comment (OEH)	Action required	Response (EMM)
Section 5.3.3	(d) As per Section 1. 7.2, this ACHMP must be updated to reflect the salvage effort within one month of the collection.'		
	(i) This should refer to section 1.6.2	Update AHMP	Relevant section has been updated to address OEH's comment
	(ii) ACHMP should be AHMP	Update AHMP	Relevant section has been updated to address OEH's comment
	(iii) Section 1.6.3 provides for the review of the AHMP where any changes are made. Is it possible to make changes and have AHMP reviewed by the Registered Aboriginal Parties within one month?	Update AHMP	Section 1.6.3 of the AHMP has been updated to include provisions for minor plan updates which do not require registered Aboriginal parties to review the AHMP. This comprises making minor changes to the AHMP inventory.
Section 6.1	(e) This section should include a statement saying that works cannot recommence until written approval is received.	Update AHMP	Section 6.1 of the AHMP has been updated to address OEH's comment.
Section 6.3	(f) Management strategies have only been included for new stone artefact scatters. Is it possible that other site types may be found and will need to be managed?	Update AHMP	Section 6.3 has been updated as follows: • "if new site types are identified (ie other than stone artefact sites), further consultation with RAPs and OEH will be undertaken to determine appropriate salvage measures."
Department of Planning Comment D (i)	(g) It is our understanding that GL4 and GL4EXT are not the same site. GL4 has been salvaged and relocated with GL5 at the GL45 location. GL45 will receive active protection. GL4EXT will receive passive protection.	N/A	OEH's understanding is correct.
	(h) To make site identification clearer we suggest using Table 5.1. Management overview of identified sites in the project area. Updating the Site status for GL 1, GL2, GL3, GL4 and GL5 is recommended. Site status could be updated with the following: • GL 1 -Salvaged and relocated with GL2 and GL3 as GL 123 • GL2- Salvaged and relocated with GL 1 and GL3 as GL 123 • GL3- Salvaged and relocated with GL 1 and GL2 as GL 123 • GL4 - Salvaged and relocated with GL5 as GL45 • GL5 - Salvaged and relocated with GL4 as GL45	Update AHMP	Table 5.1 of the AHMP has been updated to address OEH's comment.

Kirsty Nielsen

From: Nicole Davis <Nicole.Davis@environment.nsw.gov.au>
Sent: Tuesday, 23 May 2023 8:24 PM
To: Alan Williams
Cc: Kirsty Nielsen
Subject: Heritage NSW Reply - Gunlake Quarry Extension Project (SSD 7090) Marulan - ACHMP update - May 2023

Hi Al and Kirsty,

Thank you for your email re Gunlake Quarry Extension Project, Marulan, (SSD 7090) ACHMP update, May 2023. I note that the ACHMP has been updated to reflect the status of GL15, an isolated artefact at the northern edge of the project area, to ensure compliance with the ongoing heritage management of the project. Heritage NSW has no additional concerns or comments and will place on file accordingly. Please contact me directly should you require any additional information.

Kind Regards
Nicole Davis

Nicole Davis
Manager Assessments
Heritage NSW
Department of Planning and Environment
T 02 4927 3156 M 0409 394 343 E nicole.davis@environment.nsw.gov.au
Locked Bag 5020 Parramatta 2124

NSW GOVERNMENT

From: Alan Williams <awilliams@emmconsulting.com.au>
Sent: Thursday, 18 May 2023 2:27 PM
To: Alan Williams <awilliams@emmconsulting.com.au>
Cc: Kirsty Nielsen <kirsty@gunlake.com.au>
Subject: Gunlake Quarry Extension Project, Marulan - ACHMP update - May 2023

Dear All,

In 2017, the Gunlake Quarry Extension Project just northwest of Marulan was approved (SSD 7090). As part of the approval, there was a requirement for an Aboriginal cultural heritage management plan (ACHMP) to be developed to inform post-approval requirements for the ongoing management and/or mitigation of cultural materials. The plan was developed in early 2018, and the mitigation measures (including a range of artefact collection) was undertaken in July 2018. A number of sites were also identified for avoidance into the future.

The ACHMP has recently been part of a broader independent environmental audit for the project. Only a single minor issue was identified with the ACHMP in relation to GL15, an isolated artefact at the northern edge of the project area. Specifically, the mitigation works undertaken in 2018 demonstrated that the site had been lost through natural processes between the assessment (in 2016) and the post-approval works (in 2018), but the ACHMP did not reflect this. It was proposed that the plan be updated to reflect the actual status of the site to ensure compliance with the ongoing heritage management of the project. We have now updated the AHIMS database and ACHMP to reflect this status.

In accordance with the agreed consultation processes outlined in the ACHMP, we have attached an updated copy of the document with these changes for your review, comment and input. We will look to finalise the ACHMP update in two weeks time, unless further time is sought by anyone during the review. (Please let me know if you'd like a hard copy provided and I'll get it in the post).

We will continue to keep you informed of the project and the ACHMP as it progresses, and will be in touch if additional on-site requirements or updates to this document are needed into the future.

Happy to discuss,
Thanks
Al

Dr Alan Williams FSA FRSA MAACAI MEIANZ
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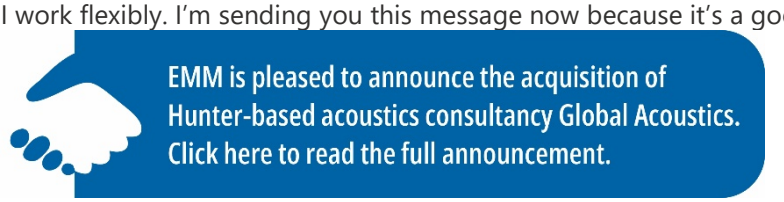

Appendix C

Salvage collection report

Gunlake Quarry Extension Project
Aboriginal site collection report

Prepared for Gunlake Quarries Pty Limited | 25 July 2018

Gunlake Quarry Extension Project

Aboriginal site collection report

Prepared for Gunlake Quarries Pty Ltd | 25 July 2018

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Gunlake Quarry Extension Project

Final

Report J17236RP1 | Prepared for Gunlake Quarries Pty Ltd | 25 July 2018

Prepared by	**Pamela Chauvel**	Approved by	**Ryan Desic**
Position	Consultant Archaeologist	Position	Senior Achaeologist
Signature		Signature	
Date	25 July 2018	Date	25 July 2018

Document Control

Version	Date	Prepared by	Reviewed by
V1	11/07/2018	P Chauvel	R Desic
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1 Introduction

1.1 Overview

Gunlake Quarry is a hard rock quarry operated by Gunlake Quarries Pty Limited (Gunlake). It is located approximately 7 km north-west of Marulan in the Goulburn Mulwaree local government area (LGA), approximately 160 km south-west of Sydney (Figure 1.1).

EMM Consulting Pty Limited (EMM) was engaged by Gunlake to collect Aboriginal stone artefact sites which would otherwise be impacted during the extension of quarrying operations under the Gunlake Extension Project (the project). The scope of the assignment was to collect the sites and provide a short report documenting the results. Accordingly, this report describes the method of collection, identifies the areas collected, maps the artefact distribution at each collected site and provides a succinct description of artefacts collected with select photos.

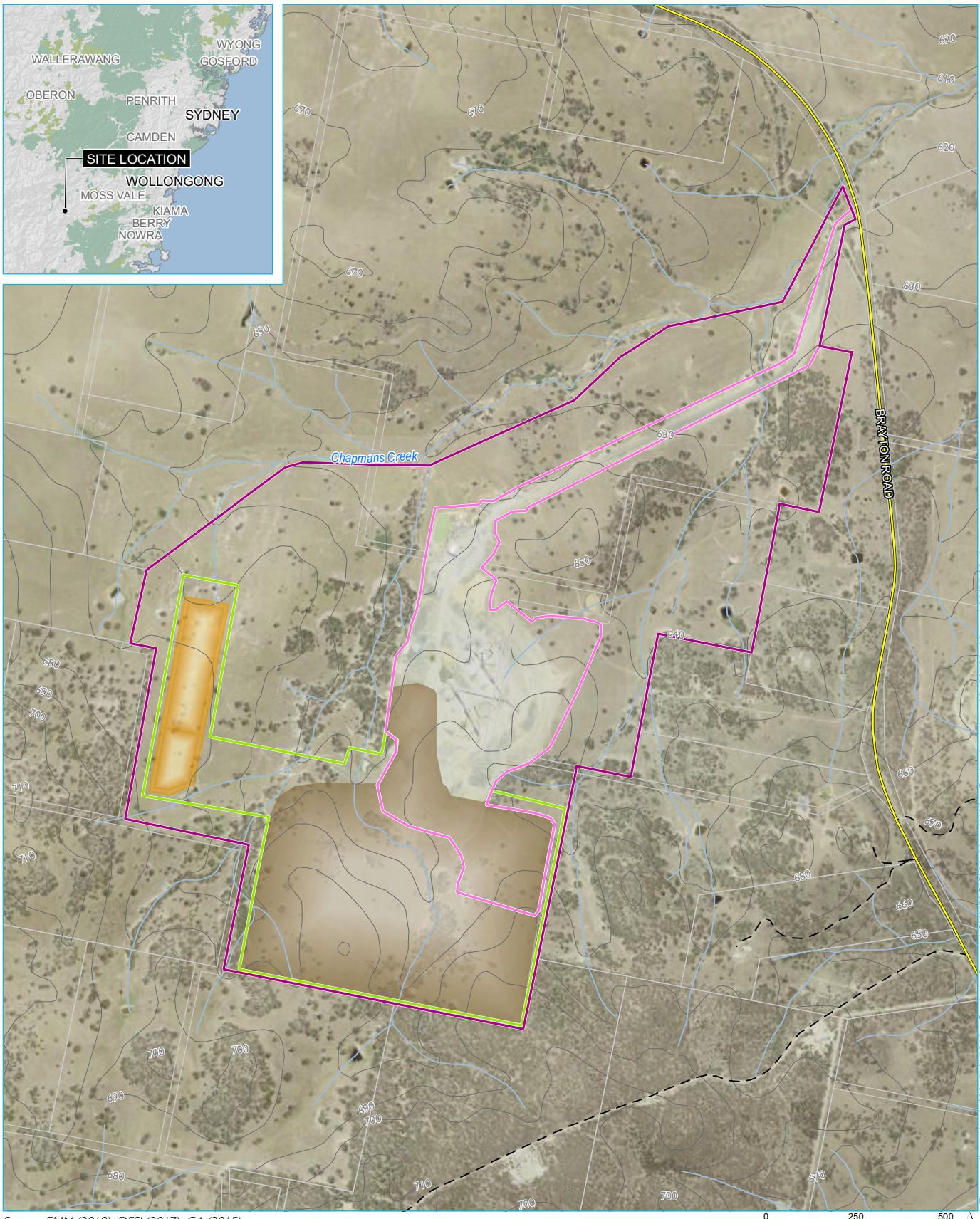
The collected artefacts will be reburied on Gunlake property and assigned an Aboriginal Heritage Information Management System (AHIMS) number.

1.2 Legislative context

The project is a State Significant Development (SSD) under the *State Environmental Planning Policy* (State and Regional Development) 2011. The existing quarry operates under Project Approval 07-0074 and the Gunlake Quarry Extension Project (extension project) will operate under Development Consent SSD 7090. Project approval was granted under Division 4.1 of Part 4 of the *Environmental Planning and Assessment Act* (EP&A Act).

An Aboriginal Cultural Heritage Assessment (ACHA) that identified, assessed and outlined the management measures related to Aboriginal cultural heritage values in the project area was prepared for Gunlake Quarries by EMM in February 2016.

Subsequent to project approval, EMM prepared an Aboriginal Heritage Management Plan (AHMP) in accordance with Condition 30 of Schedule 3 of the Development Consent SSD 70790. The AHMP was approved by the Department of Planning and Environment (DPE) on 16 April 2018. Chapter 5 of the AHMP detailed the salvage collection scope and methods that were followed for this report.



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Source: EMM (2018); DFSI (2017); GA (2015)

KEY

- Project area
- Existing quarry
- Extension area
- Final pit extent (year 30)
- Final emplacement (year 30)
- Main road
- Vehicular track
- Watercourse / drainage line
- 10 m contour (mAHD)
- Cadastral boundary

Project Context: Gunlake Quarry Extension

Gunlake Quarry Extension Project
Aboriginal site collection report
Figure 1.1

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1.3 Fieldwork methods

1.3.1 Overview

On 19 June 2018, EMM archaeologists Ryan Desic and Pamela Chauvel, directed the collection fieldwork accompanied by five Registered Aboriginal Party (RAP) representatives. They were:

- Justin Bell - Buru Ngunawal Aboriginal Corporation;
- Duncan Falk - Duncan Falk Consultancy;
- Chris Halls - Gundungurra Aboriginal heritage Association Inc;
- Aryssa McAlister - Pejar Local Aboriginal Land Council (LALC); and
- Dru McAlister - Pejar LALC.

1.3.2 Scope of surface collection

All Aboriginal sites within the project extension footprint were collected, and this was done prior to any ground disturbance related to the project in the vicinity of the Aboriginal sites.

The salvage team collected the complete extent of the Aboriginal sites that will be partially or totally destroyed by project related impacts. Collecting the entirety of sites that would be only partially impacted was undertaken because these sites are in an eroded context that will continue to degenerate and because it will reduce the risk of the periphery of these sites being inadvertently impacted by minor variations during the project.

Eleven sites previously identified in the ACHA (EMM 2016), were collected from within the approved emplacement footprint (shown in yellow on Figure 1.1) and the proposed pit footprint (shown in brown on Figure 1.1).

1.3.3 Fieldwork method

All previously recorded sites within the extension footprint were revisited and extensively surveyed. At most of these sites, additional artefacts were identified, marked with a handheld Global Positioning System (GPS) point and collected. Additional artefacts were attributed to existing sites if they were within 50 m of their boundary.

Beginning at the northern extent of the extension footprint, the salvage team walked across the disturbance footprint placing flags in the ground beside each artefact (Plate 1.1 and Plate 1.2). This area comprised sites 14 a, b, c and d. Prior to artefact collection, the site was photographed and each artefact was marked by a waypoint in a handheld GPS. All artefacts were placed into a snaplock plastic bag marked with the site name and collection date. The survey team then visited the remaining sites (GL 5EXT, 6, 7, 8, 9, 10 and 11) where artefact distribution was much sparser and the same procedure was followed. Figure 2.1 shows the transects walked by the salvage team and the distribution of artefacts identified.

Collected artefacts were taken to EMM's Sydney Office for cataloguing and temporary storage. The artefacts were catalogued on a database with the basic attributes of each artefact recorded with respect to artefact type, raw material, implement type (if applicable), maximum length and weight. The artefact collection catalogue is provided in Appendix A.

Plate 1.1 **Salvage team commencing surface collection at the northernmost extent of the proposed emplacement area of the disturbance footprint. View south-east (IMG_9191).**

Plate 1.2 Flags marking the locations of artefacts in GL14c. View south (IMG_9203).

1.3.4 Reburial

After cataloguing, the artefacts are to be reburied on Gunlake property.

Reburial procedure will follow the stone artefact disposition procedures as set out in Section 3.7 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010). The reburial site will be registered on the AHIMS site.

2 Fieldwork results

2.1 Background

A two day survey in July 2015 that covered the entire extension area identified 15 Aboriginal sites. All of the Aboriginal sites were comprised of stone artefacts, made up of 12 open stone artefact sites and three isolated finds. The highest artefact frequencies were identified on a hill spur crest in the proposed embankment area and comprised sites GL14a, b, c and d where over 300 artefacts were counted. The remaining sites contained less than 20 artefacts each and were found on hill spur crest, foot slope and stream bank landform elements (Table 2.1).

An archaeological test excavation program carried out over five days in October 2015, aimed to characterise the subsurface archaeological deposit of known surface sites and within surrounding landforms in the extension area where there was limited ground surface visibility. The excavation comprised eight test pit transects made up of 1 m x 1 m test pits. In total, 42 m^2 was excavated. Eighty-nine artefacts were recovered from the 42 test pits which equated to an average frequency of 2.12 artefacts per m^2. One third of test pits contained one or more artefacts and the majority of artefacts (92%) were recovered from the top 20 cm of soil. Artefact frequencies per 1 m x 1 m square ranged from 0 to 35. The highest densities of artefacts were recovered from the hill spur crest in the proposed embankment area in association with sites GL14a, b, c and d.

Sites GL14a, b, c and d were assessed as being fragmented parts of a larger distribution and were assessed to have moderate archaeological significance. This was because these sites are extensive artefact scatters on a common site landform with good examples of artefact types and raw materials. However, they lack archaeological integrity because of the highly eroded skeletal soils in this landscape. The remaining Aboriginal sites identified in the ACHA (EMM 2016) were assessed as having low archaeological significance.

The paucity of subsurface artefact frequencies in all tested areas was attributed to the poor integrity of the soil deposit, which was severely truncated by erosion. It was concluded that the surface artefact distributions offered a better representation of the local archaeological record.

The AHMP (EMM 2018) committed to collecting the 11 sites within the extension footprint. The remaining four sites (GL4EXT, 12, 13 and 15) are outside the project and were designated for avoidance and protection by fencing.

2.2 Summary of collection results

During the one day salvage collection, a total of 867 artefacts were collected. Consistent with the findings of the survey in 2015, the majority of artefacts (n=791) were recovered from site GL14c on the hill spur crest within the emplacement footprint (Plate 1.2). Nearby, on the same hill, an additional 56 artefacts were recovered from GL14a and 8 artefacts from GL14d. No artefacts were found at GL14b, despite three artefacts having been identified there in the initial survey (EMM 2016). GL15 was inspected but the isolated artefact was not found. Artefact density was particularly high in areas subject to extensive scald exposure, particularly on the hill crest shown in Figure 2.2. Ground surface visibility in the southern half of the emplacement area was more obscured by vegetation and artefact density decreased toward the southern boundary of the emplacement area.

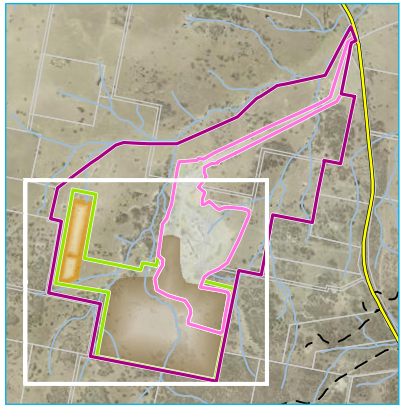
At the remaining sites to the southeast, artefact distribution was much sparser. Twelve artefacts were recovered from sites GL7, GL8, GL9, GL10 and GL11 (Plate 2.1). GL5EXT and GL6 were inspected by the salvage team but artefacts were not found.

Fieldwork results including the transects walked during the surface collection and the location of the artefacts are shown on Figure 2.1. While it is inevitable that not every artefact within the extension footprint would have been identified and collected, the extensive sample that was collected provides a representative and comprehensive sample of archaeological material at the site. The results of the surface collection are summarised in Table 2.1.

Plate 2.1 Site GL8 on an eroding bank beside a dry creek gully. View south (IMG_9224).

Table 2.1 Collection summary

Site name	Artefacts recorded During initial survey (EMM 2016)	Management measures outlined in AHMP (EMM 2018)	Outcome of fieldwork
GL 4EXT	3 artefacts	Active protection	Site inspected, artefacts identified and the area marked for protection
GL 5 EXT	2 artefacts	Collection	Site inspected but no artefacts were identified
GL 6	2 artefacts	Collection	Site inspected but no artefacts were identified
GL 7	1 artefact	Collection	1 artefact collected
GL 8	3 artefacts	Collection	4 artefacts collected
GL 9	2 artefacts	Collection	1 artefact collected
GL 10	4 artefacts	Collection	5 artefacts collected
GL 11	1 artefact	Collection	1 artefact collected
GL 12	15 artefacts	Active protection	Site visited, artefacts identified and the area marked for protection
GL 13	1 artefact	Active protection	Site visited, artefact identified and the area marked for protection
GL 14a	32 artefacts	Collection	56 artefacts collected
GL 14b	3 artefacts	Collection	Site inspected but no artefacts were identified
GL 14c	Estimate of over 300 artefacts	Collection	791 artefacts collected
GL 14d	12 artefacts	Collection	8 artefacts collected
GL 15	1 artefact	Active protection	Site inspected but no artefacts were identified



KEY

- Watercourse / drainage line
- Cadastral boundary
- Project area
- Existing quarry
- Extension area
- Final pit extent (year 30)
- Final emplacement (year 30)
- Artefact location
- Survey transcript

0 100 200 m

GDA 1994 MGA Zone 55

N

Source: EMM (2018); DFSI (2017); GA (2015)

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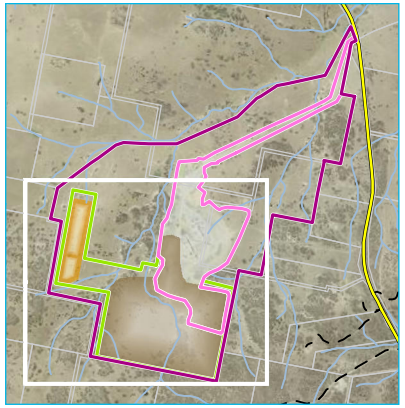
Fieldwork results – artefact locations

Gunlake Quarry Extension Project
Aboriginal site collection report
Figure 2.1

EMM



KEY

- Watercourse / drainage line
- Cadastral boundary
- Project area
- Existing quarry
- Extension area
- Final pit extent (year 30)
- Final emplacement (year 30)

Artefacts per 25 m²

59

1

0 100 200 m

GDA 1994 MGA Zone 55

N

Source: EMM (2018); DFSI (2017); GA (2015)

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Fieldwork results – artefact density

Gunlake Quarry Extension Project
Aboriginal site collection report
Figure 2.2

EMM

2.3 Site landscape characteristics

The extension area is characterised by undulating terrain comprised of broad hill spur crests with moderately inclined downward slopes towards the quarry. Artefact density was highest on these landforms.

The extension area is part of the Wollondilly River Catchment which flows north-east approximately 5 km to the west. The extension area contains tributaries of Chapmans Creek, consisting of mostly ephemeral creeks within gullies between steeper hills. A number of sites were identified beside an eroding dry gully within the proposed pit extension footprint (GL 5EXT, 6, 7, 8 and 9). This area was more heavily vegetated and sites consisted of isolated finds or artefact scatters of less than five (Plate 2.1).

Distribution and quantity of artefacts was highest across GL14c. The extensive open artefact scatter covered a very large broad hill spur crest exposure adjacent to a number of tributaries to Chapman's Creek. Effective ground visibility on the hill slope was generally high where the area has been extensively cleared for farming, predominantly grazing land for sheep. Vegetation clearance has resulted in sheet erosion on crests and hillslopes which transport soils down-slope. This results in increasingly skeletal soils on crests and aggrading soils on the lower slopes (Plate 2.2). This process can also result in the movement of artefacts down-slope. On the whole, the proposed pit extension footprint to the south-east was characterised by slightly lower ground surface visibility than the eroded surfaces in the emplacement footprint. Figure 2.1 shows the pattern of concentration of artefacts along the eroded tracks and exposures.

Plate 2.2 Hillcrest exposure, GL14c. View north (IMG_9220).

2.4 Artefact raw materials

A variety of artefact raw materials types and qualities were present in the assemblage (Plate 2.3). Silcrete, a silica-rich, sedimentary rock, was the predominant raw material recovered during the surface collection, comprising 44% of all artefacts collected (n=375). Outcroping silcrete has been identified in the region, from the banks of Marulan Creek, 12 km to the east (EMM 2015). Most of the silcrete was a light grey colour (73%, n=273). Other colours were red (n=41), dark grey (n=21), white (n=18), pink (n=14) and brown (n=7). Some of the red silcrete appeared to have been subject to deliberate or natural heat treatment (Plate 2.3). The majority of artefacts that were identified as having been retouched were silcrete, 28 out of a total of 33 retouched flakes.

Another sedimentary rock, chert, was also dominant within the assemblage, comprising 31% of the total (n=273). The quality of the material varied and it ranged in colour from light to dark grey. Scattered across the site were broken pieces of chert that may have been brought from elsewhere but could not be identified as artefactual and therefore were not catalogued or recorded.

Quartz flakes and cores were found across most of the sites, comprising 19% of the assemblage (n=166). Quartz outcropping was not observed within the extension area but is a locally and regionally available raw material and would likely be available nearby. It mostly presented as a milky white material (n=116) and where cortex was present, it was generally pinkish in colour. The quality of the quartz ranged from homogenous varieties with good conchoical fracture characteristics to material containing numerous flaws and incipient fracture planes which made the material less suitable for stone tool manufacture.

Other materials included IMT (indurated mudstone/tuff), a hard fine grained igneous rock that made up less than 5% of the assemblage, quartzite (less than 2%) and a single white chalcedony flake.

A summary of the raw materials and their frequencies is presented in Figure 2.3

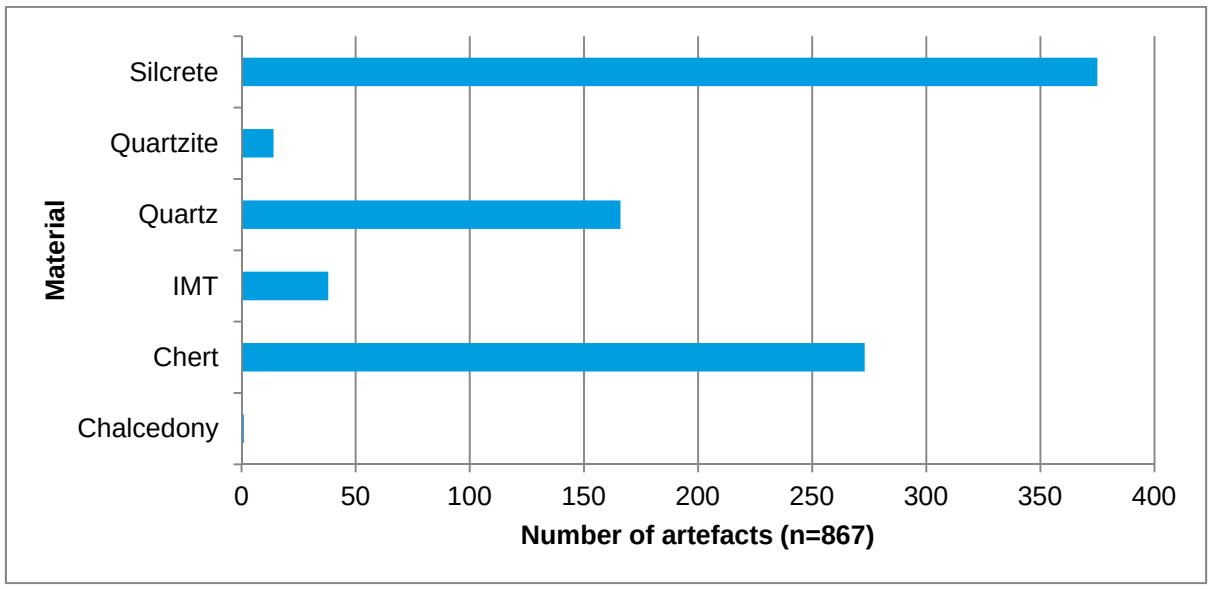

Figure 2.3 Artefact raw material types and their frequencies.

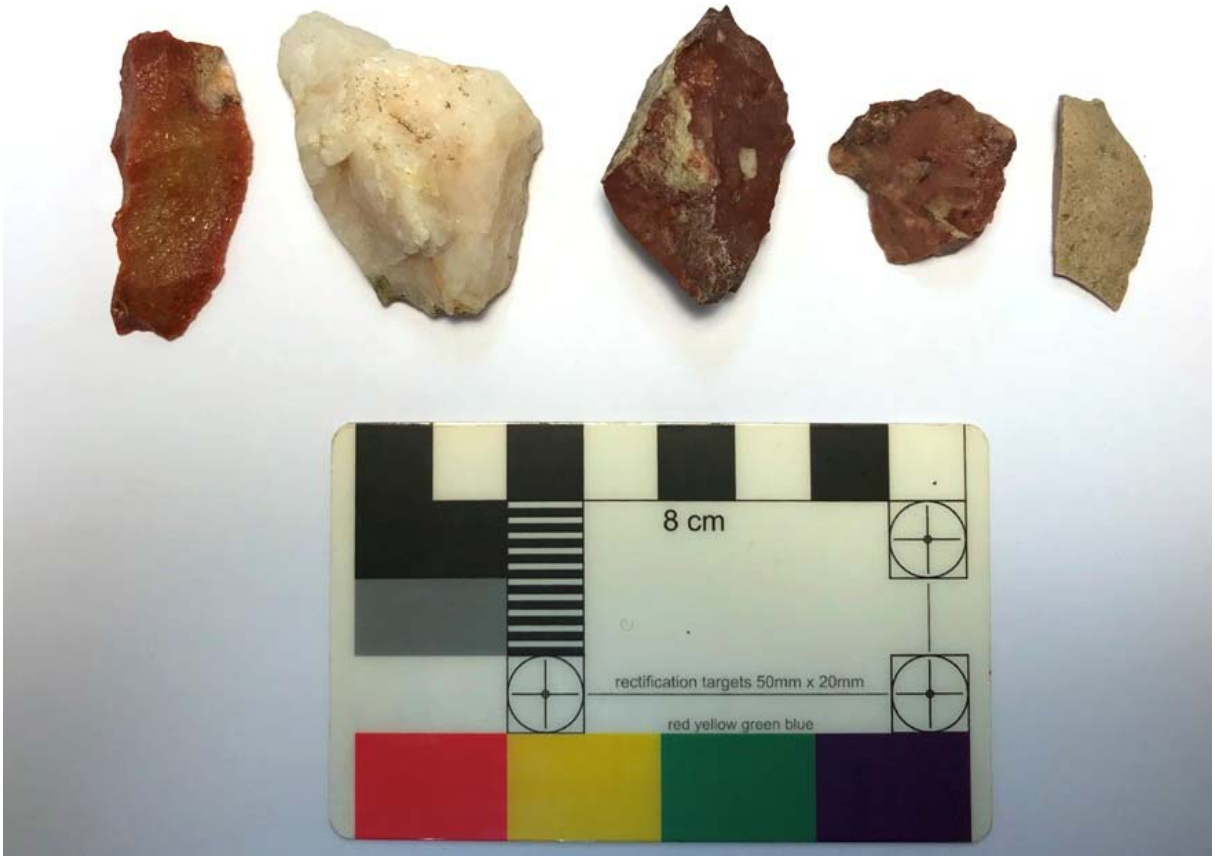

Plate 2.3 **Silcrete and quartz artefacts from GL10. From left to right: (a) silcrete flake, retouched along one lateral margin; (b) quartz core; (c) silcrete core, possibly heat treated; (d) silcrete flake; (e) silcrete flake, longitudinal split, missing distal end (artefacts # 1324-1328).**

2.5 Artefact types

Complete flakes made up 37% (n=415) of the assemblage. Almost half of the flakes were silcrete (n=201), just less than a quarter were quartz (n=100) and chert (n=88) and the remainder (n=26) were IMT, quartzite and chalcedony. Complete flakes ranged in size from 7 mm to 67 mm (Plate 2.4).

Retouch was identified on 33 flakes, and was most prevalent on silcrete (n=28). All the artefacts identified as backed (n=7) were silcrete. Flakes were retouched from the dorsal or ventral surface but not usually both. 'Bondi Points' (n=3) are asymmetrical flakes that have been backed along one lateral margin and come to a point at the distal end. 'Geometric microliths' (n=2) in this assemblage were small flakes that had been backed on one end and one lateral margin, creating a triangular shape. Plate 2.5 shows some of these retouched artefacts.

Broken flakes made up 37% of the assemblage (n=317). Broken flakes are comprised of proximal, distal, medial, longitudinally split pieces as well as flaked pieces. The majority of broken flakes were distal flakes and flaked pieces.

The term ‘flaked piece’ has been used in this report to describe angular fragments that are definitely artefactual but whose surfaces are either obscured or missing and therefore cannot be identified in any more detail. Proportionally, chert comprised a significant proportion of the flaked pieces (38%). This reflects the fracturing quality of some of the poorer quality material.

While ‘distal flakes’ have been categorised here as broken flakes, this does not mean that they might not have been useful, and may even have been deliberately selected for their sharp edges (Douglass and Holdaway 2011).

Cores comprised 16% of the assemblage (n=134). They ranged in size from 18-23 mm in width and were present in similar concentrations of silcrete (n=42), quartz (n=31) and chert (n=51). A large quartzite core of 131 mm length, from GL14c, was unusually large for this assemblage. Most cores did not have cortex (the original outer weathered surface of the rock) and those that did, generally had less than 50%, indicating that the cores were usually extensively worked before discard (Plate 2.6).

One potlid has been included in the assemblage. Potlids occur when siliceous rocks are heated, creating a circular flake to break off. Heating siliceous rocks such as silcrete reduces the fracture toughness and makes it possible to detach flakes with less force (Holdaway & Stern 2004, p.8). A collection of red silcrete artefacts concentrated in a section of GL14c appeared to have been heat treated (Plate 2.3 (c).

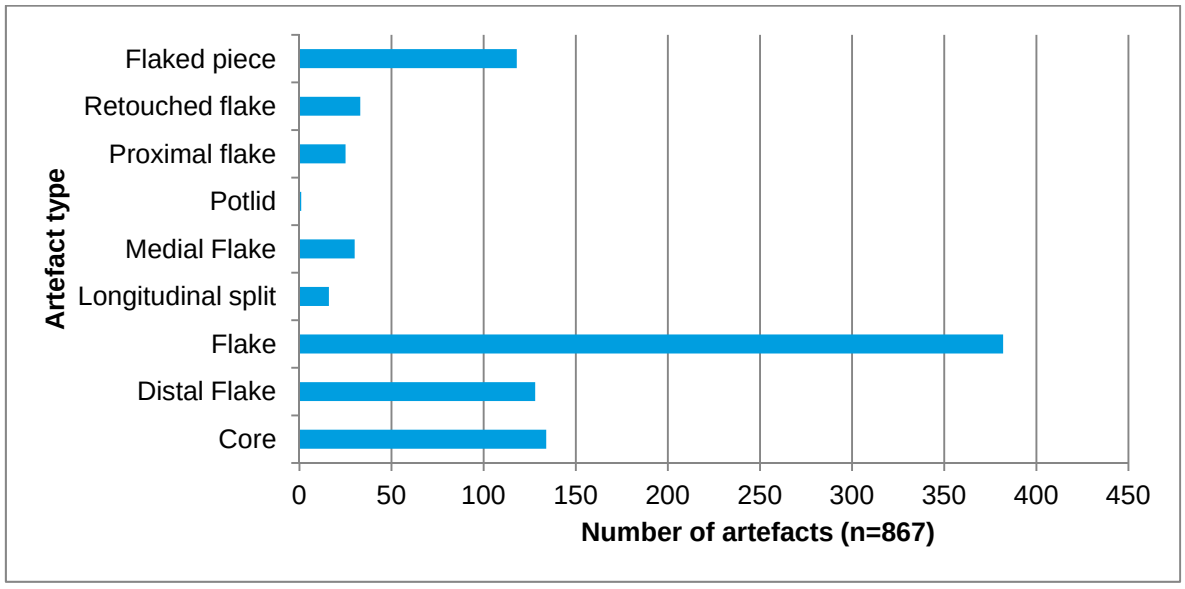

Figure 2.4 Artefact types and their frequency.

Plate 2.4 **Flakes from GL14c. From left to right: one quartzite distal flake (#1188); three silcrete flakes (#1174, #1175, #1177), two quartz flakes (#1120, #1114); one chert proximal flake (#1182) and one silcrete distal flake (#1185).**

Plate 2.5 **Retouched silcrete artefacts from GL14c. Left to right: (a) Bondi Point (#1007); (b) geometric microlith (#1313); (c) backed artefact (#1314); (d) backed artefact (1311), (e) geometric microlith (#1312); (f) flake retouched on two margins (#1315).**

Plate 2.6 A selection of cores from GL14C of different materials: chert, silcrete, IMT and quartz.

2.6 Discussion

The results of the salvage collection confirm the interpretation of the project area as presented in the project ACHA (EMM 2016). As the ACHA identified, the most common Aboriginal site types in the regional context are open artefact scatters and these are most likely to occur on elevated, level to gently inclined landforms that overlook streams. Survey and test excavation results showed that GL14a, b, c and d (associated with a low hill spur crest and its upper hill slope) contained the greatest concentration of stone artefacts, suggesting that these were the most intensely occupied area within the extension area. Dominant raw materials for stone artefact production in the area are silcrete, chert and quartz.

Historical clearance and agricultural use has exposed a considerable portion of the archaeological deposit particularly on crests and upper slopes resulting in higher artefact densities as shown in the heat density map (Figure 2.2) The degree of erosion and site slope makes it likely that artefacts at all of the sites within the extension footprint lack spatial integrity and may have moved, probably multiple times, from their original position. This makes it difficult to define specific 'activity areas' within the general open camp site.

The collected artefacts are generally common in material and type. Much of the assemblage generally represents the by-products of stone tool manufacture. Smaller cores with extensive reduction indicate the degree to which the materials were worked and the possible desire for smaller flakes. Backed tools that were identified were also small (22-24 mm) and there was a relatively high proportion of broken flakes.

The artefact assemblage from the salvage collection is typical of the local area and the region. Silcrete and quartz are the dominant raw materials across nearby sites at Lynwood Quarry, Peppertree Quarry and Marulan South Limestone Mine project landscapes (EMM 2016). These materials are likely to have been imported as raw materials from nearby outcroppings while chert, quartzite and IMT was probably brought in from further away, but no local quarries have been identified.

3 Conclusions and recommendations

Site impact recording forms should be completed for the impacted sites and submitted to AHIMS and an AHIMS site card should be completed for the reburial location of the collected artefacts.

The results of the salvage collection works will be added to the ACHMP during its next review period.

EMM recommend for this report to be referenced in any future salvage works for the project. Additional salvage results should be attached as an addendum to this report.

References

Douglass, J and S. Holdaway, 2011, 'Changing perspectives in Australian archaeology, part IV. Quantifying stone raw material size distributions: investigating cortex proportions in lithic assemblages from western New South Wales', *Technical Reports of the Australian Museum,*pp.45–57.

EMM Consulting (EMM) 2015, *Marulan South Limestone Mine Continued Operations Project: Aboriginal heritage assessmen,* prepared for Boral Resources (NSW) Pty Ltd.

EMM 2016 *Gunlake Quarry Extension Project: Aboriginal cultural heritage assessment including the results of an archaeological test excavation,* report for Gunlake Quarries Pty Ltd.

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Appendix A

Artefact collection catalogue

Artefact ID	Site Name	Type	Implement	Raw material	Length	Weight	Comment	Colour
478	GL 14A	Flake		Quartzite	48	16.81		Dark grey
479	GL 14A	Core		Chert	45	57.39	worked on multiple sides and directions	Light Grey
480	GL 14A	Flake		Chert	23	1.26	light grey ventral surface, dark grey on one of the two dorsal sides	Light Grey
481	GL 14A	Core		Chert	31	5.29		Dark grey
482	GL 14A	Core		IMT	49	28.06	unidirectional	Light Grey
483	GL 14A	Flake		IMT	35	6.69		Light Grey
484	GL 14A	Distal Flake		Silcrete	40	13.2	feather termination	Dark grey
485	GL 14A	Flake		Silcrete	17	1.13		Light Grey
486	GL 14A	Flake		Silcrete	45	21		Light Grey
487	GL 14A	Flake		Silcrete	25	4.57	Step termination. One flake removed on side	Light Brown
488	GL 14A	Retouched flake	retouch	Silcrete	30	6.52	Minimal retouch on one side initiated from the ventral surface	Dark grey
489	GL 14A	Flake		Silcrete	25	1.33		Light Grey
490	GL 14A	Flake		Silcrete	28	4.41	fine grain, with cream colouRed areas	Red
491	GL 14A	Distal Flake		Silcrete	19	0.61		Light Brown
492	GL 14A	Flake		Silcrete	58	37.75	Coarse silcrete with inclusions	Light Grey
493	GL 14A	Flaked piece		Silcrete	21	1.9		Light Grey
494	GL 14A	Flaked piece		Silcrete	31	5.6		Pink
495	GL 14A	Core		Silcrete	41	20.68	20% white cortex, multi-directional flaking	Dark grey
496	GL 14A	Retouched flake	Scraper	Quartz	38	11.79	Retouch along termination creating semi-circular artefact	Milky
497	GL 14A	Flake		Quartz	32	5.64	Pink cortex - 60% of dorsal surface	Milky
498	GL 14A	Flake		Quartz	25	3.09	Pink cortex - 50% of dorsal surface	Milky
499	GL 14A	Flake		Quartz	22	2.29	Pink cortex - 30% of dorsal surface	Milky
500	GL 14A	Flake		Quartz	19	1.38	thin flake	Milky
501	GL 14A	Flake		Quartz	25	3.99		Milky
502	GL 14A	Flake		Quartz	33	7.71		Milky
503	GL 14A	Distal Flake		Quartz	32	10.56		Milky
504	GL 14A	Flake		Quartz	26	1.31		Milky
505	GL 14A	Flaked piece		Quartz	21	2.97	thin flake	Milky
506	GL 14A	Flake		Quartz	22	3.03		Milky
507	GL 14A	Flake		Quartz	21	2.36		Milky
508	GL 14A	Flake		Quartz	24	6.33		Milky
509	GL 14A	Flake		Quartz	20	2.66		Milky
510	GL 14A	Longitudinal split		Quartz	22	5.13		Milky
511	GL 14A	Flake		Quartz	15	0.9		Milky
512	GL 14A	Flake		Quartz	17	1.48		Milky
513	GL 14A	Flake		Quartz	20	2.13		Milky
514	GL 14A	Proximal flake		Quartz	22	3.96		Milky
515	GL 14A	Flaked piece		Quartz	16	1.32		Milky
516	GL 14A	Flake		Quartz	12	0.34	thin flake	Milky
517	GL 14A	Flake		Quartz	13	0.65		Crystal
518	GL 14A	Flaked piece		Quartz	13	0.89		Milky
519	GL 14A	Flake		Quartz	37	22.99		Milky
520	GL 14A	Flake		Quartz	40	19.63		Light Grey
521	GL 14A	Flake		Quartz	31	11.84		Milky
522	GL 14A	Flaked piece		Quartz	28	6.78	Pink cortex on 40% of total	Milky
523	GL 14A	Flake		Quartz	21	3.86	step termination	Milky
524	GL 14A	Flake		Quartz	27	4.58	fine grain	Light Grey
525	GL 14A	Flake		Quartz	21	4.79	Pinkish cortex on 30% of dorsal surface	Milky
526	GL 14A	Flaked piece		Quartz	17	2.46		Milky
527	GL 14A	Core		Quartz	45	21.82	Bi-directional flaking	Milky
528	GL 14A	Core		Quartz	44	25.65	Bi-directional flaking	Milky
529	GL 14A	Core		Quartz	30	19.89		Milky
530	GL 14A	Core		Quartz	29	13.96	flakes struck from two or more sides	Milky
531	GL 14A	Core		Quartz	26	10.17	flakes struck from two or more sides	Pink
532	GL 14A	Core		Quartz	53	117	Split cobble, grey and Pink seams	White
533	GL 14A	Core		Quartzite	131	498	Metamorphic rock with silcrete inclusions. Unidirectional flaking	Light Brown
534	GL 14C	Distal Flake		IMT	34	3.82	Possible retouch on distal edge	Dark grey
535	GL 14C	Distal Flake		IMT	43	15.97	hinge termination	Light Grey
536	GL 14C	Core		IMT	40	46.79	multi-directional flaking	Light Grey
537	GL 14C	Flake		IMT	15	0.72		Light Grey
538	GL 14C	Distal Flake		IMT	18	0.57		Light Grey
539	GL 14C	Proximal flake		IMT	15	1.06		Light Grey
540	GL 14C	Proximal flake		IMT	24	3.51		Light Grey
541	GL 14C	Flake		IMT	24	1.98		Light Grey
542	GL 14C	Flake		IMT	26	1.71	hinge termination	Light Grey
543	GL 14C	Core		IMT	54	96.36	multi-directional flaking	Light Grey
544	GL 14C	Distal Flake		Chert	31	4.83	hinge termination	Black
545	GL 14C	Distal Flake		IMT	26	4.69		Light Grey
546	GL 14C	Distal Flake		IMT	34	9		Light Grey
547	GL 14C	Distal Flake		Chert	35	6.76	Part of bulb missing, split on diagonal	Light Grey
548	GL 14C	Distal Flake		IMT	21	2.68		Light Grey
549	GL 14C	Distal Flake		IMT	26	4.69		Light Grey
550	GL 14C	Core		IMT	39	17.53	multi-directional flaking	Light Grey
551	GL 14C	Flake		Chert	44	42.55	multi-directional flaking	Light Grey
552	GL 14C	Core		Chert	35	18.66	multi-directional flaking	Light Grey

553	GL 14C	Core		Chert	49	30.37		Light Grey
554	GL 14C	Flake		IMT	33	5.52		Light Grey
555	GL 14C	Flaked piece		Chert	37	10.6		Light Grey
556	GL 14C	Core		Chert	45	71.9		Light Grey
557	GL 14C	Core		Chert	36	13.51		Dark grey
558	GL 14C	Flake		Chert	27	4.48		Dark grey
559	GL 14C	Core		Chert	58	83	Fine grain. Varigated colours ranging from buff to dark brown, multi-directional flaking	Red
560	GL 14C	Core		Chert	31	20.14	single flake scar	Brown
561	GL 14C	Flaked piece		Chert	19	2.33		Dark grey
562	GL 14C	Distal Flake		Chert	25	2.43		Light Grey
563	GL 14C	Proximal flake		Chert	18	1.49		Dark grey
564	GL 14C	Flake		IMT	19	1.55		Light Grey
565	GL 14C	Distal Flake		Chert	19	0.92	feather termination	Dark grey
566	GL 14C	Medial Flake		Chert	13	1.23		Light Grey
567	GL 14C	Flake		Chert	17	1.53		Light Grey
568	GL 14C	Distal Flake		Chert	15	0.84	feather termination	Light Grey
569	GL 14C	Flake		Chert	18	0.62		Light Grey
570	GL 14C	Flake		Chert	20	0.84	thin flake	Light Grey
571	GL 14C	Core		Chert	42	48.45	Single flake scar	Dark grey
572	GL 14C	Flake		Chert	22	4.73		Dark grey
573	GL 14C	Retouched flake	retouch	Chert	41	5.7	Retouch from ventral surface along one margin	Dark grey
574	GL 14C	Flake		Chert	31	3.86		Light Grey
575	GL 14C	Core		Chert	49	24.32	multi-directional flaking	Light Grey
576	GL 14C	Core		Chert	52	31.83	uni-directional	Light Grey
577	GL 14C	Flaked piece		Chert	34	5.67		Light Grey
578	GL 14C	Distal Flake		Chert	30	2.92		Light Grey
579	GL 14C	Medial Flake		Chert	20	2.16		Light Grey
580	GL 14C	Flake		Chert	26	4.87		Dark grey
581	GL 14C	Distal Flake		Chert	14	0.82		Light Grey
582	GL 14C	Flake		Chert	23	1.04		Dark grey
583	GL 14C	Distal Flake		Chert	18	0.62		Dark grey
584	GL 14C	Distal Flake		Chert	23	1.54		Dark grey
585	GL 14C	Distal Flake		Chert	24	1.06		Dark grey
586	GL 14C	Medial Flake		Chert	17	1.44		Dark grey
587	GL 14C	Flake		Chert	26	2.28		Dark grey
588	GL 14C	Distal Flake		Chert	24	1.7		Dark grey
589	GL 14C	Flaked piece		Chert	10	0.24		Light Grey
590	GL 14C	Flaked piece		Chert	9	0.14	thin flake	Dark grey
591	GL 14C	Core		Silcrete	56	139	Split cobble	Red
592	GL 14C	Flake		Silcrete	18	2.98		Red
593	GL 14C	Flake		Silcrete	35	5.92		Red
594	GL 14C	Flaked piece		Silcrete	15	1.91		Red
595	GL 14C	Flake		Silcrete	16	1.14	thin flake	Red
596	GL 14C	Retouched flake	retouch	Silcrete	28	3.25	small retouch along both sides	Red
597	GL 14C	Distal Flake		Silcrete	37	8.4		Pink
598	GL 14C	Proximal flake		Silcrete	30	8.18		Light Grey
599	GL 14C	Retouched flake	retouch	Silcrete	31	7.86	Retouch from ventral surface along both sides, but more work on the thicker side	Pink
600	GL 14C	Retouched flake	retouch	Silcrete	38	16.41	Missing the bulb (distal flake) retouch along one margin	Light Grey
601	GL 14C	Core		Silcrete	28	13.57	Flake-like shape, flake scars on one side at right angles to flake scars on the other side	Dark grey
602	GL 14C	Core		Silcrete	38	12.77	Flake that has additional flakes removed from both margins from the dorsal surface, similar to 601	Light Grey
603	GL 14C	Retouched flake	retouch	Silcrete	23	4.83	Retouch along one margin from the ventral surface	Light Grey
604	GL 14C	Flake		Silcrete	43	10.08		Light Grey
605	GL 14C	Retouched flake	retouch	Silcrete	56	20.68	Pressure flaked along one margin - very small serrations	Light Grey
606	GL 14C	Distal Flake		Silcrete	35	6.42		Light Grey
607	GL 14C	Retouched flake	retouch	Silcrete	36	5.27	Retouch on one margin from ventral side - two larger flakes removed	Light Grey
608	GL 14C	Flake		Silcrete	48	13.35		Light Grey
609	GL 14C	Flake		Silcrete	25	1.89		White
610	GL 14C	Flake		Silcrete	27	6.55	single flake on one margin,struck from distal surface	White
611	GL 14C	Flake		Silcrete	31	1.82		Light Grey
612	GL 14C	Flake		Silcrete	24	0.95		Light Grey
613	GL 14C	Flake		Silcrete	16	0.57		Light Grey
614	GL 14C	Medial Flake		Silcrete	13	0.85		Light Grey
615	GL 14C	Flake		Silcrete	25	1.16		Dark grey
616	GL 14C	Distal Flake		Silcrete	20	1.52		Light Grey
617	GL 14C	Core		Silcrete	38	7.15		Light Grey
618	GL 14C	Distal Flake		Silcrete	12	0.18		White
619	GL 14C	Flake		Silcrete	20	2.3		White
620	GL 14C	Distal Flake		Silcrete	17	1.06		Light Grey
621	GL 14C	Flaked piece		Silcrete	18	1.56		Light Grey
622	GL 14C	Flake		Silcrete	26	1.88		Light Grey
623	GL 14C	Distal Flake		Silcrete	30	5.04		Dark grey
624	GL 14C	Medial Flake		Silcrete	31	9.69		White

625	GL 14C	Flake		Silcrete	28	1.7		Light Grey
626	GL 14C	Medial Flake		Silcrete	23	3.78		Light Grey
627	GL 14C	Flake		Silcrete	20	1.07		Pink
628	GL 14C	Distal Flake		Silcrete	24	0.96		Light Grey
629	GL 14C	Flake		Silcrete	18	0.98		Light Grey
630	GL 14C	Flaked piece		Silcrete	14	1.2		Light Grey
631	GL 14C	Flake		Silcrete	13	0.3		White
632	GL 14C	Flake		Silcrete	20	1.86		Light Grey
633	GL 14C	Flake		Silcrete	23	1.13		Light Grey
634	GL 14C	Flaked piece		Silcrete	14	0.48		Light Grey
635	GL 14C	Flaked piece		Silcrete	19	2		Light Grey
636	GL 14C	Flake		Silcrete	11	0.41		Light Grey
637	GL 14C	Distal Flake		Silcrete	13	0.52		White
638	GL 14C	Distal Flake		Silcrete	16	0.38		White
639	GL 14C	Distal Flake		Silcrete	15	0.65		Light Grey
640	GL 14C	Medial Flake		Silcrete	13	0.44		Light Grey
641	GL 14C	Flaked piece		Silcrete	17	3.24	Single flake taken from one side	Light Grey
642	GL 14C	Core		Silcrete	36	8.89	uni-directional flaking	White
643	GL 14C	Flake		Silcrete	9	0.11		White
644	GL 14C	Flake		Chert	27	3.46		White
645	GL 14C	Distal Flake		Chert	27	2.84		Brown
646	GL 14C	Flake		Chert	12	0.68		Light Grey
647	GL 14C	Flake		Chert	27	2.81		Light Grey
648	GL 14C	Flaked piece		Chert	20	1.32		Light Grey
649	GL 14C	Distal Flake		Chert	19	1.5		Light Grey
650	GL 14C	Flake		Chert	15	0.73		Light Grey
651	GL 14C	Flake		Chert	14	0.86		Light Grey
652	GL 14C	Flake		Chert	11	0.31		Light Grey
653	GL 14C	Flaked piece		Chert	12	3.85		Light Grey
654	GL 14C	Flaked piece		Chert	18	2.18		White
655	GL 14C	Flaked piece		Chert	27	5.44		Light Grey
656	GL 14C	Flake		Quartz	26	2.82		White
657	GL 14C	Flake		Quartz	21	4.07		White
658	GL 14C	Flake		Quartz	10	0.33		White
659	GL 14C	Flake		Quartz	15	0.3		White
660	GL 14C	Flake		Quartz	13	0.77		White
661	GL 14C	Flake		Quartz	12	0.24		White
662	GL 14C	Flake		Quartz	12	0.45		Milky
663	GL 14C	Flake		Quartz	12	0.38		Milky
664	GL 14C	Flake		Quartz	14	0.9		Milky
665	GL 14C	Flake		Quartz	18	1.08		Milky
666	GL 14C	Flake		Quartz	23	1.32		Milky
667	GL 14C	Flake		Quartz	10	0.28		Light Grey
668	GL 14C	Distal Flake		Quartz	19	1.53		Milky
669	GL 14C	Flake		Quartz	31	3.49		Light Grey
670	GL 14C	Flake		Quartz	32	4.91		Pink
671	GL 14C	Core		Quartz	34	16.44		Pink
672	GL 14C	Flake		Quartz	38	15.54		Milky
673	GL 14C	Core		Quartz	41	17.65	15% cortex	Pink
674	GL 14C	Core		Quartz	35	24.96		Milky
675	GL 14C	Core		Quartz	33	15.43		Milky
676	GL 14C	Flaked piece		Quartz	18	5.11		Light Grey
677	GL 14C	Core		Quartz	56	171		Milky
678	GL 14C	Core		Quartz	52	48.45	split cobble 50% cortex	Milky
679	GL 14C	Core		Quartz	44	49.4	20% cortex	Light Grey
680	GL 14C	Flake		Quartz	29	7.21		Milky
681	GL 14C	Flake		Quartz	28	1.55		Milky
682	GL 14C	Distal Flake		Silcrete	13	0.25		Milky
683	GL 14C	Flake		Chert	36	9.09		Light Grey
684	GL 14C	Distal Flake		Chert	41	13.15		Light Grey
685	GL 14C	Distal Flake		Chert	32	4.38	feather termination,	Light Grey
686	GL 14C	Distal Flake		Chert	24	2.86		Light Grey
687	GL 14C	Flake		Chert	30	3.2		Light Grey
688	GL 14C	Longitudinal split		Chert	51	21.84		Dark grey
689	GL 14C	Distal Flake		Chert	35	6.15		Light Grey
690	GL 14C	Longitudinal split		Chert	38	5.01		Light Grey
691	GL 14C	Flake		Chert	38	12.48	step termination	Light Grey
692	GL 14C	Flake		Chert	29	3.83		Light Grey
693	GL 14C	Flaked piece		Chert	18	2.26		Light Grey
694	GL 14C	Flaked piece		Chert	29	5.74		Light Grey
695	GL 14C	Distal Flake		Chert	38	18.8		Light Grey
696	GL 14C	Flaked piece		Chert	24	2.58		Light Grey
697	GL 14C	Flaked piece		Chert	24	1.9		Light Grey
698	GL 14C	Flaked piece		Chert	37	11.94		Light Grey
699	GL 14C	Flaked piece		Chert	39	24.91		Light Grey
700	GL 14C	Flake		IMT	25	1.34		Dark grey
701	GL 14C	Flake		Chert	25	3.1		Light Grey
702	GL 14C	Distal Flake		IMT	34	3.26		Light Grey
703	GL 14C	Flake		Chert	33	4.58		Light Grey
704	GL 14C	Distal Flake		Chert	18	0.61		Dark grey

705	GL 14C	Distal Flake		Chert	32	2.55		Light Grey
706	GL 14C	Distal Flake		Chert	30	3.53		Light Grey
707	GL 14C	Flake		Chert	23	1.91		Light Grey
708	GL 14C	Retouched flake	retouch	Chert	41	5.66	complete flake, ,pointed tip, small retouch along one margin from ventral surface	Light Grey
709	GL 14C	Medial Flake		Chert	12	0.3		Light Grey
710	GL 14C	Proximal flake		Chert	15	0.69		Light Grey
711	GL 14C	Flake		Chert	20	2.12		Light Grey
712	GL 14C	Flaked piece		Chert	10	0.43		Light Grey
713	GL 14C	Distal Flake		Chert	13	0.47		Light Grey
714	GL 14C	Flake		Chert	42	5.78		Light Grey
715	GL 14C	Flake		Chert	42	11	50%cortex on dorsal surface	Dark grey
716	GL 14C	Flaked piece		Chert	25	2.75		Light Grey
717	GL 14C	Flake		Chert	15	0.28		Light Grey
718	GL 14C	Flake		Chert	17	0.42		Light Grey
719	GL 14C	Distal Flake		Chert	19	0.9		Light Grey
720	GL 14C	Flake		Chert	15	0.32		Light Grey
721	GL 14C	Longitudinal split		Chert	17	0.64		Light Grey
722	GL 14C	Flake		Chert	36	2.5		Dark grey
723	GL 14C	Distal Flake		Chert	22	0.4		Light Grey
724	GL 14C	Distal Flake		Chert	20	1.45		Light Grey
725	GL 14C	Flaked piece		Chert	20	3.49		Light Grey
726	GL 14C	Flaked piece		Chert	25	1.98		Light Grey
727	GL 14C	Flaked piece		Chert	24	3.41		Light Grey
728	GL 14C	Flaked piece		Chert	20	2.56		Light Grey
729	GL 14C	Core		Chert	49	88	poor material, doesn't fracture well	Dark grey
730	GL 14C	Core		Chert	56	72.06	poor material, doesn't fracture well	Dark grey
731	GL 14C	Core		Chert	56	48	poor material, doesn't fracture well	Dark grey
732	GL 14C	Core		Chert	45	40.25	poor material, doesn't fracture well	Dark grey
733	GL 14C	Flaked piece		Chert	40	13.64		Light Grey
734	GL 14C	Flake		Chert	18	0.98		Light Grey
735	GL 14C	Flake		Chert	7	0.11		Light Grey
736	GL 14C	Distal Flake		Chert	40	18.97		Light Grey
737	GL 14C	Distal Flake		Chert	37	8.55		Light Grey
738	GL 14C	Distal Flake		Chert	36	7.14		Light Grey
739	GL 14C	Flake		IMT	35	8.2	very weathered	Light Grey
740	GL 14C	Flaked piece		Chert	40	7.54	Flake piece, clear negative scar	Dark grey
741	GL 14C	Flaked piece		Chert	33	7.9		Light Grey
742	GL 14C	Distal Flake		Chert	13	40		Light Grey
743	GL 14C	Core		Quartzite	45	47.16		Light Grey
744	GL 14C	Core		Chert	64	135	multiple directions	Light Grey
745	GL 14C	Core		Chert	46	107		Light Grey
746	GL 14C	Core		Chert	36	24.7		Light Grey
747	GL 14C	Flake		IMT	53	13.25		Light Grey
748	GL 14C	Flake		IMT	42	11.28		Light Grey
749	GL 14C	Flake		IMT	37	5.75		Light Grey
750	GL 14C	Flake		Chert	19	1.03		Light Grey
751	GL 14C	Flake		IMT	19	1.34		Light Grey
752	GL 14C	Distal Flake		Chert	39	31.76		Light Grey
753	GL 14C	Retouched flake	retouch	Silcrete	41	14.72	Red cortex covers most of dorsal surface, bifacial retouch. Distal? Flake	Dark grey
754	GL 14C	Distal Flake		IMT	26	5.04		Light Grey
755	GL 14C	Medial Flake		Silcrete	19	2.08		Light Grey
756	GL 14C	Flaked piece		Chert	38	15.64		Light Grey
757	GL 14C	Flaked piece		Chert	25	4.02		Light Grey
758	GL 14C	Flaked piece		Chert	29	8.19		Light Grey
759	GL 14C	Medial Flake		Chert	15	0.57		Light Grey
760	GL 14C	Flake		Quartz	29	11.61	Pink cortex on 40% of dorsal surface	Milky
761	GL 14C	Flaked piece		Quartz	25	674	Pink cortex on 20% of surface	Milky
762	GL 14C	Flake		Silcrete	67	58.19	Quartzite	Light Grey
763	GL 14C	Flake		Quartz	14	0.44		Yellow
764	GL 14C	Flake		Chert	35	3.87		Light Grey
765	GL 14C	Flake		Chert	39	11.68		Light Grey
766	GL 14C	Distal Flake		Chert	46	20.66		Light Grey
767	GL 14C	Flake		Chert	36	6.23		Light Grey
768	GL 14C	Flake		Chert	34	3.82		Light Grey
769	GL 14C	Distal Flake		Chert	27	1.08	thin flake	Dark grey
770	GL 14C	Retouched flake	retouch	Chert	37	5.31	retouch along one lateral margin, struck from the dorsal surface	Light Grey
771	GL 14C	Flake		IMT	33	4.8		Light Grey
772	GL 14C	Flake		Chert	19	2.1		Light Grey
773	GL 14C	Flake		Chert	29	1.47		Light Grey
774	GL 14C	Flake		Chert	18	2.43		Dark grey
775	GL 14C	Flake		Chert	25	1.18		Light Grey
776	GL 14C	Flaked piece		Chert	39	14.22		Light Grey
777	GL 14C	Core		Chert	57	53.51		Light Grey
778	GL 14C	Core		Chert	41	16.3		Light Grey
779	GL 14C	Core		Chert	50	44		Light Grey
780	GL 14C	Core		Chert	47	90.1		Light Grey
781	GL 14C	Core		Chert	42	27.98		Light Grey
782	GL 14C	Core		Chert	58	94.2		Light Grey

783	GL 14C	Core		Chert	40	17.58		Light Grey
784	GL 14C	Core		Chert	35	8.81		Light Grey
785	GL 14C	Core		Chert	66	90.37		Light Grey
786	GL 14C	Core		IMT	52	38.96		Light Grey
787	GL 14C	Core		Chert	38	34.82		Light Grey
788	GL 14C	Core		Chert	42	23.03		Light Brown
789	GL 14C	Core		Chert	41	21.73		Light Grey
790	GL 14C	Core		Chert	41	59.55		Light Grey
791	GL 14C	Core		Chert	47	89.97		Light Grey
792	GL 14C	Distal Flake		Chert	30	5.14		Light Grey
793	GL 14C	Core		Chert	29	8.52		Light Grey
794	GL 14C	Distal Flake		Chert	29	6.68	feather termination	Light Grey
795	GL 14C	Flake		Chert	35	7.25		Light Grey
796	GL 14C	Distal Flake		Chert	23	1.71		Light Grey
797	GL 14C	Distal Flake		Chert	29	7.29		Light Grey
798	GL 14C	Medial Flake		Chert	22	2.81		Light Grey
799	GL 14C	Flake		Chert	26	1.61		Light Grey
800	GL 14C	Medial Flake		Chert	24	1.61		Light Grey
801	GL 14C	Flake		Chert	30	2.12		Light Grey
802	GL 14C	Flake		Chert	21	4.44		Light Grey
803	GL 14C	Flake		Chert	29	6.92		Light Grey
804	GL 14C	Flake		Chert	19	2.51		Light Grey
805	GL 14C	Flake		Chert	17	1.03		Light Grey
806	GL 14C	Distal Flake		Chert	30	5.16		Light Grey
807	GL 14C	Longitudinal split		Chert	30	8.1		Light Grey
808	GL 14C	Flake		Chert	31	10.38		Dark grey
809	GL 14C	Flake		Chert	24	4.87		Light Grey
810	GL 14C	Distal Flake		Chert	28	3.28		Dark grey
811	GL 14C	Flake		Chert	31	3.23		Light Grey
812	GL 14C	Distal Flake		Chert	26	1.89		Dark grey
813	GL 14C	Flake		Chert	27	1.71		Light Grey
814	GL 14C	Flake		IMT	26	1.69		Light Grey
815	GL 14C	Flake		IMT	24	2		Light Grey
816	GL 14C	Flake		Chert	31	2.59		Light Grey
817	GL 14C	Distal Flake		Chert	24	1.81		Light Grey
818	GL 14C	Distal Flake		Chert	24	0.82		Light Grey
819	GL 14C	Longitudinal split		IMT	25	1.6		Light Grey
820	GL 14C	Distal Flake		Chert	19	1.93		Light Grey
821	GL 14C	Distal Flake		Chert	23	1.84		Light Grey
822	GL 14C	Distal Flake		Chert	21	1.18		Light Grey
823	GL 14C	Flake		Chert	15	0.47	Thin flake	Dark grey
824	GL 14C	Distal Flake		Chert	15	0.48		Light Grey
825	GL 14C	Flake		Chert	17	0.96		Light Grey
826	GL 14C	Proximal flake		Chert	13	1.17		Light Grey
827	GL 14C	Flake		Chert	14	0.58		Light Grey
828	GL 14C	Flake		Chert	19	1.38		Light Grey
829	GL 14C	Flake		Chert	19	1.25	thin flake	Light Grey
830	GL 14C	Distal Flake		Chert	20	1.1		Light Grey
831	GL 14C	Proximal flake		Chert	17	1.06		Light Grey
832	GL 14C	Flaked piece		Chert	30	7.82		Dark grey
833	GL 14C	Distal Flake		Chert	31	4.09		Light Grey
834	GL 14C	Flaked piece		Chert	27	4.22		Light Grey
835	GL 14C	Flaked piece		Chert	29	6.1		Light Grey
836	GL 14C	Flake		Chert	19	0.78		Light Grey
837	GL 14C	Distal Flake		Chert	28	3.32		Light Grey
838	GL 14C	Flaked piece		Chert	25	5.33		Light Grey
839	GL 14C	Distal Flake		Chert	25	5		Light Grey
840	GL 14C	Medial Flake		Chert	27	4.17		Light Grey
841	GL 14C	Flake		Chert	35	10.21		Light Grey
842	GL 14C	Medial Flake		Chert	28	5.16		Light Grey
843	GL 14C	Flaked piece		Chert	19	7.25		Light Grey
844	GL 14C	Distal Flake		Chert	19	0.72		Light Grey
845	GL 14C	Flake		Chert	11	0.24		Light Grey
846	GL 14C	Flake		Chert	24	2.31		Dark grey
847	GL 14C	Flaked piece		Quartz	22	3.09		Light Grey
848	GL 14C	Flaked piece		Quartz	18	1.04		Light Grey
849	GL 14C	Flaked piece		Quartz	13	0.68		Light Grey
850	GL 14C	Flaked piece		Quartz	39	10.71		Light Grey
851	GL 14C	Flaked piece		IMT	38	9.91		Dark grey
852	GL 14C	Distal Flake		Silcrete	35	10.99	80% cortex on dorsal surface, only one other flake extracted.	Red
853	GL 14C	Distal Flake		Silcrete	27	2.61	50% cortex on dorsal surface.	Red
854	GL 14C	Core		Silcrete	38	13.53	40%cortex	Red
855	GL 14C	Flake		Silcrete	36	8.38	80% cortex on dorsal surface.	Red
856	GL 14C	Core		Silcrete	31	8.26	20% cortex.	Red
857	GL 14C	Potlid		Silcrete	28	4.28		Red
858	GL 14C	Flake		Silcrete	30	2.61	70% cortex on dorsal side	Red
859	GL 14C	Longitudinal split		Silcrete	46	9	Mottled rock, 20% cortex on dorsal side	Red
860	GL 14C	Distal Flake		Silcrete	36	11.57	20% cortex on dorsal surface.	Red

861	GL 14C	Distal Flake		Silcrete	29	2.73	90% cortex on dorsal surface.	Red
862	GL 14C	Flake		Silcrete	35	5.21	35% cortex on dorsal surface.	Red
863	GL 14C	Distal Flake		Silcrete	38	10.68	80% cortex on dorsal surface.	Red
864	GL 14C	Core		Silcrete	38	16.69	25% cortex	Red
865	GL 14C	Core		Silcrete	38	31.2	90% cortex on dorsal surface.	Red
866	GL 14C	Flaked piece		Silcrete	26	9.31	negative scar	Red
867	GL 14C	Flaked piece		Silcrete	22	7.47	30% cortex	Red
868	GL 14C	Retouched flake	retouch	Silcrete	46	16.74	90% cortex on dorsal surface. Retouch on distal margin, struck from ventral side	Red
869	GL 14C	Flake		Silcrete	30	5.51	high silica content	Light Grey
870	GL 14C	Distal Flake		Silcrete	2	1.44		Light Grey
871	GL 14C	Flake		Silcrete	22	2.95		Dark grey
872	GL 14C	Flake		Silcrete	25	3.57		Dark grey
873	GL 14C	Flake		Silcrete	29	2.95		Light Grey
874	GL 14C	Flake		Silcrete	40	20.17		Dark grey
875	GL 14C	Flake		IMT	31	5.53		Dark grey
876	GL 14C	Retouched flake	retouch	Silcrete	38	14.31	Broken flake. Retouch from ventral side, along distal (?) margin/long edge.	Dark grey
877	GL 14C	Core		Silcrete	48	27.63		Pink
878	GL 14C	Core		Silcrete	56	41.67	Doesn't fracture well	Dark grey
879	GL 14C	Flake		Chalcedony	16	1.74		White
880	GL 14C	Core		Chert	40	86.52		Light Grey
881	GL 14C	Core		Quartzite	73	261	coarse	Light Grey
882	GL 14C	Flake		Silcrete	15	0.75		Light Grey
883	GL 14C	Retouched flake	retouch	Chert	40	16.94	Retouch along lateral margin from dorsal side	Dark grey
884	GL 14C	Flake		Chert	30	2.66		Light Grey
885	GL 14C	Flake		Silcrete	16	1.61		Light Grey
886	GL 14C	Flake		Silcrete	16	1.17	thin flake	Light Grey
887	GL 14C	Flake		Silcrete	40	4.53		Light Grey
888	GL 14C	Flake		Silcrete	21	2.66		Dark grey
889	GL 14C	Flake		Silcrete	15	1.43		Light Grey
890	GL 14C	Flake		Silcrete	15	1.15		Light Grey
891	GL 14C	Flake		Quartzite	17	0.86	coarse	Light Grey
892	GL 14C	Flake		Chert	25	3.94		Light Grey
893	GL 14C	Flake		Quartzite	24	2.94	coarse	Light Grey
894	GL 14C	Flake		Chert	20	0.59		Light Grey
895	GL 14C	Retouched flake	Bondi Point	Silcrete	23	2.67		Light Grey
896	GL 14C	Flake		Silcrete	20	0.75		Light Grey
897	GL 14C	Flake		Silcrete	14	1.23		White
898	GL 14C	Flake		Silcrete	12	0.39		Light Grey
899	GL 14C	Flake		Quartzite	21	0.73	coarse	Dark grey
900	GL 14C	Flake		Silcrete	17	1.86		Light Grey
901	GL 14C	Flake		Silcrete	15	0.72		White
902	GL 14C	Flake		Silcrete	15	0.45		Light Grey
903	GL 14C	Flake		Silcrete	22	1.1		Light Grey
904	GL 14C	Flake		Silcrete	11	0.27		Light Grey
905	GL 14C	Flake		IMT	35	2.52		Light Grey
906	GL 14C	Proximal flake		Silcrete	14	0.46		Light Grey
907	GL 14C	Flake		Silcrete	29	3.59		Light Grey
908	GL 14C	Flake		Silcrete	15	0.74		Light Grey
909	GL 14C	Longitudinal split		Chert	19	1.04		Light Grey
910	GL 14C	Retouched flake	retouch	Silcrete	39	10.04	Retouch on one lateral margin, struck from dorsal.	Light Grey
911	GL 14C	Retouched flake	retouch	Silcrete	37	11.05	Probable retouch - two largish strikes from one margin and one on the other margin, struck from ventral.	Dark grey
912	GL 14C	Longitudinal split		Silcrete	30	2.65		Light Grey
913	GL 14C	Flake		Chert	30	3.11		Light Grey
914	GL 14C	Proximal flake		Silcrete	15	1.21		Light Grey
915	GL 14C	Flake		Silcrete	30	9.25		Light Grey
916	GL 14C	Flake		Silcrete	26	1.34		Light Grey
917	GL 14C	Flake		Silcrete	17	1.23		Light Brown
918	GL 14C	Distal Flake		Silcrete	34	1.61		Light Grey
919	GL 14C	Flake		Chert	29	4.9	possible retouch on one lateral margin	Dark grey
920	GL 14C	Medial Flake		Chert	20	2.43		Light Grey
921	GL 14C	Flake		Chert	14	1.22		Light Grey
922	GL 14C	Flake		Chert	14	1.22		Black
923	GL 14C	Flake		Chert	25	5.34		Light Grey
924	GL 14C	Flake		Silcrete	32	9.29	10% cortex on dorsal side	Light Grey
925	GL 14C	Distal Flake		Silcrete	26	5.7		Light Grey
926	GL 14C	Flake		Silcrete	18	1.56		Light Grey
927	GL 14C	Flake		Silcrete	18	0.62		Light Grey
928	GL 14C	Medial Flake		Silcrete	13	0.39		Light Grey
929	GL 14C	Flake		Silcrete	12	0.49		Light Grey
930	GL 14C	Flake		Silcrete	12	0.32		Light Grey
931	GL 14C	Distal Flake		Chert	27	4.08	damage or two deliberate strikes to lateral margin	Light Grey
932	GL 14C	Core		Silcrete	43	15.88		Light Grey
933	GL 14C	Flake		Silcrete	22	2.01		White
934	GL 14C	Distal Flake		Silcrete	27	3.01		Light Grey

935	GL 14C	Distal Flake		Silcrete	18	0.64		Dark grey
936	GL 14C	Flake		Silcrete	14	0.65		Light Grey
937	GL 14C	Flaked piece		Chert	20	1.88		Light Grey
938	GL 14C	Medial Flake		Chert	20	0.62		Light Grey
939	GL 14C	Medial Flake		Chert	25	3.49		Light Grey
940	GL 14C	Proximal flake		Chert	20	1.91		Light Grey
941	GL 14C	Flaked piece		Silcrete	27	3.26		Light Grey
942	GL 14C	Flaked piece		Silcrete	20	2.21		Light Grey
943	GL 14C	Flake		Quartzite	34	4.8	coarse silcrete	Light Grey
944	GL 14C	Longitudinal split		Chert	40	3.11		Light Grey
945	GL 14C	Distal Flake		Chert	24	2.98		Light Grey
946	GL 14C	Flake		Silcrete	38	6.35	short, wide flake	Light Grey
947	GL 14C	Flake		IMT	51	40.33	platform preparation?	Light Grey
948	GL 14C	Flaked piece		Silcrete	27	2.55		Light Grey
949	GL 14C	Distal Flake		Chert	24	1.22		Light Grey
950	GL 14C	Flake		Silcrete	26	3.12		White
951	GL 14C	Core		Silcrete	38	34.12	flaking predominantly from one face	White
952	GL 14C	Core		Silcrete	42	34.59	multidirectional flaking, 40% cortex	White
953	GL 14C	Core		Silcrete	34	24.88	Multi-directional flaking	Light Grey
954	GL 14C	Core		Chert	46	50.93	multidirectional flaking, 40% cortex	Light Grey
955	GL 14C	Core		Quartzite	38	25.82		Dark grey
956	GL 14C	Core		Chert	29	9.67		Light Grey
957	GL 14C	Core		Chert	29	20.44		Light Grey
958	GL 14C	Flaked piece		Chert	32	9.28		Light Grey
959	GL 14C	Core		Chert	30	9.28		Dark grey
960	GL 14C	Core		Chert	25	7.58		Light Grey
961	GL 14C	Flaked piece		Chert	40	14.13		Light Grey
962	GL 14C	Flaked piece		Chert	25	5.93		Light Grey
963	GL 14C	Flaked piece		Chert	19	2.01		Light Grey
964	GL 14C	Flaked piece		Chert	14	2.31		Light Grey
965	GL 14C	Flake		Silcrete	13	1.02		White
966	GL 14C	Flake		Silcrete	18	1.64		Light Grey
967	GL 14C	Flake		Silcrete	15	1.78		Light Grey
968	GL 14C	Flaked piece		Silcrete	15	1.71		White
969	GL 14C	Medial Flake		Chert	22	1.15		Light Grey
970	GL 14C	Medial Flake		Chert	14	0.71		Milky
971	GL 14C	Distal Flake		Chert	32	7.96		Dark grey
972	GL 14C	Flaked piece		Silcrete	14	1.69		Light Grey
973	GL 14C	Core		Quartz	40	31.6		Milky
974	GL 14C	Core		Quartz	31	22.09		Milky
975	GL 14C	Core		Quartz	41	18.03		Milky
976	GL 14C	Flake		Quartz	32	11.23		Pink
977	GL 14C	Distal Flake		Quartz	16	1.25		Milky
978	GL 14C	Core		Quartz	24	4.46		Milky
979	GL 14C	Proximal flake		Quartz	17	2.12		Milky
980	GL 14C	Flake		Quartz	19	3.3		Milky
981	GL 14C	Flake		Quartz	37	14.27		Milky
982	GL 14C	Flake		Quartz	26	7.27		Milky
983	GL 14C	Flake		Quartz	19	1.48		Milky
984	GL 14C	Flake		Quartz	14	1.04		Milky
985	GL 14C	Flake		Quartz	21	1.51		Milky
986	GL 14C	Flake		Quartz	13	0.47		Milky
987	GL 14C	Flake		Quartz	11	0.46		Milky
988	GL 14C	Flake		Quartz	10	0.38		Milky
989	GL 14C	Flake		Quartz	15	1.34		Milky
990	GL 14C	Flake		Quartz	23	3.89		Pink
991	GL 14C	Flake		Quartz	30	5.11		Milky
992	GL 14C	Flake		Quartz	19	2.74		Light Grey
993	GL 14C	Flake		Quartz	14	1.61		Light Grey
994	GL 14C	Flake		Quartz	44	35.16		Light Grey
995	GL 14C	Flake		Silcrete	35	7.67	15% cortex on dorsal surface, large inclusions in fine matrix	Pink
996	GL 14C	Flake		Silcrete	29	3.08	high quartz content	Light Grey
997	GL 14C	Flake		Chert	11	0.15		White
998	GL 14C	Core		Quartz	18	3.38		Pink
999	GL 14C	Flake		Quartz	18	2.69		Milky
1000	GL 14C	Flaked piece		Quartz	23	4.7		Milky
1001	GL 14C	Flaked piece		Silcrete	30	6.78		Pink
1002	GL 14C	Flake		Silcrete	18	2.42		Pink
1003	GL 14C	Flake		Silcrete	44	9.9		Light Grey
1004	GL 14C	Retouched flake	retouch	Silcrete	32	9.14	Platform has been reworked	Light Grey
1005	GL 14C	Flake		Silcrete	28	2.49		Light Grey
1006	GL 14C	Flake		Silcrete	18	1.05		Light Grey
1007	GL 14C	Retouched flake	Bondi Point	Silcrete	27	1.02		Light Grey
1008	GL 14C	Flake		Silcrete	16	1.3		Light Grey
1009	GL 14C	Retouched flake	retouch	Silcrete	25	2.59	retouch along one lateral margin and platform	Light Grey
1010	GL 14C	Flake		Silcrete	20	1.12	thin flake	Light Grey
1011	GL 14C	Flake		Silcrete	18	2.44		Light Grey
1012	GL 14C	Flake		Silcrete	26	1.7		Light Grey
1013	GL 14C	Flake		Silcrete	24	0.72		Light Grey
1014	GL 14C	Flake		Silcrete	21	1.9		Light Grey

1015	GL 14C	Flake		Silcrete	13	0.36		Light Grey
1016	GL 14C	Flake		Silcrete	23	2.23		Light Grey
1017	GL 14C	Retouched flake	retouch	Silcrete	18	1.65	retouch on lateral margin, struck from ventral	Light Grey
1018	GL 14C	Flake		Silcrete	27	1.23		Light Grey
1019	GL 14C	Flake		Silcrete	20	0.63		Light Grey
1020	GL 14C	Flake		Silcrete	32	2.23		Light Grey
1021	GL 14C	Flake		Silcrete	23	2.26		Light Grey
1022	GL 14C	Longitudinal split		Silcrete	34	4.17		Light Grey
1023	GL 14C	Flake		Silcrete	25	3.44		Light Grey
1024	GL 14C	Flake		Silcrete	16	0.45		Light Grey
1025	GL 14C	Flake		Silcrete	22	0.6		Light Grey
1026	GL 14C	Flake		Silcrete	19	0.67		Light Grey
1027	GL 14C	Flake		Silcrete	20	0.96		Light Grey
1028	GL 14C	Flake		Silcrete	18	1.04		Light Grey
1029	GL 14C	Flake		Silcrete	14	0.28		Light Grey
1030	GL 14C	Flake		Silcrete	16	0.35		Light Grey
1031	GL 14C	Flake		Silcrete	18	0.89		Light Grey
1032	GL 14C	Distal Flake		Silcrete	27	1.04		Light Grey
1033	GL 14C	Retouched flake	retouch	Silcrete	17	0.99	retouch on distal margin, from ventral	Light Grey
1034	GL 14C	Flake		Silcrete	24	1.53		Light Grey
1035	GL 14C	Flake		Silcrete	29	2.81		Light Grey
1036	GL 14C	Flake		Silcrete	14	0.89		Light Grey
1037	GL 14C	Flake		Silcrete	21	1.9		Light Grey
1038	GL 14C	Flake		Silcrete	19	0.51		Light Grey
1039	GL 14C	Flake		Silcrete	12	0.34		Light Grey
1040	GL 14C	Flake		Silcrete	12	0.4		Light Grey
1041	GL 14C	Flake		Silcrete	18	2.3		Light Grey
1042	GL 14C	Flake		Silcrete	17	0.88		Light Grey
1043	GL 14C	Flake		Chert	14	0.71		Dark grey
1044	GL 14C	Flake		Chert	22	2.97		Dark grey
1045	GL 14C	Retouched flake	retouch	Silcrete	23	2.19	retouch on platform	Light Grey
1046	GL 14C	Proximal flake		Silcrete	23	1.92		Light Grey
1047	GL 14C	Retouched flake	Bondi Point	Silcrete	26	2.23	distal flake, retouch on one lateral margin	Dark grey
1048	GL 14C	Flake		Silcrete	18	0.96		Light Grey
1049	GL 14C	Distal Flake		Chert	24	1.88		Light Grey
1050	GL 14C	Flake		Quartz	26	4.05		Light Grey
1051	GL 14C	Distal Flake		Chert	30	3.34		Light Grey
1052	GL 14C	Distal Flake		Silcrete	17	1.19		Light Grey
1053	GL 14C	Flake		Silcrete	20	0.78		Light Grey
1054	GL 14C	Distal Flake		Silcrete	26	4.65		Light Grey
1055	GL 14C	Proximal flake		Silcrete	20	4.01		Light Grey
1056	GL 14C	Distal Flake		Silcrete	16	0.5		Light Grey
1057	GL 14C	Flake		Silcrete	19	0.77		Light Grey
1058	GL 14C	Flake		Silcrete	16	0.6		Light Grey
1059	GL 14C	Distal Flake		Silcrete	13	0.26		Light Grey
1060	GL 14C	Distal Flake		Chert	26	1.65		Light Grey
1061	GL 14C	Distal Flake		Chert	19	0.85		Light Grey
1062	GL 14C	Proximal flake		Silcrete	24	1.82		Light Grey
1063	GL 14C	Distal Flake		Silcrete	19	1.12		Dark grey
1064	GL 14C	Medial Flake		Chert	25	4.1		Light Grey
1065	GL 14C	Proximal flake		Silcrete	21	2.49		Light Grey
1066	GL 14C	Proximal flake		Silcrete	13	0.22		Light Grey
1067	GL 14C	Proximal flake		Silcrete	15	0.52		Light Grey
1068	GL 14C	Flake		Chert	41	10.79		Light Grey
1069	GL 14C	Proximal flake		Silcrete	23	3.02		Light Grey
1070	GL 14C	Medial Flake		Silcrete	21	2.26		Dark grey
1071	GL 14C	Distal Flake		Chert	14	0.7		Light Grey
1072	GL 14C	Core		Chert	40	13.85		Dark grey
1073	GL 14C	Core		Silcrete	37	12.48		Light Grey
1074	GL 14C	Core		Silcrete	27	8.7		Dark grey
1075	GL 14C	Core		Chert	26	6.84		Light Grey
1076	GL 14C	Core		Chert	40	13.85		Dark grey
1077	GL 14C	Core		Chert	21	3.6		Dark grey
1078	GL 14C	Core		Chert	21	3.89		Dark grey
1079	GL 14C	Flake		Silcrete	25	5.52		Light Grey
1080	GL 14C	Core		Silcrete	23	2.96		Light Grey
1081	GL 14C	Core		Silcrete	27	4.15		Light Grey
1082	GL 14C	Retouched flake	retouch	Silcrete	23	2.97	Distal flake, missing bulb, retouched on one lateral margin	Light Grey
1083	GL 14C	Core		Chert	22	1.86		Light Grey
1084	GL 14C	Core		Silcrete	20	6.46		Light Grey
1085	GL 14C	Core		Silcrete	18	3.72		Light Grey
1086	GL 14C	Flake		Chert	12	0.3		Light Grey
1087	GL 14C	Core		Chert	20	6.97	20% cortex	Light Grey
1088	GL 14C	Flake		Silcrete	22	1.4		Light Grey
1089	GL 14C	Flaked piece		Silcrete	16	1.31		Light Grey
1090	GL 14C	Medial Flake		Silcrete	14	0.38		Light Grey
1091	GL 14C	Flaked piece		Silcrete	14	1.17		Light Grey
1092	GL 14C	Medial Flake		Silcrete	8	0.14		Light Grey
1093	GL 14C	Distal Flake		Silcrete	20	0.72		Light Grey
1094	GL 14C	Distal Flake		Silcrete	16	0.52		Light Grey

1095	GL 14C	Medial Flake		Silcrete	14	0.26		Light Grey
1096	GL 14C	Flaked piece		Silcrete	11	0.22		Light Grey
1097	GL 14C	Flake		Silcrete	9	0.12		Light Grey
1098	GL 14C	Flake		Silcrete	9	0.18		Light Grey
1099	GL 14C	Flaked piece		Quartzite	53	51.94	15% cortex	Red
1100	GL 14C	Flaked piece		Silcrete	24	4.79		Red
1101	GL 14C	Core		Silcrete	42	51.84	Coarse inclusions. 20% cortex	Red
1102	GL 14C	Core		Silcrete	28	14.24		Light Grey
1103	GL 14C	Core		IMT	45	30		Light Grey
1104	GL 14C	Flake		Silcrete	28	2.74		Light Grey
1105	GL 14C	Longitudinal split		Silcrete	37	10.51	platform preparation	Light Grey
1106	GL 14C	Flake		Chert	28	5.29		Red
1107	GL 14C	Distal Flake		Silcrete	30	8.84	60% cortex on dorsal surface	Light Grey
1108	GL 14C	Distal Flake		Silcrete	30	7.69		Light Brown
1109	GL 14C	Flaked piece		Chert	30	8.84	5% cortex	Light Grey
1110	GL 14C	Flake		Chert	42	18.44	platform preparation	Light Grey
1111	GL 14C	Distal Flake		Silcrete	27	4.19		Light Grey
1112	GL 14C	Flaked piece		Silcrete	56	22		Light Grey
1113	GL 14C	Flake		Quartz	33	3.2		Light Grey
1114	GL 14C	Flake		Quartz	17	1.14		Milky
1115	GL 14C	Flake		Quartz	36	7.93	opaque	Crystal
1116	GL 14C	Flake		Quartz	31	5.95		Milky
1117	GL 14C	Flake		Quartz	28	14.3		Milky
1118	GL 14C	Flake		Quartz	28	4.63		Milky
1119	GL 14C	Flake		Quartz	24	1.64		Pink
1120	GL 14C	Flake		Quartz	24	4.19		Milky
1121	GL 14C	Flake		Quartz	28	5.1		Pink
1122	GL 14C	Core		Quartz	35	36.84	opaque	Milky
1123	GL 14C	Core		Quartz	24	12.25		Milky
1124	GL 14C	Core		Quartz	19	5.58		Milky
1125	GL 14C	Core		Quartz	24	7.81		Crystal
1126	GL 14C	Core		Quartz	34	42.29	flakes originating from a single platform	Light Grey
1127	GL 14C	Core		Quartz	35	27.69	20% cortex	Light Grey
1128	GL 14C	Core		Quartz	42	52.13		Milky
1129	GL 14C	Flake		Silcrete	51	5.51		Light Grey
1130	GL 14C	Distal Flake		Silcrete	36	7.93	10% cortex	Red
1131	GL 14C	Flake		Silcrete	16	0.78		Light Grey
1132	GL 14C	Flake		Silcrete	23	0.64		Pink
1133	GL 14C	Flake		Silcrete	34	4.2		Light Grey
1134	GL 14C	Flake		Silcrete	17	0.81		Light Grey
1135	GL 14C	Flake		Silcrete	23	1.38		Light Grey
1136	GL 14C	Flake		Silcrete	27	2.27		Light Grey
1137	GL 14C	Flake		Silcrete	34	6.55		Light Grey
1138	GL 14C	Flake		Silcrete	24	2.98		Light Grey
1139	GL 14C	Flake		Silcrete	37	9.9		Light Grey
1140	GL 14C	Flake		Silcrete	27	3.5		Light Grey
1141	GL 14C	Flake		Silcrete	29	5.9		Light Grey
1142	GL 14C	Flake		Silcrete	31	2.5		Light Grey
1143	GL 14C	Flake		Silcrete	32	2.7		Light Grey
1144	GL 14C	Flake		Silcrete	31	2.6		Light Grey
1145	GL 14C	Flake		Silcrete	14	0.3		Light Grey
1146	GL 14C	Flake		Silcrete	46	29.7		Light Brown
1147	GL 14C	Distal Flake		Silcrete	32	2.9		Red
1148	GL 14C	Flaked piece		Silcrete	23	5.9		Light Grey
1149	GL 14C	Flaked piece		Silcrete	29	6		Light Grey
1150	GL 14C	Flake		Silcrete	24	1.56		Light Grey
1151	GL 14C	Core		Silcrete	63	152		Brown
1152	GL 14C	Core		Silcrete	51	38.7		Light Grey
1153	GL 14C	Core		Silcrete	39	19.4		Red
1154	GL 14C	Core		Silcrete	30	17.6		Light Grey
1155	GL 14C	Core		Silcrete	25	8.4		Light Grey
1156	GL 14C	Core		Silcrete	26	8.6	flakes originate from single platform	Light Grey
1157	GL 14C	Core		Silcrete	33	13.08		Light Grey
1158	GL 14C	Flaked piece		Silcrete	37	11.19		Light Grey
1159	GL 14C	Flaked piece		Silcrete	36	11.75		Light Grey
1160	GL 14C	Flaked piece		Silcrete	22	6.33		Light Grey
1161	GL 14C	Flaked piece		Silcrete	72	79	20% cortex	Red
1162	GL 14C	Flaked piece		Silcrete	66	46.3	30% cortex	Red
1163	GL 14C	Flaked piece		Chert	26	6.02		Dark grey
1164	GL 14C	Flaked piece		Silcrete	22	3.06		Red
1165	GL 14C	Flaked piece		Quartz	10	0.19		Milky
1166	GL 14C	Core		Silcrete	63	99	5% cortex	Red
1167	GL 14C	Core		Silcrete	35	12.3		Red
1168	GL 14C	Core		Chert	60	102	20% cortex, multi-directional flaking	Black
1169	GL 14C	Core		Chert	32	14.16		Dark grey
1170	GL 14C	Flake		Chert	35	13.35		Dark grey
1171	GL 14C	Flake		Chert	30	6.73		Dark grey
1172	GL 14C	Flake		Silcrete	29	8.35		Light Grey
1173	GL 14C	Flake		Silcrete	31	10.47		Light Grey
1174	GL 14C	Flake		Silcrete	29	4.5		Light Grey
1175	GL 14C	Flake		Silcrete	23	4.5		Light Grey

1176	GL 14C	Flake		Silcrete	40	24.8		Red
1177	GL 14C	Flake		Silcrete	24	1.28		Pink
1178	GL 14C	Flake		Silcrete	14	0.65		Pink
1179	GL 14C	Flake		Silcrete	21	1.75		Pink
1180	GL 14C	Flake		Silcrete	27	1.9		Light Grey
1181	GL 14C	Flake		Silcrete	19	1.46		Light Grey
1182	GL 14C	Proximal flake		Chert	22	1.82		Dark grey
1183	GL 14C	Flaked piece		Chert	16	1.27		Dark grey
1184	GL 14C	Distal Flake		Silcrete	21	1.75		Dark grey
1185	GL 14C	Distal Flake		Silcrete	24	1.12		Pink
1186	GL 14C	Distal Flake		Silcrete	20	2.27		Red
1187	GL 14C	Core		Silcrete	23	4.92		Red
1188	GL 14C	Distal Flake		Quartzite	30	5.01		Light Brown
1189	GL 14C	Longitudinal split		Silcrete	15	0.48		Red
1190	GL 14C	Flake		Quartz	22	2.54		Light Grey
1191	GL 14C	Flake		Quartz	27	3.03		Light Grey
1192	GL 14C	Flake		Quartz	25	2.26		Light Grey
1193	GL 14C	Flake		Quartz	25	314		Light Grey
1194	GL 14C	Flake		Quartz	21	1.81		Light Grey
1195	GL 14C	Flake		Quartz	14	1.07		Light Grey
1196	GL 14C	Flake		Quartz	21	1.2		Light Grey
1197	GL 14C	Flake		Quartz	32	4.75		Milky
1198	GL 14C	Flake		Quartz	17	1.16	Pink cortex 90% dorsal	Milky
1199	GL 14C	Flake		Quartz	20	1.95		Crystal
1200	GL 14C	Flake		Quartz	15	0.85		Milky
1201	GL 14C	Flake		Quartz	12	0.39		Milky
1202	GL 14C	Flake		Quartz	22	2.16		Milky
1203	GL 14C	Flake		Quartz	26	3.2		Milky
1204	GL 14C	Flake		Quartz	21	1.39		Milky
1205	GL 14C	Flake		Quartz	23	2.16		Milky
1206	GL 14C	Flake		Quartz	23	1.68		Milky
1207	GL 14C	Flake		Quartz	18	1.14		Milky
1208	GL 14C	Flake		Quartz	13	0.45		Light Grey
1209	GL 14C	Flake		Quartz	33	6.42	Pink cortex on platform	Crystal
1210	GL 14C	Flake		Quartz	32	7.62		Milky
1211	GL 14C	Flake		Quartz	22	1.91		Milky
1212	GL 14C	Flake		Quartz	18	1.21		Milky
1213	GL 14C	Flake		Quartz	16	0.73		Milky
1214	GL 14C	Flake		Quartz	17	0.96		Milky
1215	GL 14C	Flake		Quartz	26	8.26		Milky
1216	GL 14C	Flake		Quartz	17	0.5		Milky
1217	GL 14C	Flake		Quartz	39	35.09	Split cobble, Pink cortex	Milky
1218	GL 14C	Distal Flake		Quartz	14	0.39		Milky
1219	GL 14C	Distal Flake		Quartz	12	0.27		Milky
1220	GL 14C	Distal Flake		Quartz	10	0.2		Milky
1221	GL 14C	Medial Flake		Quartz	20	1.79		Light Grey
1222	GL 14C	Medial Flake		Quartz	22	2.03		Milky
1223	GL 14C	Medial Flake		Quartz	8	0.24		Milky
1224	GL 14C	Flaked piece		Quartz	27	7.3		Milky
1225	GL 14C	Flaked piece		Quartz	25	7.73		Milky
1226	GL 14C	Flaked piece		Quartz	20	3.8		Milky
1227	GL 14C	Flaked piece		Quartz	17	3.3		Milky
1228	GL 14C	Flaked piece		Quartz	17	1.25		Milky
1229	GL 14C	Flaked piece		Quartz	12	0.5		Milky
1230	GL 14C	Flaked piece		Quartz	14	0.4		Milky
1231	GL 14C	Core		Quartz	47	53		Milky
1232	GL 14C	Core		Quartz	37	22		Milky
1233	GL 14C	Core		Quartz	35	19.2		Milky
1234	GL 14C	Core		Quartz	35	17.1		Milky
1235	GL 14C	Core		Quartz	41	30.4		Light Grey
1236	GL 14C	Flake		Silcrete	14	0.47		Light Grey
1237	GL 14C	Flake		Silcrete	13	0.47		Light Grey
1238	GL 14C	Flake		Silcrete	39	15.7		Light Grey
1239	GL 14C	Flake		Silcrete	31	5.8		Light Grey
1240	GL 14C	Flake		Silcrete	32	6.52		Light Grey
1241	GL 14C	Flake		Silcrete	22	2.47		Light Grey
1242	GL 14C	Flake		Silcrete	31	2.3		Dark grey
1243	GL 14C	Flake		Silcrete	21	1.55		Light Grey
1244	GL 14C	Flake		Silcrete	23	1.33		Light Grey
1245	GL 14C	Flake		Silcrete	19	1.27		Light Grey
1246	GL 14C	Flake		Silcrete	24	1.79		Light Grey
1247	GL 14C	Flake		Silcrete	19	2.38		Light Grey
1248	GL 14C	Flake		Silcrete	19	1.13		Light Grey
1249	GL 14C	Flake		Silcrete	20	1.12		Light Grey
1250	GL 14C	Flake		Silcrete	25	1.97		Light Grey
1251	GL 14C	Flake		Silcrete	18	0.33		Light Grey
1252	GL 14C	Flake		Silcrete	32	2.82		Light Grey
1253	GL 14C	Flake		Silcrete	26	1.97		Light Grey
1254	GL 14C	Flake		Silcrete	22	4.56		Light Grey
1255	GL 14C	Flake		Silcrete	33	3.8		Light Grey
1256	GL 14C	Flake		Silcrete	25	1.4		Light Grey

1257	GL 14C	Flake		Silcrete	42	4.84		Light Grey
1258	GL 14C	Flake		Silcrete	17	0.94		Light Grey
1259	GL 14C	Flake		Silcrete	21	1.38		Light Grey
1260	GL 14C	Flake		Silcrete	27	3.33		Light Grey
1261	GL 14C	Flake		Quartzite	19	1.9		Light Grey
1262	GL 14C	Flake		Silcrete	13	0.49		Light Grey
1263	GL 14C	Flake		Chert	10	0.12		Light Grey
1264	GL 14C	Flake		Chert	41	11.38		Crystal
1265	GL 14C	Flake		Chert	10	0.12		Light Grey
1266	GL 14C	Distal Flake		IMT	36	7.16		Dark grey
1267	GL 14C	Distal Flake		Silcrete	33	5.6		Light Grey
1268	GL 14C	Distal Flake		Silcrete	34	4.5		Light Grey
1269	GL 14C	Distal Flake		Silcrete	24	1.74		Light Grey
1270	GL 14C	Distal Flake		Silcrete	19	1.18		Light Grey
1271	GL 14C	Distal Flake		Silcrete	21	1.42		Light Grey
1272	GL 14C	Distal Flake		Silcrete	14	0.41		Light Grey
1273	GL 14C	Distal Flake		Silcrete	20	2.21		Pink
1274	GL 14C	Distal Flake		Silcrete	25	1.61		Light Grey
1275	GL 14C	Distal Flake		Quartzite	17	1.81		Light Grey
1276	GL 14C	Flake		Chert	11	0.28		Light Grey
1277	GL 14C	Longitudinal split		Chert	38	8.02		Light Grey
1278	GL 14C	Distal Flake		Chert	24	4.01		Light Grey
1279	GL 14C	Proximal flake		Silcrete	20	1.75		Light Grey
1280	GL 14C	Proximal flake		Silcrete	19	1.67		Light Grey
1281	GL 14C	Proximal flake		Silcrete	16	1.04		Light Grey
1282	GL 14C	Proximal flake		Silcrete	13	0.47		Light Grey
1283	GL 14C	Medial Flake		Silcrete	21	2.1		Light Grey
1284	GL 14C	Distal Flake		Chert	22	1.23		Light Grey
1285	GL 14C	Medial Flake		Silcrete	17	1.15		Light Grey
1286	GL 14C	Distal Flake		Silcrete	30	2.98		Light Grey
1287	GL 14C	Flaked piece		Silcrete	33	8.27		Light Grey
1288	GL 14C	Flaked piece		Silcrete	24	8.62		Light Grey
1289	GL 14C	Flaked piece		Silcrete	27	5.57		Light Grey
1290	GL 14C	Flaked piece		Silcrete	18	1.98		Light Grey
1291	GL 14C	Flaked piece		Silcrete	22	2.74		Light Grey
1292	GL 14C	Flaked piece		Silcrete	30	11.73		Light Grey
1293	GL 14C	Flaked piece		Silcrete	26	6.17		Light Grey
1294	GL 14C	Flaked piece		Silcrete	21	7.26		Light Grey
1295	GL 14C	Flaked piece		Silcrete	33	4.61		Light Grey
1296	GL 14C	Flaked piece		Silcrete	15	2.29		Light Grey
1297	GL 14C	Flaked piece		Chert	27	7.2		Dark grey
1298	GL 14C	Flaked piece		Chert	19	2.06		Light Grey
1299	GL 14C	Core		Silcrete	48	54		Light Grey
1300	GL 14C	Core		Silcrete	35	12.44		Light Grey
1301	GL 14C	Core		Silcrete	26	8.15		Light Grey
1302	GL 14C	Core		Silcrete	31	14.04		Light Grey
1303	GL 14C	Core		Silcrete	31	7.51		Light Grey
1304	GL 14C	Core		Silcrete	25	5.71		Light Grey
1305	GL 14C	Core		Silcrete	22	5.9		Light Grey
1306	GL 14C	Core		Chert	61	108		Dark grey
1307	GL 14C	Core		Chert	49	65		Light Grey
1308	GL 14C	Core		Chert	35	23		Light Grey
1309	GL 14C	Distal Flake		Silcrete	26	4.22		Light Grey
1310	GL 14C	Longitudinal split		Silcrete	25	3.7		Light Grey
1311	GL 14C	Retouched flake	Backed	Silcrete	22	1.99	possibly a Bondi Point, distal end missing. Backed along whole length of left lateral margin	Light Grey
1312	GL 14C	Retouched flake	Geometric microlith	Silcrete	23	1.72	backed along along proximal and distal ends to create a triangular shape	Light Grey
1313	GL 14C	Retouched flake	Geometric microlith	Silcrete	18	1.87	retouched on two of three sides, retouched sides meet at a point	Light Grey
1314	GL 14C	Retouched flake	Backed	Silcrete	24	1.85	Backed along left lateral margin	Light Grey
1315	GL 14C	Retouched flake	retouch	Silcrete	12	0.46	small flake, retouched on two sides	Light Grey
1316	GL 14D	Retouched flake	retouch	Silcrete	55	31.34	Retouched along left lateral margin. Larger flakes removed subsequently struck from ventral surface to create larger flakes (not retouch)	Light Grey
1317	GL 14D	Flake		Quartz	27	10.3		Milky
1318	GL 14D	Flake		Quartzite	30	3.92		Light Grey
1319	GL 14D	Flake		Silcrete	36	3.7		Light Grey
1320	GL 14D	Proximal flake		Silcrete	17	1.29		Light Grey
1321	GL 14D	Flake		Silcrete	15	0.69		Light Grey
1322	GL 14D	Flaked piece		Chert	50	19		Dark grey
1323	GL 14D	Flaked piece		Quartz	13	0.66		Milky
1324	GL 10	Retouched flake	retouch	Silcrete	37	6	Retouched along right lateral margin, four flake scars. High quartz content	Red
1325	GL 10	Core		Silcrete	38	12.9	Possibly heat treated	Red
1326	GL 10	Flake		Silcrete	22	4.13		Red
1327	GL 10	Longitudinal split		Silcrete	28	1.54	proximal flake	Light Grey
1328	GL 10	Core		Quartz	46	28.14	Pinkish	Milky

1329	GL 8	Flake		Silcrete	33	11.77		Yellow
1330	GL 8	Flake		Silcrete	21	1.94		Light Grey
1331	GL 8	Flaked piece		Silcrete	37	8.8		Light Grey
1332	GL 8	Flaked piece		Quartz	23	4.6		Crystal
1333	GL 7	Flake		Quartz	28	3.67	Pink cortex platform	Milky
1334	GL 11	Flake		Silcrete	18	1.04		Light Grey
1335	GL 9	Flake		Quartz	24	1.86		Milky
1336	GL 14C	Flaked piece		Silcrete	44	5.51		Light Grey
1337	GL 14C	Flaked piece		Silcrete	20	3.3		Light Grey
1338	GL 14C	Flaked piece		Silcrete	11	2.4		Light Grey
1339	GL 14C	Flaked piece		Silcrete	16	0.51		Light Grey
1340	GL 14C	Flaked piece		Silcrete	13	0.75		Light Grey
1341	GL 14C	Flaked piece		Silcrete	12	0.61		Light Grey
1342	GL 14C	Flaked piece		Silcrete	13	0.82		Light Grey
1343	GL 14C	Flaked piece		Silcrete	4	0.23		Light Grey
1344	GL 14C	Flaked piece		Quartz	44	5.51		Milky

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Appendix D

Appointment of Expert

Department of Planning and Environment

Our ref: SSD-7090-PA-17

Mr Davd Kelly
Head of Development
53 Cross Street
Double Bay, NSW, 2028

16/10/2023

Subject: Appointment of expert to prepare Aboriginal Heritage Management Plan

Dear Mr Kelly

I refer to your request dated 11 October 2023 for the Planning Secretary's endorsement of Alan Williams to prepare the Aboriginal Heritage Management Plan for the Gunlake Quarry Extension Project (SSD-7090).

The Department has reviewed the nomination and information you have provided and is satisfied that the nominee is suitably qualified and experienced. Accordingly, I can advise that the Planning Secretary endorses the appointment of Alan Williams to prepare the Aboriginal Heritage Management Plan.

If you wish to discuss the matter further, please contact Jarrod Blane on 02 8275 1831 or at jarrod.blane@dpie.nsw.gov.au.

Yours sincerely

JEvans

Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Planning Secretary